

**Financing European SMEs:  
The Case of Family Firms**

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**QQI**

**Financing European SMEs:  
The Case of Family Firms**

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## **Declaration**

The Author hereby declares that, except where duly acknowledged that this thesis is wholly  
their own work.

Signed:-----

Denis Walsh

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# **Abstract**

Globally more than 95% of firms are classified as SMEs (Beck, 2013), while in Europe SMEs account for 99.8% of all enterprises and approximately 70% of all employment (European Commission, 2015; Ferrando et al., 2017). However, the largest subset of SMEs is family-owned firms. Yet few studies to date examine their financing apart from Chu (2009), Mazzi (2011), Carney et al. (2015). Whilst financial life cycle theory and trade-off theory have been found to offer a great deal of insight into the capital structure of SMEs, it is agency concerns and the pecking order hypothesis which have greater relevance to the financing decisions of family-owned firms.

This research examines the sources of finance used by European family-owned SMEs in contrast to all other SMEs (notably solely owned firms and professionally owned SMEs) and assesses whether or not family firms are credit rationed. Using the ECBs SAFE survey from 2014 to 2017 the sample consists of circa 56,000 firm responses across twelve European countries. The study covers a unique period in the aftermath of the sovereign debt crisis and includes the five European countries who experienced the most profound effects of this crisis. A probit maximum-likelihood methodology is used to test hypotheses for source usage, applications for credit, the presence of borrower discouragement, and for different forms of credit rationing.

Our findings suggest that family-owned SMEs are more likely to use retained earnings, grants and subsidised bank loans as well as bank credit lines, bank loans and trade credit. Conversely, the results indicate that family firms do not favour using other loans, equity capital, leasing and hire purchase and other sources of finance. The assertion is that their preference is for more traditional sources of finance which do not involve any loss in control. Family-owned firms appear more likely to apply for bank credit with no evidence of them being discouraged borrowers or experiencing any form of credit rationing. The study confirms the applicability of pecking order, agency theory, financial lifecycle theory and trade-off theory.

The study is timely in a period of relative economic stability intersecting the European sovereign debt crisis and the recovery support policies across Europe culminating in the formation of the Capital Markets Union (CMU) plan (European Commission, 2019). The study also contributes to the policy literature.



## **List of Figures**

Figure 1 – Tagiuri & Davis 3 Circle Model.....	15
Figure 2 Application and Outcomes Decision Tree.....	142
Figure 3 - RQ1 Summary.....	245
Figure 4 - RQ2 Summary.....	308

## **List of Tables**

Table 1 – Summary of Hypotheses Underpinning RQ1 .....	100
Table 2 – Summary of Empirical Support RQ1.....	101
Table 3 – Summary of Hypotheses RQ2 .....	102
Table 4 – Summary of Supporting Literature RQ2 .....	103
Table 5 – Summary of Philosophical Oreintation.....	112
Table 6 – Sample All Countries.....	127
Table 7 – Sample 12 Countries.....	128
Table 8 – Final Sample .....	129
Table 9 – Ownership Variable .....	132
Table 10 – Firm-level Control Variables .....	133
Table 11 - Indices.....	134
Table 12 – Trading Distress .....	135
Table 13 – Financial Distress.....	135
Table 14 – RQ1 Dependent Variable.....	137
Table 15 – Equations under RQ1 .....	138
Table 16 – RQ1 Sample Response Levels .....	141

Table 17 – RQ2 Dependent Variable.....	142
Table 18 – Equations under RQ2.....	144
Table 19 – RQ2 Sample Response Levels .....	145
Table 20 – Descriptive Statistics, Full Sample & Ownership Types.....	147
Table 21 – Descriptive Statistics – Austria, Belgium, Germany, Spain, & Finland.....	154
Table 22 – Descriptive Statistics – France, Greece, Ireland, Italy, & Netherlands .....	155
Table 23 – Descriptive Statistics – Portugal, Slovakia, Distressed Economies, & Non-distressed Economies.....	156
Table 24 – Indices & Macroeconomic Indicators by Country and Ownership Type .....	159
Table 25 – Family Firm Summary Statistics .....	162
Table 26 – Family Firm Summary Statistics Continued.....	163
Table 27 – RQ1 Descriptive .....	169
Table 28 – RQ1 Descriptive Continued.....	170
Table 29 - Retained Earnings – Family-owned SMEs v solely owned SMEs.....	173
Table 30 - Grants and Subsidised Bank Loans – Family-owned SMEs v solely owned SMEs .....	175
Table 31 - Bank Credit Lines – Family-owned SMEs v solely owned SMEs.....	177
Table 32 - Bank Loans – Family-owned SMEs v solely owned SMEs.....	179
Table 33 – Trade Credit – Family-owned SMEs v solely owned SMEs .....	181
Table 34 - Other Loans – Family-owned SMEs v solely owned SMEs .....	183
Table 35 – Debt Securities – Family-owned SMEs v solely owned SMEs.....	185
Table 36 – Equity Capital – Family-owned SMEs v solely owned SMEs .....	187
Table 37 – Leasing and Hire-Purchase – Family-owned SMEs v solely owned SMEs .....	189
Table 38 – Factoring – Family-owned SMEs v solely owned SMEs .....	191
Table 39 – Other Sources – Family-owned SMEs v solely owned SMEs.....	193

Table 40 – Retained Earnings – Family-owned SMEs v professionally managed SMEs .....	195
Table 41 – Grants and Subsidised Loans – Family-owned SMEs v professionally managed SMEs.....	197
Table 42 – Bank Credit Lines – Family-owned SMEs v Professionally managed SMEs .....	199
Table 43 – Bank Loans – Family-owned SMEs v professionally managed SMEs .....	201
Table 44 – Trade Credit – Family-owned SMEs v professionally managed SMEs .....	203
Table 45 – Other Loans – Family-owned SMEs v professionally managed SMEs .....	205
Table 46 – Debt Securities – Family-owned SMEs v professionally managed SMEs .....	207
Table 47 – Equity Capital – Family-owned SMEs v professionally managed SMEs .....	208
Table 48 – Leasing and Hire Purchase – Family-owned SMEs v professionally managed SMEs .....	211
Table 49 – Factoring – Family-owned SMEs v professionally managed SMEs .....	213
Table 50 – Other Sources – Family-owned SMEs v professionally managed SMEs.....	215
Table 51 – RQ1 Single Country Summary Family Owned SMEs & Sole Owners.....	228
Table 52 – RQ1 Single Country Summary Family Owned SMEs & Professional Owners ..	230
Table 53 – Family Firm Subsample Summarised.....	223
Table 54 – RQ1 Robustness Testing.....	234
Table 55 – The Lending Infrastructure Variables .....	236
Table 56 – Bank Credit Lines – Family-owned SMEs v solely owned SMEs .....	249
Table 57 – Bank Loans – Family-owned SMEs v solely owned SMEs .....	253
Table 58 – Trade Credit – Family-owned SMEs v solely owned SMEs .....	256
Table 59 – Other Sources – Family-owned SMEs v solely owned SMEs.....	259
Table 60 – Bank Credit Lines – Family-owned SMEs v professionally managed SMEs .....	263
Table 61 – Bank Loans – Family-owned SMEs v professionally managed SMEs .....	266
Table 62 – Trade Credit – Family-owned SMEs v professionally managed SMEs .....	269

Table 63 – Other Sources – Family-owned SMEs v professionally managed SMEs.....	272
Table 64 - Applications and Outcomes for Bank Credit Lines.....	291
Table 65 – Applications and Outcomes for Bank Loans .....	292
Table 66 – Applications and Outcomes for Trade Credit.....	293
Table 67 – Applications and Outcomes for Other Sources.....	294
Table 68 – Applications and Outcomes for Bank Credit Lines .....	295
Table 69 – Applications and Outcomes for Bank Loans .....	296
Table 70 – Applications and Outcomes for Trade Credit .....	297
Table 71 – Applications and Outcomes for Other Sources.....	298
Table 72 – Applications and Outcomes for Bank Credit Lines .....	283
Table 73 – Applications and Outcomes for Bank Loans .....	284
Table 74 – Applications and Outcomes for Trade Credit .....	285
Table 75 – Applications and Outcomes for Other Sources.....	286
Table 76 – RQ2 Robustness Tests .....	299
Table 77 – The Lending Infrastructure Controls .....	300
Table 78 – Research Question 1 – Summary of Empirical Findings.....	312
Table 79 – RQ2 Summary .....	334

# **Contents**

Chapter One: Introduction .....	1
1.1    Research Context.....	1
1.2    Research Gap.....	4
1.3    Methodology .....	8
1.4    Contribution .....	9
1.5    Structure of the Document .....	12
1.6    Conclusion.....	13
Chapter Two: Literature Review .....	14
2.1    Introduction .....	14
2.2    Family Firms .....	14
2.2.1    Hallmarks of Family Firms.....	15
2.2.2    Family Firm Definition Dilemma .....	17
2.3    Theoretical Framework .....	21
2.3.1    Agency Theory.....	22
2.3.2    Trade-off Theory.....	25
2.3.3    Pecking Order Theory.....	27
2.3.4    Financial Life Cycle Theory .....	30
2.3.5    Credit Constraint.....	31
2.4    Empirical Literature .....	36
2.4.1    Firm Ownership .....	37

2.4.2	Firm Age .....	40
2.4.3	Firm Size .....	43
2.4.4	Firm Profitability .....	45
2.4.5	Firm Growth.....	46
2.4.6	Firm Sector.....	48
2.4.7	Firm Exports .....	49
2.4.8	Firm Innovation .....	50
2.4.9	Country Institutional Setting.....	51
2.4.10	Summary .....	56
2.5	Research Objective.....	57
2.6	Research Questions .....	57
2.7	Sources of Finance & Hypotheses RQ1 .....	58
2.7.1	Retained Earnings .....	58
2.7.2	Grants & Subsidised Bank Loans .....	59
2.7.3	Bank Credit Lines, Overdrafts and Credit Cards .....	62
2.7.4	Bank Loans .....	64
2.7.5	Trade Credit .....	66
2.7.6	Other Loans.....	68
2.7.7	Debt Securities .....	70
2.7.8	Equity Capital .....	70
2.7.9	Leasing and Hire Purchase.....	72

2.7.10	Factoring .....	74
2.7.11	Other Sources.....	75
2.7.12	Summary .....	77
2.8	Access to finance.....	78
2.8.1	SME Finance Availability.....	78
2.8.2	Application likelihood .....	82
2.8.3	Need the finance likelihood .....	83
2.8.4	Discouraged likelihood .....	84
2.8.5	Unrationed likelihood .....	86
2.8.6	Strong Rationing likelihood.....	87
2.8.7	Weak Rationing likelihood .....	90
2.8.8	Self-Rationing likelihood.....	91
2.9	Sources of Finance, Credit Constraint & Hypotheses RQ2 .....	92
2.9.1	Bank Credit Lines, Overdrafts and Credit Cards .....	92
2.9.2	Bank Loans .....	94
2.9.3	Trade Credit .....	96
2.9.4	Other financing sources .....	97
2.10	Summary .....	99
	Chapter Three: Methodology .....	104
3.1	Chapter Overview .....	104
3.2	Research Philosophy .....	104

3.2.1	Epistemology .....	105
3.2.2	Ontology .....	106
3.2.3	Research Approach .....	106
3.2.4	Research Composition .....	107
3.2.5	Research Strategy.....	108
3.2.6	Time Horizon .....	109
3.2.7	Research Method .....	109
3.2.8	Ethical and moral issues.....	110
3.2.9	Summary Philosophical Orientation .....	112
3.3	Research Objective.....	113
3.4	Research Questions .....	113
3.5	Research Design.....	114
3.6	Data Collection.....	115
3.7	The SAFE Survey.....	117
3.8	Reliability, Replication and Validity of Research.....	118
3.8.1	Reliability.....	118
3.8.2	Replication .....	119
3.8.3	Validity .....	119
	<i>Measurement Validity .....</i>	119
	<i>Internal Validity .....</i>	120
	<i>External Validity .....</i>	121

<i>Ecological Validity</i> .....	124
3.9 Sample Selection & Sample Criteria.....	124
3.10 Method of Analysis .....	129
3.10.1 Methodologies used in Previous Studies .....	130
3.10.2 Independent Variables .....	131
3.10.3 Specification Method.....	136
3.10.4 Probit Model used for research question 1 .....	136
3.10.5 RQ1 Response levels .....	140
3.10.6 Probit model used for research question 2 .....	141
3.10.7 RQ2 Response levels .....	144
3.11 Sample Descriptive Statistics .....	145
3.11.1 Firm Ownership .....	148
3.11.2 Firm Age .....	148
3.11.3 Firm Size.....	150
3.11.4 Firm Sector.....	151
3.11.5 Firm Exports .....	152
3.11.6 Firm Innovation .....	152
3.11.7 Indices proxies .....	157
3.11.8 Family Firm Summary Statistics .....	160
3.12 Summary .....	164
Chapter Four: Findings - Research Question 1 .....	165

4.1	Introduction .....	165
4.2	Descriptive Statistics: Sources of Finance Used .....	166
4.3	Sources of Finance used: Family-owned SMEs V Solely owned SMEs .....	171
4.3.1	Retained Earnings .....	171
4.3.2	Grants and Subsidised Bank Loans.....	174
4.3.3	Bank Credit Lines .....	176
4.3.4	Bank Loans .....	178
4.3.5	Trade Credit .....	180
4.3.6	Other Loans.....	182
4.3.7	Debt Securities .....	184
4.3.8	Equity Capital .....	186
4.3.9	Leasing and Hire-purchase .....	188
4.3.10	Factoring .....	190
4.3.11	Other Sources.....	192
4.4	Sources of Finance used: Family-owned SMEs V Professionally owned SMEs ...	194
4.4.1	Retained Earnings .....	194
4.4.2	Grants and Subsidised Bank Loans.....	196
4.4.3	Bank Credit Lines .....	198
4.4.4	Bank Loans .....	200
4.4.5	Trade Credit .....	202
4.4.6	Other Loans.....	204

4.4.7	Debt Securities .....	206
4.4.8	Equity Capital .....	207
4.4.9	Leasing and Hire-purchase .....	210
4.4.10	Factoring .....	212
4.4.11	Other Sources.....	214
4.5	Sources of Finance used: Family-owned SMEs V all other SMEs.....	216
4.5.1	Firm Ownership .....	216
4.5.2	Firm level variables.....	216
4.5.3	Macroeconomic controls.....	217
4.6	Sources of Finance used: Family-owned SME Subsample.....	219
4.6.1	Retained Earnings .....	219
4.6.2	Grants and Subsidised Bank Loans.....	219
4.6.3	Bank Credit Lines .....	219
4.6.4	Bank Loans .....	220
4.6.5	Trade Credit .....	220
4.6.6	Other Loans.....	220
4.6.7	Debt Securities .....	221
4.6.8	Equity Capital .....	221
4.6.9	Leasing and Hire-purchase .....	221
4.6.10	Factoring .....	221
4.6.11	Other Sources.....	222

4.6.12	Summary .....	222
4.7	Sources of Finance used: Single Country Dummies (Model 9).....	224
4.7.1	Retained Earnings .....	224
4.7.2	Grants & Subsidised Bank Loans .....	224
4.7.3	Bank Credit Lines .....	224
4.7.4	Bank Loans .....	225
4.7.5	Trade Credit .....	225
4.7.6	Other Loans.....	225
4.7.7	Debt Securities .....	225
4.7.8	Equity Capital .....	225
4.7.9	Leasing and Hire Purchase.....	226
4.7.10	Factoring .....	226
4.7.11	Other Sources.....	226
4.7.12	Summary .....	226
4.8	Robustness Testing RQ1 .....	232
4.9	Summary Research Question 1 .....	240
	Chapter Five: Findings - Research Question 2 .....	246
5.1	Introduction .....	246
5.2	Family-owned SMEs V Solely owned SMEs .....	247
5.2.1	Applications and Outcomes for Bank Credit Lines .....	247
5.2.2	Applications and Outcomes for Bank Loans .....	251

5.2.3	Applications and Outcomes for Trade Credit .....	254
5.2.4	Applications and Outcomes for Other Sources.....	257
5.3	Family-owned SMEs vs Professionally owned SMEs.....	260
5.3.1	Applications and Outcomes for Bank Credit Lines .....	260
5.3.2	Applications and Outcomes for Bank Loans .....	264
5.3.3	Applications and Outcomes for Trade Credit .....	268
5.3.4	Applications and Outcomes for Other Sources.....	271
5.4	Family-owned SMEs V all other SMEs.....	274
5.4.1	Firm Ownership .....	274
5.4.2	Firm level variables.....	275
5.4.3	Macroeconomic controls.....	276
5.5	Family-owned SMEs Subsample .....	281
5.5.1	Sources of finance.....	281
5.5.2	Summary .....	282
5.6	Single Country Dummies (Alternative Model) .....	287
5.6.1	Bank Credit Lines .....	287
5.6.2	Bank Loans .....	288
5.6.3	Trade Credit .....	289
5.6.4	Other Sources.....	289
5.6.5	Summary .....	290
5.7	Robustness Testing RQ2 .....	299

5.8 Summary Research Question 2 .....	303
Chapter Six: Discussion .....	310
6.1 Introduction .....	310
6.2 RQ1 Discussion.....	310
6.2.1 Retained Earnings .....	313
6.2.2 Grants and subsidised bank loans .....	316
6.2.3 Bank credit lines .....	318
6.2.4 Bank Loans .....	320
6.2.5 Trade Credit .....	322
6.2.6 Other Loans.....	324
6.2.7 Debt Securities .....	325
6.2.8 Equity Capital .....	326
6.2.9 Leasing and Hire-purchase .....	328
6.2.10 Factoring .....	329
6.2.11 Other Sources.....	331
6.2.12 Summary .....	332
6.3 RQ2 Discussion.....	332
6.3.1 Applications and Outcomes for Bank Credit Lines .....	335
6.3.2 Applications and Outcomes for Bank Loans .....	339
6.3.3 Applications and Outcomes for Trade Credit .....	342
6.3.4 Applications and Outcomes for Other Sources.....	345

6.3.5 Summary .....	346
6.4 Summary Discussion.....	347
Chapter Seven: Conclusion.....	352
7.1 Introduction .....	352
7.2 Research Objective and Research Questions .....	352
7.3 Key Conclusions of the study .....	353
7.4 Contribution of the Study.....	354
7.5 Policy Implications.....	356
7.6 Limitations of the Research.....	357
7.7 Recommendations for Future Research .....	358
7.8 Conclusion.....	359
Bibliography .....	361
Appendices.....	399
RQ1 Robustness Appendices.....	399
RQ2 Robustness Appendices .....	477
SAFE Questionnaire .....	525

# **Chapter One: Introduction**

The purpose of this Chapter is to provide a precis of the study. Firstly, the context is established which provides a broad framework for the study. The research rationale is then set out which specifies the research gap and subsequent formulation of the research questions. Details of the methodology then follows and its rationale before specification of the proposed contribution and lastly the structure of the document is outlined.

## **1.1 Research Context**

SMEs (Small and Medium Enterprises) are important entities having been the subject of several academic studies (Sogorb-Mira, 2005; Cull et al., 2006; Ayyagari et al., 2007; Psillaki & Daskalakis, 2009; Jõeveer, 2013; Ferrando et al., 2017) and practitioner studies also (European Commission, 2015; OECD, 2017; Eurostat, 2018). Globally more than 95% of firms are classified as SMEs (Beck, 2013), with European SMEs accounting for 99.8% of all enterprises and approximately 70% of all employment (Franks et al., 2012; Palacín-Sánchez et al., 2013; European Commission, 2015; Ferrando et al., 2017). Lauded as the economic innovators, SMEs are the drivers of growth through the provision of employment and serve as a measure of a nation's economic development. A number of studies document SME finance with considerable evidence of their reliance on bank finance (Beck et al., 2008b; Ferrando et al., 2016). Their access to finance differs considerably in contrast to larger firms (Cull et al., 2006; Ferrando & Preuss, 2018).

Family-owned businesses are the largest subset of SMEs and represent a crucial socio-economic cohort across the world economies (La Porta et al., 1999; Schulze & Gedajlovic., 2010). This is particularly evident across Western Europe (Faccio & Lang, 2002; Burgstaller & Wagner, 2015; Keasey et al., 2015). Family-owned SMEs have been identified as different to all other SMEs (Memili, et al., 2015). Notably these family firm

differences are evident in their organisational goals, their resources, their long-term horizon, their attitude to risk, their decision-making and in their approach to new investments (Memili et al., 2015). Yet, most studies examine SME ownership as a homogeneous group (Ntoung et al., 2020). This study is different as its primary focus is the financing patterns of family-owned SMEs, who are hugely prevalent across several European countries. A sample of firms which meet the European Commission's definition of a small and medium sized enterprise (SMEs) are included in the study. The criteria covers firms with up to 249 employees, annual turnover of less than or equal to 50 million euro or annual total balance sheet of less than or equal to 43 million euro (EU, 2003).

A large volume of empirical work has been conducted on family firms. The subject matter of these range from an analysis of their governance structures (Schulze et al., 2001; Chrisman et al., 2010), to succession planning (Tagiuri & Davis, 1996; Cucculelli & Micucci, 2008; Croci et al., 2011; Eddleston et al., 2013; Kotlar & De Massis, 2013), leadership in family firms (Villalonga & Amit, 2006; González et al., 2013) to their competitive advantage (Maury, 2006; Gómez-Mejía et al., 2007). Other studies contrast the performance of family versus non-family firms (Miller et al., 2007) and analyse publicly listed family firms (Anderson & Reeb, 2003a; Croci et al., 2011). Yet studies of the financing of private family firms are relatively rare (Carney et al., 2015) which is surprising as financial decision making is a key management challenge for such entities (Mahérault, 2004; Koropp et al., 2013; Lappalainen & Niskanen, 2013; Ramalho et al., 2014; Keasey et al., 2015). Furthermore, little is known about the financing of European family-owned SMEs with much of the work to-date conducted in a single country setting. These include the French focus of Mahérault, (2000; 2004), the Spanish work of López-Gracia & Sánchez-Andújar (2007), the Italian study of Migliori et al. (2018) and the Belgian analysis (Molly et al., 2019). Little is known about what sources of finance have

been deployed by small family-owned firms. This is particularly relevant in the aftermath of the more recent economic and sovereign debt crisis, given the reliance of European family-owned SMEs on bank finance and the prevalence of these firms in the weaker European countries (Portugal, Ireland, Italy, Greece and Spain (PIIGS))<sup>1</sup>. This study seeks to explore the small family firm gap in the finance literature by analysing the sources of finance employed by them and the likelihood of they experiencing credit constraint due to their preference for bank sources. As family firms' financial decision-making is different from non-family firms (Anderson et al., 2003b; Steijvers & Voordeckers, 2009; Gottardo & Moisello, 2014; Ramalho et al., 2014; Crespí & Martín-Oliver, 2015) this study concentrates on firm ownership, rather than governance or management. A comparison is conducted between family-owned SMEs and solely owned SMEs, professionally owned SMEs, and other SMEs (both sole owners and professionally owned firms combined)<sup>2</sup>. The rationale for choosing these three is as follows: firstly, family-owned firms are the largest subset of all SMEs who are characterised by unique attributes and may result in decisions which aim to satisfy the needs of the family and firm simultaneously (Memili et al., 2015). Sole owners are the second largest ownership cohort and are generally regarded as uncomplicated businesses with no legal distinction between the business and the owner. Decision-making is straightforward as there is only one business owner. Unlike family firms, sole owners are not as concerned with successional issues, or sale of the business as the sole proprietorship

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<sup>1</sup> PIIGS, used mainly in political terms, is an acronym which refers to 5 EU member states and members of the Eurozone namely Portugal, Ireland, Italy, Greece, and Spain (Brazys & Hardiman, 2015).

<sup>2</sup> Three ownership categories of European SMEs are broadly considered in this research. Family-owned SMEs also referred to as family firms, family business, or family-owned firms. Professionally owned SMEs, also referred to as professional-owners, professionally managed SMEs and professionally managed firms, include publicly held firms, business associates, other enterprises, venture capitalists, business angels and any other SMEs. Sole owner SMEs, also referred to as solely owned firms, sole owners, are those owned and managed by a single proprietor. Family-owned SMEs are also compared with other SMEs combined (comprised of professionally owned SMEs and solely owned SMEs).

ceases at that point. The third comparative group is classified ‘professionally owned SMEs’ and includes business associates, other enterprises, venture capitalists, business angels and any other SMEs. Again, unlike family-owned SMEs, this latter group are generally not related in any other way, thus their focus is concentrated on professional management of the business, predominantly to maximise profits (Sharma et al., 1997).

Small family-owned firm research has to date provided conflicting results due to factors such as the definition dilemma and inconsistent empirical evidence influenced by individual research choices such as methodology, data collection and other characteristics or variables (Mazzi, 2011). Studies on family firms financing adopt either a descriptive approach (Gallo et al., 2004) or else draw upon normative capital structure theories (López-Gracia & Sánchez-Andújar, 2007) which are based upon traditional financial market assumptions. These include agency theory (Anderson & Reeb, 2003a) closely followed by pecking order and trade off theories (Fama & French, 2002; Frank & Goyal, 2003; Michiels & Molly, 2017). Results have been affected by the family firm definition dilemma (Klein et al., 2005) which adds to the complexity of achieving consistent and comparable research findings (Mazzi, 2011). The difficulty in agreeing a family firm definition illustrates the heterogeneity that prevails within this cohort (Chua et al., 1999; Astrachan et al., 2002). This study, whilst guided by the European Commission (2009) definition of a family business, relies on the respondents’ self-selection of ownership status which is then narrowed to family-owned SMEs in the data sample.

## 1.2 Research Gap

A large volume of studies (both theoretical and empirical) have examined financing of the SME sector in recent years, particularly across Europe and the applicability of several capital structure theories, notably agency theory, pecking order theory and financial life cycle of the SME sector in recent years, particularly across Europe (Artola & Genre,

2011; Ferrando & Griesshaber, 2011; Popov & Udell, 2012; Drakos, 2013; Casey & O'Toole, 2014; Holton et al., 2014; Öztürk & Mrkaic, 2014; Ferrando & Mulier, 2015a; Moritz et al. 2016; Ferrando et al., 2017; Andrieu et al., 2018; Masiak et al., 2019; Mc Namara et al., 2020). Yet, the family firm subset is devoid of attention despite the importance of this cohort to the economic wellbeing of Europe (European Commission 2009). Nearly all SME studies treat this cohort as one homogeneous group failing to recognise the unique hallmarks of family-owned firms as a distinct group (Memili et al., 2015, Ntoung et al., 2020). Vadnjal & Glas (2008) and Ramalho et al., (2014) attest to how the financing decision making of small family firms is different to that of other SMEs. A gap in the finance literature exists in the context of privately-owned family firms (Chu, 2009; Mazzi, 2011; Carney et al., 2015). The structure of family firms may offer an antidote to the difficulties accessing external finance for firms in times of economic shock (Crespí & Martín-Oliver, 2015).

The purpose of this study is to examine the sources of finance employed by European SMEs and specifically family-owned firms within this group. Thus, the study firstly seeks to exploit this gap by evaluating the funding of European family-owned SMEs and provides a comprehensive insight into the sources of finance deployed by these firms. The sources include retained earnings, bank debt, grants and subsidised bank loans, trade credit, leasing/HP, debt securities, external equity and alternative sources of finance. The study underpinned by the capital structure theories, particularly agency theory, the pecking order hypothesis and financial life cycle theory will assess their applicability to the financing of European family-owned SMEs. Prior studies assert that the differences within the family firm group may be an avenue for further research (Sharma et al., 1997; Chua et al., 2012; Nordqvist et al., 2014). Ramalho et al., (2014) assert that family firms are more heterogeneous across size categories (micro, small, and medium) in their use of

debt. The heterogeneous nature of family firms extends across borders, yet to-date most studies concentrate on a single country (Michiels & Molly, 2017). This study will analyse the heterogeneity in the use of finance by privately held family businesses on a multi-country basis and seek to ascertain if financing differences exist across the individual countries. Furthermore, this study also tests for evidence of the theoretical constituents of credit constraint, including application likelihood, borrower discouragement and different forms of credit rationing in family-owned SMEs, which to-date has only been researched for the broader community of SMEs in Europe (Holton et al., 2014; Ferrando & Mulier, 2015a, Mc Namara et al., 2020). The study examines 12 European countries regarded as a representative sample of the Euro area (ECB, 2017).

European economies are predominantly bank-based financial systems (Langfield & Pagano, 2016). The availability of bank credit in a country can be affected by many factors, including its legal setting, regulation, judicial and the prevailing economic climate. The pronounced reliance by privately owned family firms on bank debt heightens the significance of a country's institutional setting in the capital structure of this cohort (González et al., 2013; Keasey et al., 2015). Michiels & Molly (2017) highlight that 81% of studies relating to family firm financing focus on a single country (Mahérault, 2004; Bjuggren et al., 2012; Ampenberger et al., 2013; Burgstaller & Wagner, 2015). Little is known of the cross-country heterogeneity effect of financing of family-owned firms (Michiels & Molly, 2017). Thus, the study will examine cross-country financing differences guided by the institutional environment and country setting of family-owned SMEs, which is widely analysed for the broader SME population. The analysis will also seek to identify if more vulnerable privately owned family firms and SMEs, in terms of financial distress and trading distress<sup>3</sup>, differ to other firms in their use of the sources of

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<sup>3</sup> Explained in detail in Chapter 3, Section 3.10.2.

finance and to ascertain if agency theory is more pronounced in family firms in access to credit. This study will exploit this gap by exploring variation between country impacts and firm level determinants on family firm financing decisions and by testing for evidence of credit constraint across different country settings.

The European Capital Market Union plan (CMU) in time is likely to open new financing avenues, notably market-based sources, which are currently not available to SMEs, including family-owned firms, due primarily to cost and regulations (European Commission, 2019). This major economic policy initiative launched in 2015 aimed at delivering a European single capital market by firstly addressing a range of problems. These problems include the fragmented nature of capital markets in different countries, the limited flow of capital across European borders and the limited range of the sources of finance available to firms, particularly to the SME population. The project is considered the final step to complete the Economic and Monetary Union, complimenting the earlier Banking Union. Thus, the CMU project is concerned with the efficiency, stability, and cohesion of financing markets for firms in all European countries aided by the centralisation of power in areas such as banking supervision and governance (European Commission, 2019). The plan, while still in its infancy, has the potential to change the financing landscape of SMEs, particularly for high growth innovative and export-oriented firms. The reliance of family firms on bank debt is well established in the literature (Burgstaller & Wagner, 2015; Moritz et al., 2016). Yet, Demary et al. (2016) contend that small firms may become even more reliant on banks in future as they become providers of capital market services. The potential for using capital market sources is underdeveloped in the majority of countries, primarily due to limited investor interest and a lack of appetite from small firms (OECD, 2018).

Given the research objective and research gap discussed above, this study is timely and will provide knowledge of the financing patterns and evidence of any constraints experienced both by family-owned SMEs and other SME ownerships.

In summary, this study proposes the following research questions:

RQ1 - What sources of finance are employed by European family-owned SMEs in contrast to non-family SMEs?

RQ2 – What is the likelihood of European family-owned SMEs experiencing credit constraint in contrast to non-family SMEs?

### **1.3 Methodology**

The importance of philosophy is emphasised in three intertwining positions, the ontological persuasion, the epistemological stance and the methodological question, which are explained in chapter three. Following thorough consideration, a positivist approach is adopted where reality is perceived to exist out there and the researcher is to be independent of the research subject. Specifically, the positivist approach is shaped by a cross-sectional design which dictates a quantitative orientation for this study.

This study employs the European Central Bank (ECB) and European Commission (EC) Survey on the Access to Finance of Enterprises (SAFE) to address RQ1 and RQ2. The survey which is primarily concerned with the financing conditions for firms in Europe (ECB, 2017) was first conducted in 2009, and is carried out on a bi-annual basis on behalf of the ECB and yearly since 2014 as a joint ECB/EC survey. The SAFE survey spans some 38 European countries, but 12 countries are selected in the final sample as these countries are surveyed in all rounds (bi-annual) and are considered a representative sample of the euro area (ECB, 2017). These 12 countries are Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain and Slovakia. The

survey has furnished researchers with vast data which was established due to a major gap in the availability of high-quality Europe wide data. The survey is primarily concerned with the SME sector, of which family firms are the largest cohort. Finally, SME reliance on bank finance makes them susceptible to monetary policy changes (European Commission, 2014) and economic volatility. Several empirical studies have investigated the financing of a sample of the SME population using SAFE data. These include Artola & Genre, (2011), Drakos (2013), Casey & O'Toole (2014), Holton et al. (2014), Ferrando & Mulier (2015a), Lawless et al. (2015), Ferrando et al. (2017), Andrieu et al. (2018), Masiak et al. (2019) and Mc Namara et al. (2020). Yet, no study has examined the financing concerns of family-owned SMEs using SAFE between 2014 and 2017, considered a relatively stable economic period thus providing a normal trading environment to test the research questions.

The ontological and epistemological position of the research in this study leads to a quantitative methodology to address both research questions. To assess the likelihood of outcomes given the nature of the data; a maximum-likelihood probability model (probit) is primarily used, as well as ordinary least squares (OLS) regression in the robustness testing. The probit model is considered the most appropriate to address the nature of the research questions and the categorical variables. Whilst logit regression is also regularly used in SME financing research, the probit model is preferred given the objectives of the research, the chosen questions and the nature of the data employed.

## **1.4 Contribution**

The contextual background, research objective and gap, research questions/design lead to the contribution of this work which is fourfold:

First, this study is the first to empirically examine the sources of finance employed by European family-owned SMEs in contrast to non-family SMEs, specifically solely owned firms, and professionally managed SMEs. Family firms dominate the European business landscape accounting for 70/80 per cent of enterprises and circa 40/50 per cent of employment. Family owned SMEs are the primary cohort within the overall SME population in Europe. Moreover, family owned SMEs are older than other small firms (KMU, 2008). In addition, it examines the likelihood of credit constraint in access to finance of European family firms compared to sole owners, professionally managed SMEs and other SMEs (solely owned SMEs and professionally owned SMEs combined). This study seeks to establish the applicability of the capital structure theories, notably agency theory, the pecking order hypothesis, trade-off theory and financial lifecycle in the context of family-owned SMEs. This work builds directly on the studies of Crespí and Martín-Oliver (2015) and Moritz et al. (2016) Notably, Crespí and Martín-Oliver (2015) single country analysis sought to identify if private family firms had easier access to external finance (banks) in Spain in contrast to other firms. Moritz et al. (2016) European study adopts a unified perspective of SME financing patterns acknowledging the complementary and substitutive effects between the financing sources, using the SAFE survey.

Second, the research seeks to explore the heterogeneous nature of family-owned SMEs in different countries, and differences in their financing due to the country setting. Understanding family firm finance preferences informs capital structure decision-making and the cross-country nature of this study will shed light on differences in the profile of family SMEs between countries. Moreover, differences in family-owned SMEs finance usage and access to credit are examined across European countries. This work builds on the study by Ferrando et al. (2017) who also employ SAFE data to examine the impact of

the sovereign debt crisis on European SMEs access to finance. Their study compares the greater impact of the crisis on five countries (Portugal, Ireland, Italy, Spain and Greece) compared to other European countries.

Third, this research is timely in the period intersecting the European sovereign debt crisis and the formation of the Capital Markets Union (CMU) plan (European Commission, 2019). This economic policy initiative aims to deliver a European single capital market creating the opportunity for firms, particularly SMEs, to access a more diverse funding sources. CMU, launched in 2015, will take some years to fully deliver due to a range of issues to be addressed including fragmented markets in different countries, cross-border flows, legal, regulatory, and supervision concerns. The delivery of this major plan is further complicated by Brexit, the integration of the onerous requirements of Basel III and more recently the Coronavirus pandemic. Methodologically, this work builds on recent research which examined sources of finance and credit rationing in a representative sample of the European SME population using the SAFE survey dataset (Artola & Genre, 2011; Ferrando & Griesshaber, 2011; Drakos, 2013; Casey & O'Toole, 2014; Holton et al., 2014; Öztürk & Mrkaic, 2014; Ferrando & Mulier, 2015a; Moritz et al. 2016; Ferrando et al., 2017; Masiak et al., 2017; Andrieu et al. 2018; Masiak et al. 2019; McNamara et al. 2020).

Fourth, this study contributes to the practitioner community and policy makers given the importance of family firms to the European economy and the current dearth of multi country analysis in a period after the global economic crisis. This research provides the opportunity to analyse finance availability across countries and for those firms deemed to suffer either financial or trading distress. The findings will inform firms, policy makers, banks and other finance providers. Practically, the EU consider one of the key challenges for family firms is financing which they demonstrate through numerous policy decisions

(European Commission, 2015). The selection of 12 countries in the sample is important for a number of reasons (a) the European Commission consider these 12 countries to be a representative sample (b) country differences can be analysed both practically and perceptually (c) the countries classified, mainly in political terms, as the ‘PIIGS’ (Portugal, Ireland, Italy, Greece and Spain) are included in the 12-country sample and give a unique research gap to critically test this group versus the other 7 non-distressed-economies - Austria, Belgium, Finland, France, Germany, Netherlands, Slovakia (European Commission, 2009). Michiels & Molly (2017) highlight that 81% of family firm financing studies are on a single country basis.

## **1.5 Structure of the Document**

Chapter 2 provides a review of the literature pertaining to SMEs and gives primary focus to family firms. The literature review evaluates a range of topics including the family firm definition dilemma, theories of capital structure, and determinants of capital structure both at firm level and country/macro level and in access/credit rationing. This is followed by an analysis of prior studies which, guided by the research context, research gap identified and review of relevant theories, enables the formation of hypotheses for research question one (RQ1) and research question two (RQ2).

Chapter 3 presents the methodological approach of the study. Initially, the research philosophy is presented following by an outline of the research objective and research questions. It also provides details of the data including the sampling frame, the selection criteria and sample selection. Then issues of reliability, replication and validity are discussed followed by a detailed description of the method of analysis underpinning each research question. Finally, this Chapter concludes with a presentation of the sample descriptives and more specifically, the family-owned SME cohort.

Chapter 4 illustrates the empirical results for research question one, followed by details of the key robustness tests.

Chapter 5 displays the empirical findings for research question two, also supported by the results of the related robustness checks.

Chapter 6 presents a discussion of the empirical results, comparing the findings to the expected outcomes from the extant literature and the hypotheses formulated to address the research gap. This Chapter concludes with a summary discussion linking the highlights of the entire empirical results.

Finally, Chapter 7 draws the study to a conclusion. Firstly, the research objectives and questions are illustrated together with the key findings. Then the contribution of the research is outlined followed by policy implications. The limitations of the study are then provided as are relevant recommendations for future research.

## **1.6 Conclusion**

This Chapter has presented the background to this study and highlighted the importance of SME family-owned firms to European economies. Specifically, emphasis centred on the importance of European family-owned SMEs and the dearth of multi country research into the types of finance available to this cohort as compared with other types of SME owned firms. The research gap was presented which led to the formation of the research questions. The methodology and contribution of this study was outlined together with the structure for the remaining sections of this work. The next Chapter presents the Literature Review.

## **Chapter Two: Literature Review**

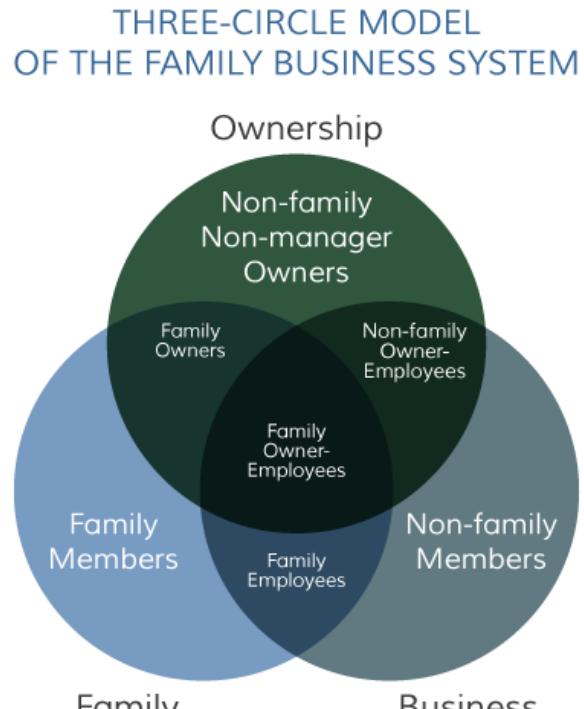
### **2.1 Introduction**

The purpose of this Chapter is to present the theoretical framework underpinning the study and the empirical literature also. It commences first with a discussion of what exactly constitutes a family firm, their hallmarks, and their coverage in the literature, which is examined in both the academic and practitioner fields. The second section presents a critical review of the key theories of capital structure which impact SMEs and privately held family firms, including an overview of the credit rationing literature. In the third section empirical evidence of the role of firm ownership and several firm level and macroeconomic controls likely to impact financing decisions are considered. This is followed by a review of the literature regarding the sources of finance available to European SMEs and family-owned firms enabling the formation of the hypotheses for research question one. The fourth section presents a discussion of the credit rationing literature. The final section concentrates on empirical studies of the likelihood of SMEs and family-owned firms experiencing credit rationing in contrast to trade credit and other financing sources, which facilitates the creation of hypotheses for research question two.

### **2.2 Family Firms**

Family firms have been studied since the 1950s (Christensen, 1953; Donnelley, 1964; Miller & Rice, 1967; Handler, 1989). The US Family Firm Institute was founded in 1986 and the *Family Business Review* has been in operation since 1988. Family firms involve the interaction of two systems; a family, and a business - often illustrated in a typical two-circle venn-diagram popularised by Tagiuri & Davis (1982). Later, this was expanded to the ‘three-circle model’ (figure 1 overleaf) incorporating firm ownership (Davis & Tagiuri, 1989). The expanded model depicts a greater amount of intra-relationships and

family firm categories, conceptualising the broad concept of what constitutes a family firm. However, on an operational level research remains divided and defining a family firm remains inexact.



TAGIURI AND DAVIS, 1982

*Figure 1 – Tagiuri & Davis 3 Circle Model*

### **2.2.1 Hallmarks of Family Firms**

Family firms are shaped by the interaction of the family unit, firm operations, and firm ownership as suggested by the three-circle model (Tagiuri & Davis, 1982; Davis & Tagiuri, 1989). The interdependence of these overlapping systems has knock-on effects on one another. As a result of this overlap, the seven interest groups depicted in figure 1 above have their own perspectives, goals and dynamics. The success of a family business depends on the functioning and complementary support of each group. These effects can manifest in what can be considered as the hallmarks of family firms.

The intent for trans-generational wealth transfer, or succession is cited as a key motivator for family firms (Churchill & Hatten, 1987). This is a core principle differentiating the family firm from a sole-owner, partnership or other business entities. The consequences of succession on a family firm are numerous. Family firms are generally viewed as being older, having a longer-term outlook, and are motivated by non-financial (or at least non-current) rewards. As family firms do not ‘die’ with their founder they are expected to be older. This in turn drives long-term decision-making in line with trans-generational wealth transfers and potentially foregoing of a cent today in lieu of a euro tomorrow. Non-financial benefits are valued by family firms including local reputation, involvement in the community and having the family name attached to the business. The resource-based view of family firms confirms that their influence on a bundle of behavioural and social resources may be conducive to long-term success (Habbershon & Williams, 1999). Later, the socioemotional wealth (SEW) paradigm emphasises the importance of all these non-economic goals for family firms (Gómez-Mejía et al., 2007). The preservation of the family's socioemotional wealth, which is bound to the business, is a key objective. Achievement of this goal necessitates ongoing family control of the firm through decisions, including financial, which preserve their independence (Gómez-Mejía et al., 2007).

The long-term orientation and successional goals outlined above inform family businesses' appetite towards risk. Family firm risk aversion has broad support and is evidenced in the empirical literature (Hiebl, 2012; Memili et al., 2015).

Privacy and the family unit are discussed in varied literature including the social sciences (Feshbach & Feshbach, 1978), and law (Fineman, 1998; Houlgate, 1998; Kim, 2005). Family unit privacy is extended into the family business sphere (Chua et al., 2003). Privacy is not necessarily a benefit in access to finance where information opacity and

asymmetry are key roadblocks. Furthermore, an over-reliance on maintaining firm-familiness may lead to the ‘dark side of altruism’ and nepotistic management entrenchment (Schulze et al., 2001)

Family firms’ successional aim leads to a desire to protect the firm from a dilution of control and/or potential bankruptcy. In terms of financing, family firms are characterised as seeking the safest sources and those that do not involve a loss of control (Romano et al., 2001; González et al., 2013). Hence, they tend to use internal equity, informal loans from friends and family members, and where external finance is required bank loans and other informal sources are preferred. Ntoung et al., (2020) find that Spanish small and medium family firms are less likely to use debt financing and other forms of external finance than their non-family counterparts.

In sum, family firms have unique hallmarks derived from the interaction of the family unit and the firm. Ultimately, the family welfare both now and in the future is tied to these hallmarks through their goals, values and decisions to ensure the survival and long-term success of the business. Family firms are likely to cultivate a path of low risk, often manifested in low or moderate growth. This low risk attitude will lead to more family firms surviving into successive generation generations (KMU, 2008). While family-owned SMEs are different to other SMEs in many ways (Memili et al., 2015) the distinctions may be clouded by the lack of a widely accepted family firm definition.

### **2.2.2 Family Firm Definition Dilemma**

The absence of a universally accepted definition of a family firm is termed the family firm definition dilemma. Chua et al. (1999) assert that without a definition there is a risk to the credibility and reputation of family firm research. Despite the substantial increase in research about family firms (Sharma, 2004) no widespread definition of what exactly constitutes a family firm exists to date (Dawson & Mussolini, 2014). The difficulty in

agreeing a family firm definition illustrates the heterogeneity that prevails within this cohort (Chua et al., 1999; Astrachan et al., 2002). Indeed, research results have been impacted by the family firm definition dilemma (Klein et al., 2005), adding to the complexity of achieving consistent and comparable research findings (Miller et al., 2007; Mazzi, 2011; Harms, 2014, Steiger et al., 2015).

Family firm research and the definition debate are concerned with many dimensions such as succession, governance, competitive advantage, performance, and in more recent times financial decision-making. The definitional topic has grown into a distinct research strand in the family firm arena guided by different approaches both measurable (prescriptive, or components-of-involvement based) and non-measurable (essence of family business approach). Prescriptive definitions or the components-of-involvement approach is the original and most widely used method of segregating family and non-family business. Allen & Panian (1982) defined a family firm as one where a family holds at least 5 percent of the firms' voting rights and are represented on the board. Faccio & Lang (2002) consider a family holding 20 percent of the firm's decision-making rights as an applicable measure of a family firm. Others believe at least 50 percent of the decision-making rights are more appropriate (Barontini & Caprio, 2006). The lack of a singular definition within the field of family business research led to the family involvement approach (Astrachan et al., 2002) and development of the F-PEC scale (Klein et al., 2005). Whilst the F-PEC scale provides a measure of family influence through power, experience and culture (Klein et al., 2005) it fails to capture the extent of involvement which may lead to distortion in the essence of family business (Harms, 2014). Furthermore, others dwell on the role of family involvement in governance or family actively involved in day-to-day management of the firm (Anderson & Reeb, 2003a; Miller et al., 2007).

Miller et al. (2007) investigated the various definitions used in studies of ‘family firm performance’ and highlight that firms controlled by a sole owner with no visible family component are often classed as family firms. The need to separate sole ownership from the family firm led to a succinct yet broad definition by Miller et al., (2007, pp. 836) who define a family business as a one ‘in which multiple members of the same family are involved as major owners or managers, either contemporaneously or over time’. Mazzi (2011) investigated the link between family ownership/control and firm performance and identified 23 different family business definitions. Hence it is not surprising that such studies provide mixed results. Furthermore, Harms (2014) examined 267 journal articles with different definitions of family firms yet no exclusive definition emerged or was recommended.

The European Commission (EC) in 2007 whilst recognising the importance of family firms commissioned a study to establish a common family firm definition (EC, 2009). This consultation spanned 33 countries and review of pertinent academic literature noted some 90 different definitions of family firms (KMU, 2008). Subsequently, this led to the publication of the family firm definition of the EC (2009):

*‘A firm, of any size, is a family business, if:*

- (1) The majority of decision-making rights is in the possession of the natural person(s) who established the firm, or in the possession of the natural person(s) who has/have acquired the share capital of the firm, or in the possession of their spouses, parents, child or children’s direct heirs.*
- (2) The majority of decision-making rights are indirect or direct.*
- (3) At least one representative of the family or kin is formally involved in the governance of the firm.*
- (4) Listed companies meet the definition of family enterprise if the person who established or acquired the firm (share capital) or their families or*

*descendants possess 25 per cent of the decision-making rights mandated by their share capital.'*

This definition recognises the importance and previous absence of consensus across member states where family firms were merely immersed in the broader SME group. Furthermore, the lack of a Europe wide definition only served to highlight the paucity of strategic and economic policy support for family firms particularly in finance. The EC definition is an appropriate guide to this study of privately-owned family firms for several reasons. Firstly, the definition is based on an extensive meta-analysis of family business from a European context (KMU, 2008). Secondly, the data employed to address the research questions is taken from a pan-European survey carried out jointly by the ECB/EU. Finally, whilst limited evidence exists of the academic adoption of this definition it has been ratified by the European Union and family business networks. However, respondents, in the secondary data selected for this study, choose their ownership type<sup>4</sup>.

In summary, the definition of the family debate persists and will likely continue to evolve without consensus. This is particularly true where specific components of ownership/involvement approach are taken to defining the topic. However, as evidenced by Miller et al., (2007) a prescriptive definition of family firm ownership is not a simple fix to address issues of comparability in this research field and consensus remains unlikely. The theoretical frame underpinning is the subject of the next section.

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<sup>4</sup> Respondents are asked in the SAFE survey to select the type of firm they own, for example, family firms, solely owned firms, publicly quoted companies, venture capitalists or other business associates (SAFE, 2014 & 2017).

### **2.3 Theoretical Framework**

Firms require adequate finance to help them be sustainable and grow. Over half a century ago the Modigliani & Miller (1958) seminal paper on corporate capital structure argued the irrelevance of finance sources suggesting that firm value and wealth creation are tied only to the investment decision on which its use is intended. The irrelevance theory rests on the assumption of a perfect market without taxation which was later addressed by Modigliani and Miller in 1963. In the intervening period endeavours to tie capital structure theory to the real-world has led to several theories emerging. There has been a multi-stage evolution of theories and models to explain the capital structure of firms. Traditional finance theories such as agency theory (1970's), trade-off theory (1970/80's), life-cycle theory (1950's), and pecking order theory (1980's) offer potential insights into both firm financial preferences and the availability of finance for them. As the evolution continues the role of institutional settings and country effects have emerged as important influences on the capital of firms (Beck & Demirgüç-Kunt, 2006; Berger & Udell, 2006; Van Auken et al., 2009; Acedo-Ramírez & Ruiz-Cabestre, 2014; Mc Namara et al., 2017). Schmid (2013) attests that the institutional environment, mainly due to the level of creditor monitoring, should not be neglected when conducting empirical studies of family firm finance.

In the 1930s the topic of credit rationing/constraint emerged (Keynes, 1930). Defined as the unsatisfied firms who want to borrow at the prevailing interest rate but cannot do so (Keynes, 1930). The theoretical background and empirical interest in this phenomena have grown significantly in the intervening period. Since the economic and sovereign debt crisis, spanning 2007-2011, much attention has been placed on credit rationing particularly in Europe, where the most severe impacts of these downturns were experienced. Specifically, much of this attention has been centred on SMEs who are

known to suffer more pronounced credit rationing in contrast to larger firms. The best known of these traditional finance theories, agency theory is the subject of the next section, followed by trade-off theory, then the pecking order theory, and financial life-cycle theory in the last section.

### 2.3.1 Agency Theory

Agency theory is concerned with resolving conflict that arises between principals (owners) and agents (managers) in business as individual interests are fulfilled (Eisenhardt, 1989). Many of the decisions that affect the principal financially are made by the agent, differences of opinion, priorities and interests, can arise. Agency theory assumes that the interests of the principal and agent are not always in harmony, known as the principal-agent problem. Agency conflicts are pervasive in firms and stem from the separation between ownership and control. Thus, owner management is an effective substitute for costly formal controls on decision makers (Jensen & Meckling, 1976).

These conflicts can include but are not limited to owner-manager, bondholder-owner and manager-employee. Jensen and Meckling (1976) seminal paper posit a potential shield whereby if management and ownership overlap agency costs do not arise or are minimal. From a firm financing perspective, the theory is concerned with resolving the agency problems that arise from asymmetric information between the firm and its capital suppliers (Harris & Raviv, 1991). Agency costs can manifest financially and can be viewed as a tacit risk by lenders. The separation of ownership and management is a primary source of agency costs.

Credit constraint may arise from agency concerns and is manifested through agency costs. These costs arise due to asymmetric information, likely leading to moral hazard and exacerbated by monitoring to resolve conflicts of self-interest. Jensen and Meckling (1976, pp. 308) illustrate the costs of agency relationships as the sum of: '(1) The

monitoring expenditures by the principal, (2) The bonding expenditures by the agent, (3) The residual loss.'

Agency cost theory has been adopted in several strands of literature but is key in small firm finance studies (Berger & Udell, 1998; Gregory et al., 2005). Jensen and Meckling (1976) assert that alignment of the needs of a firm and a lender should result in low agency costs. Based on the premise that ownership and management in small firms are often one and the same then a firm's agency costs should be minimised. Yet, traditional agency costs may be more severe in small private firms. This is because SMEs may suffer from a more acute information opacity issue (Berger & Udell, 2006). In addition, management may be able to exert greater influence over a relatively smaller company than one which is widely held (Bendickson et al., 2016).

Family firms have been shown to have unique agency relationships (Songini & Gnan, 2015; Blanco-Mazagatos et al., 2016) which contributes to the heterogeneity and informationally opaque nature of these firms. Firm financing studies attest that family firms have benefits and demerits in dealing with agency costs (Fama & Jensen, 1983; Shleifer & Vishny, 1997; Ang et al., 2000; Schulze et al., 2003; Andres, 2011). Family firms can counter some agency costs which can help alleviate agency conflicts due to the unification of ownership and management (Berger & Udell, 1998; Andres, 2011). In addition, the long-term orientation of private family firms may reduce monitoring costs (Le Breton-Miller & Miller, 2006). Family firms have the authority to closely monitor managers (Cassia et al., 2011) while family owners' successional orientation is also important in alleviating agency costs (Lumpkin & Brigham., 2011). The principal-principal problem is concerned with conflicts between majority and minority shareholders which are typically evident in firms with concentrated ownership and control, inadequate governance and protection. The principal-principal agency issue has the potential to be

serious in family firms, more especially large family firms, who are typified by concentrated ownership (Young et al., 2008).

In contrast because the family unit is intertwined in a family firm, altruism towards family members is evident and this makes the management of agency costs more difficult. Altruism is the selfless concern for the wellbeing of others. Thus, a manager/owner of a family firm must choose between doing what is best for him, best for the family, and best for the firm. Altruism can be aligned with commitment and loyalty to the prosperity of family firms (Schulze et al. 2003). Yet, while altruism can foster long-term loyalty, family firms may be susceptible to the ‘dark side of altruism’ commonly called the problem of free-riders due in part to entrenchment of non-performing family members (Schulze et al., 2003; Crespí & Martín-Oliver, 2015). Family firms may suffer particularly in the lender-firm relationship due to information asymmetries and agency conflicts (García-Teruel & Martínez-Solano, 2007). The agency problem between family firms and creditors (Hillier et al., 2018) has significance, albeit evidence is mixed, which creditors manage through higher costs, less credit or stricter terms. Family firms tend to minimise risk and thus creditors trust family owners and do not impose debt contract penalties (Hillier et al., 2018). Agency costs have the potential to be intensified through a mixture of parental altruism, nepotism, and a lack of self-control (De Massis et al., 2015). In addition, in times of crisis Migliori et al. (2018) attest for Italian family-owned SMEs that agency costs are one of the most important factors which influence their financing decisions.

These issues may lead family owners/managers to provide family members with security of employment and privileges, irrespective of their ability and contribution (Schulze et al., 2003). Furthermore, they contend that such incentives should not be necessary if

commitment and loyalty outweigh other agency costs apparent in family firms (Schulze et al., 2003).

In summary, agency theory is pervasive in all firms. This theory's relevance for SMEs and small family-owned firms is particularly pronounced. On the one hand, family loyalty, commitment and long-term perspective, aided by the alignment of management and ownership may reduce agency costs from a lender's perspective. Yet, given their opaque nature and dark side of altruism may see family firms more prone to financing difficulties. However, the literature has not reached a consensus on whether family-owned SMEs are more vulnerable to agency issues in accessing finance compared with other ownership types. The trade-off theory is the subject of the next subsection.

### **2.3.2 Trade-off Theory**

One of the key pillars of Modigliani and Miller (1958) irrelevance theory is the existence of a perfect market and absence of taxation in firm valuations. Trade-off theory directly addresses some of the real-world implications of debt, including both the tax advantages and bankruptcy penalties (Kraus & Litzenberger, 1973; Myers, 1989). Trade-off theory is primarily concerned with balancing the tax shield benefit and the down-side risks of failure and bankruptcy as a consequence of debt levels in firms' capital structure. However, since its inception of this theory there has been a question mark over the ability to demonstrate that tax status has a direct and sizeable effect on financial decision making (Myers, 1984).

The theory assumes that higher profitability will attract higher debt levels to benefit from tax shields. Thus, more profitable firms are likely to use more debt than those with lower profits who in turn are more likely to be credit rationed, yet may need debt to achieve growth and improve profitability. Some of the concerns regarding trade-off theory and its applicability to SMEs stem from the premise that these firms are less profitable resulting

in less benefit from the tax-shields of debt (Pettit & Singer, 1985; Mac an Bhaird & Lucey, 2010). López-Gracia & Sogorb-Mira, (2008) determine that SMEs do not behave in the same manner as large firms in a Spanish study of traditional pecking order and trade-off theories of financing decisions. Serrasqueiro & Caetano (2015) attest support for trade-off theory by Portuguese SMEs finding that such firms adjust toward target debt levels. Furthermore, they rule out the exclusivity of either trade-off theory or pecking order theory by suggesting that they can simultaneously explain SME capital structure decisions. In a follow up study, Serrasqueiro et al., (2016) argue that both trade-off theory and the pecking order hypothesis can be applied to financial decision making of SME family firms in Portugal.

López-Gracia and Sánchez-Andújar (2007) find no clear evidence to support the influence of the tax shields of debt on the financing decisions of small family firms in Spain. Bauweraerts & Colot (2012) provide some evidence that family firms are more likely to target a particular debt level than their non-family counterparts in Belgium - family firms are perceived to be risk averse (González et al., 2013) and more concerned with the potential bankruptcy implications of external debt rather than the tax shields offered.

Kempers et al., (2017) illustrates two opposing scholarly positions of family firms' risk appetite. Firstly, motivated by family wealth security family firms are more risk averse, whilst secondly, family firms are less risk averse due to family firm-centric goals (Kempers et al., 2017). Moreover, other factors such as the control motivation of family firms may offer a stronger argument for family firms embracing debt rather than equity in their capital mix (Burgstaller & Wagner, 2015; Keasey et al., 2015).

In summary, trade-off theory adds to the understanding of capital structure by addressing criticism of the unrealistic lack of debt consideration of the irrelevancy theory of Modigliani & Miller, (1958). The trade-off between tax shields and bankrutcy risk has strong support in the literature for large capital-intensive firms. However, there is mixed evidence of its applicability in the case of SMEs, primarily due to their lower profitability levels. There is little evidence to suggest that family-owned SMEs consider the tax-shields of debt when adjusting to a target leverage position. The third theory, pecking order, is the subject of the next subsection.

### 2.3.3 Pecking Order Theory

The capital structure puzzle of Myers (1984) involves two pillars – the first called trade-off theory as described in the previous section and the second known as pecking order theory or the pecking order hypothesis (POH). The POH posits that firms exhaust all internal sources of finance first before resorting to external finance, which tends to be debt first and equity then only as a last resort. Firms display this hierachichal preference based upon information asymmetry, financial instrument safety (Myers, 1984; Myers & Majluf, 1984), control motives (Sogorb-Mira, 2005) and minimal information costs (López-Gracia & Sogorb-Mira, 2008).

There is considerable support for this theory in the context of SME capital structure (Chittenden et al., 1996; Michaelas et al., 1999). Hall et al., (2000) attests to this hierachial financing preference in the case of UK SMEs. Some evidence of a truncation of the theory is found by Howorth, (2001) due to small firms' unwillingness to use some financing sources for fear of losing control of the business. Sogorb-Mira (2005) found that pecking order theory appears to explain Spanish SME capital structure decisions, which they assert may be due to a reluctance to use external finance for fear of losing control. Later, López-Gracia & Sogorb-Mira (2008) in another Spanish study show how

the trade off theory, discussed earlier, and the pecking order theory are relevant to explain SME financing preferences. SMEs in Ireland also source their finance in accord with the pecking order hypothesis and have a tendency to use financing which safeguards control of their business (Mac an Bhaird, 2010b). Firm age and firm size can help to alleviate information asymmetry by using collateral to obtain debt finance (Mac an Bhaird, 2010a). Degryse et al (2012) affirm that Dutch SMEs also follow a pattern of hierachial financing preference, by firstly relying on internal finance and prefer to use long-term debt more than short-term debt to support growth opportunities. Moreover, SMEs use profits to reduce their debt, particularly short-term debt which they assert is more expensive, as firms prefer internal funds over external debt (Degryse et al., 2012). More recently, Martinez Cillero et al., (2019) found support for the pecking order theory in the financing of European SMEs due to the availability of internal funds rather than any benefit derived from debt finance.

Family firms also show a hierachial order to financing, relying first on internal sources and only then moving to external financing, as posited by pecking order theory. There is strong support for this order in the case of French family-owned SMEs (Maherault, 2000), in Australia (Romano et al., 2001), in Spain (López-Gracia & Sánchez-Andújar, 2007; Acedo-Ramírez et al., 2017), in Finland (Lappalainen & Niskanen, 2013), in Portugal (Vieira, 2013; Serrasqueiro et al., 2016), in Germany (Burgstaller & Wagner, 2015) and in Sweden (Bornhäll et al., 2016).

The financing preferences of small family firms differ to their non-family cohorts. In particular, French family firms will forego growth if internal resources are not available due to their control orientation (Manerault, 2000). López-Gracia & Sánchez-Andújar (2007) assert that the differences between the financing preferences of family firms is due to different growth opportunities, fear of financial distress and availability of internal

funds in contrast to non-family SMEs. Bornhäll et al., (2016) found that Swedish family firms are significantly more averse to external equity due to their control motives compared with non-family firms. More recently, Acedo-Ramírez et al., (2017) affirm the applicability of the pecking order hypothesis to small Spanish family firms is due to their stronger preference for internal funds which have no information costs.

In sum, strong support persists for the pecking order theory irrespective of the country setting for SMEs and more pronounced for family-owned SMEs. The final theory, life-cycle theory, is the subject of the next subsection.

#### **2.3.4 Financial Life Cycle Theory**

The life cycle theory (Penrose, 1952; Rostow, 1959) charts the evolution of a firm through various growth stages measured by firm age. This theory equally has a life cycle of its own, with formative stages in financial management texts (Weston & Brigham, 1970). The taxonomy of the life cycle stages can vary. Lester et al. (2008) define a five-stage model; existence, survival, success, renewal, and decline. Mac an Bhaird & Lucey (2011) use six age groups in their empirical study of the financing of Irish SMEs. Lipi (2013) posits the number can range from three to ten stages.

The financial life cycle of the firm attempts to chart financing sources across life cycle stage. The seminal work of Berger and Udell (1998) depicts the financial growth cycle of small firms as a continuum attesting that as firms move along the cycle the demand for more finance options increase in line with information opacity and collateral. Furthermore, they illustrate the transition of a firm's financing source be it external debt or external equity (Berger & Udell, 1998). This contrasts with start-up firms who are restricted to fewer sources such as owners' equity or funding from family/friends (Hutchinson, 1995; Berger & Udell 1998; Ferrando & Griesshaber, 2011). Chittenden et al., (1996) in the case of UK firms (small and large) attest that as firms progress in their life cycle information asymmetry reduces and access to debt increases, Mac an Bhaird & Lucey (2011) show support for this theory in the context of Irish SMEs, particularly the importance of owners' equity throughout their life cycle and more so for small firms. La Rocca et al., (2011) in an Italian study, a bank-based economy, found that young SME firms rely heavily on external debt while mature firms prefer internal capital. Indeed, they assert that debt is an important source of finance for young Italian SMEs irrespective of the costs associated with such credit. Their study also finds that the financial lifecycle is consistent in different institutional situations and across industries. (La Rocca et al.,

2011). Later, Menike (2015) in the case of Sri Lankan SMEs, while lending support to the lifecycle theory, found variances in financing patterns across different industries. Walid (2019) in the case of Tunisian SMEs found support for the lifecycle theory explaining the financing patterns of this cohort. The study by Walid (2019) concurs with La Rocca et al., (2011) in that young SMEs use more bank debt and as they mature the financing changes to internal sources, such as retained earnings.

Succession in family firms may be a unique life cycle consideration which affects this cohort's financing choices (Blanco-Mazagatos et al., 2007; Molly et al., 2010). Moreover, Blanco-Mazagatos et al., (2007) assert that larger family firms more so than smaller firms will use financing to maximise firm value. Young European family firms unwillingness to dilute control sees them source their finance through bank debt or informal channels (Keasey et al., 2015). Acedo-Ramírez et al., (2017) found support for the lifecycle theory in Spanish small, medium and large family firms. They also show that family-owned firms have higher debt levels in contrast to non-family firms due to fears of loss of control by issuing external equity (Acedo-Ramírez et al., 2017).

In summary, support for the financial life cycle theory is found in the financing patterns of SMEs and family-owned firms. The unwillingness of family-owned SMEs to dilute control sees them follow a path of careful financing decisions through internal sources, external debt and informal channels. The theory of constraint is the subject of the next subsection.

### **2.3.5 Credit Constraint**

In the 1930s, Keynes alluded to unsatisfied borrowers who were willing to accept debt at the offered interest rate but were unable to obtain this finance. Financing constraint is said to arise when firms are unable to finance investments which they wish to undertake. Due to market anomalies, firms are forced to rely on limited internal funds as the option to

access external finance may be impossible or too expensive (Hashi & Toci, 2010). The number of unsatisfied firms is caused by the disequilibrium between the amounts of loans a bank is willing to offer in contrast to firms' demand (Keynes, 1930). The later developed availability concept is largely based on the work of Keynes, (1930). Bellier et al., (2012) contend that the availability theory, first developed by Roosa (1951), banks are restricted by the amount of finance available to them, thus credit is always rationed by economic factors and supply availability. The issue of banks using interest rates to increase profits was addressed by Jaffee & Russell (1976) and can result in heightened firm default risk and ultimately bankruptcy.

The equilibrium model stems from the work of Stiglitz & Weiss (1983) who asserted that when banks had difficulty determining firms riskiness due to information asymmetry, they would apply a uniform lending interest rate. As such, credit rationing arises from a bank increasing its rate of interest for a loan which at the same time heightens the risk of default. Thus, the dilemma lies in an increase in interest rate which simultaneously increases a firm's risk of default, yet the interest rate increase leads to greater bank profits. The result is equilibrium credit rationing whereby a firm cannot access debt although willing to pay the interest rate. Information asymmetry is more prevalent in SMEs due to a lack of financial information which heightens the agency costs between banks and SME firms and increases the likelihood of credit rationing (McCarthy et al., 2017).

The terms and conditions of a bank's loan offer is a symptom of information asymmetry resulting in moral hazard and adverse selection (McCarthy et al., 2017). Adverse selection is caused by banks being unable to distinguish higher risk from lower risk borrower firms. This leads to moral hazard, also known as the incentive effect (McCarthy et al., 2017). Banks will as a result set the terms and conditions of any loan offer to force firms to follow certain actions and attract less risky borrowers.

Collateral is the primary means for a bank to mitigate adverse selection and moral hazard. Credit rationing may still apply (Stiglitz & Weiss, 1983). Steijvers & Voordeckers (2009) assert that better quality firms will choose to offer more collateral in exchange for lower interest rates whereas the opposite holds true for more risky firms due to the greater likelihood that their collateral will be realised by the bank in the event of credit default. As such, the bank's knowledge of borrower risk levels is improved by their choice of loan contract. Steijvers & Voordeckers (2009) argue that banks generally need loan collateral as they are unable to properly adjudicate on firm riskiness. Credit rationing applies in the event that the collateral available is not sufficient (be that of the firm or the owner) to satisfy a bank's terms and conditions.

Banks adjust other terms and conditions such as the loan maturity to mitigate their risk (Stiglitz & Weiss, 1983). To alleviate credit rationing and to reduce information asymmetry requires not only collateral but a range of options including relationship lending, other loan covenants and maturity terms (Steijvers & Voordeckers, 2009).

From the supply side, greater protection rights provided by the legal environment of a country gives banks access to the collateral in the event of firm default thus alleviating credit rationing (Moro et al., 2018; Mc Namara et al., 2017). Moreover, credit information sharing also plays an important role in alleviating information asymmetry and credit rationing (Jappelli & Pagano, 2002). Information sharing with lenders is particularly relevant for SMEs who are more reliant on bank finance (Popov & Udell, 2012) and suffer acute information issues with lenders exacerbating agency cost issues. An effective judicial environment is also necessary to alleviate credit rationing by offering a safety net for lenders through a quality bankruptcy process (Mc Namara et al., 2017). Bank regulation and supervision is deemed a decisive determinant of the level of credit rationing which is more pronounced for SMEs (Mac an Bhaird & Lucey, 2010; OECD,

2018; Ferri et al., 2020) due to information asymmetries, adverse selection and moral hazard. The alleviation of these issues through the use of relationship banking may be jeopardised by tighter banking regulation which accentuates the need for additional collateral, usually more difficult for smaller firms (Ferri et al., 2020). Relationship lending is built on trust between firms and bank lenders and deemed to alleviate credit rationing, notably for SMEs (Hernández-Cánovas & Martínez-Solano, 2010). Thus, the elements of the lending infrastructure as defined by Berger & Udell, (2006) are important components of the availability of finance for firms.

The disequilibrium model evaluates credit rationing at the macroeconomic level and views the credit market as in disequilibrium when the interest rate does not equate credit demand with credit supply (Farinha & Felix, 2015). To estimate disequilibrium markets Maddala & Nelson (1974) use three equations: demand and supply equations and a transaction equation indicates the amount of bank credit received by firms. These equations highlight the difference between the demand and the supply of credit. Another measure is the use of proxies such as trade credit (Petersen & Rajan, 1994). Survey data also provides a measure of credit rationing. Survey data has facilitated many empirical studies of credit rationing which employ a range of firm level variables, notably firm age firm size, firm ownership (Artola & Genre, 2011; Ferrando & Griesshaber, 2011; Minetti & Zhu, 2011; Holton et al., 2014; Casey & O'Toole, 2014; Mc Namara et al., 2017; Moro et al., 2018).

Other studies have focused on the credit risk nature of firms to establish if more risky firms experience greater credit rationing (Psillaki & Eleftheriou 2015; Ferrando et al., 2017; Mc Namara et al., 2020).

The typology of credit rationing as defined by Keeton (1979) is made up of Type I and Type II. Type I is when a firm receives some but not all of the amount sought whereas Type II means that a firm is rejected for the entire loan. Others have varied these classifications of credit rating, often relying on the interest rate applied by a bank (Cieply & Dejardin, 2010). The concept of discouraged borrowers in credit rationing literature was formulated by Kon & Storey (2003) who defined these as firms who need finance but do not apply for fear their application will be refused (Kon & Storey, 2003). A range of credit rationing options have been developed in the intervening period to assess the types of actions that impact such rationing, including the likelihood of a firm applying for finance (Freel et al., 2012; Lee et al., 2015), the likelihood of discouragement (Cieply & Dejardin, 2010; Freel et al., 2012), the likelihood of being granted everything sought (Ferrando & Mulier, 2015a), the likelihood of strong rationing (Type I, Keeton, 1979; Mc Namara et al., 2020), the likelihood of weak rationing (Type II, Keeton 1979; Cieply & Dejardin, 2010; Drakos & Giannakopoulos, 2018) and finally the likelihood of self-rationing for cost reasons (Ferrando et al., 2017; Mc Namara et al., 2020).

In summary, the traditional finance theories, most notably agency theory, pecking order hypothesis and financial life cycle have relevance in the SME and small family firm financing arena. More recently, the theoretical considerations and empirical interest in credit rationing is firmly established.

The tenets of agency theory and the pecking order hypothesis impact on the financing decisions of small firms and particularly family-owned SMEs, who are traditional and carefully aim to maintain control and preserve the business for future generations. The financial life cycle theory is evident too in this unwillingness of family-owned SMEs to dilute control by their prudent financing choices of internal sources, external debt, and informal channels.

In the light of the economic and sovereign crisis in the period 2007/2012, and the major uncertainty surrounding Brexit, credit constraint has become a major focus of the financing of SMEs. Whilst to-date limited research has been devoted to family-owned SMEs it is likely that the relevance of credit constraint is even more relevant given their preference for bank debt. More recently, the coronavirus pandemic of 2020/2021 is now considered the most severe economic downturn in the history of the EU. This global health catastrophe has further exacerbated the availability of finance for firms, notably SMEs, who are struggling to re-establish trade across global economies.

The focus of the next section is key empirical studies.

## **2.4 Empirical Literature**

Small and medium enterprises (SMEs) are not ‘scaled-down versions’ of large firms (Cressy & Olofsson, 1997). It is further acknowledged that size, age, and ownership structure of a firm tend to have some common ground. Berger and Udell (1998) chart the continuum of the financial life cycle for SMEs. As firms increase in size and age more financing options become available due to increasing firm information, ultimately leading from debt options to the route of public equity. Moreover, it is accepted that small firms are restricted in accessing finance compared with larger more established firms (Beck and Demirguc-Kunt, 2006).

The SME sector, of which family firms are the largest cohort, reliance on bank finance is well documented in the literature (Croci et al., 2011; González et al., 2013; Keasey et al., 2015). Indeed, this reliance on bank finance makes SMEs and family firms susceptible to economic and monetary policy changes (European Commission, 2014). Moreover, their reliance on debt financing puts them at a disadvantage, in contrast to larger companies, (European Commission, 2015) as a result of higher interest rates on SMEs. Prior studies

assert that the differences within the family firm group may be larger than the differences between SME family firms and SME non-family-owned firms in financing (Sharma et al., 1997; Nordqvist et al., 2014). Sharma et al. (1997) suggest that these within family firm differences include their strategic approach, the specific situation and environment, and the performance levels of each firm. They also contend that the involvement of non-family managers may add further differences. Ramalho et al. (2014) contend that family firms are more heterogeneous across size categories (micro, small, and medium) in their use of long-term debt. The prior impact of the variable of interest and firm level controls on SMEs' financing decisions are discussed below.

#### **2.4.1 Firm Ownership**

The ownership structure of a firm can influence their financial decisions (Romano et al., 2001; Ferrando & Griesshaber 2011; Ramalho et al., 2014). Romano et al. (2001) assert that SME financing decisions are complex and include a mix of social, behavioural and financial elements. As SMEs are more opaque than larger firms, access to finance for SMEs can be more difficult (Beck & Demirgüç-Kunt 2006; Moritz et al., 2016). Moritz et al. (2016) attest that this finance access difficulty is likely to be due to factors such as high information asymmetries, agency risks, lack of collateral, and small transaction volumes. Small and unlisted firms have greater reliance on short-term debt (Chittenden et al., 1996). The desire to retain control and independence explains this as a demand-side truncation of pecking order theory (Howorth, 2001). SMEs prefer debt to equity, if outside finance is required, since equity demands higher information exchange and leads to control dilution (López-Gracia & Sogorb-Mira, 2008; Mac an Bhaird & Lucey 2010; Myers, 1984; Masiak et al., 2017).

Family firm financing is influenced primarily by the control-centred orientation of the firm and their successional motives (Tagiuri & Davis, 1996). Mahérault (2000) assert that

French private family firms adhere to pecking order theory. Many of the internal motives that guide the ability of privately held family firms to access capital have been empirically established. Owner-managers' behavioural imprint on a firm has a strong effect on access to external capital. Family-owned and indeed single-owner firms do not want to use external finance where ultimate control is at risk (Romano et al. 2001; Gallo et al., 2004; Andres, 2011). This unwillingness to dilute control away from the family is well established in the literature (Mahérault, 2004; Romano et al., 2001). Gallo et al. (2004) assert that an owner-managers' personal fear of risk, loss of control, or a lack of ambition for the firm can hinder access to external finance. Furthermore, similar findings of this control motivation were observed in a study of small Canadian family firms by Wu et al. (2007) again showing these firms exhibit a reluctance to use any form of equity financing and as such bridge the capital structure gap by using debt and internal financing sources. This reluctance to issue equity may lead to family firms being more heavily leveraged. This can be extended to control-enhancing instruments when external equity is sought (King & Santor, 2008).

However, control is not the sole motivating factor – investment opportunities and lower perceived agency costs can also impact (Andres, 2011). Moreover, if family firms are risk-averse this is mirrored by finance providers who view family firms as less risky. This is centred on family firms having a long-term outlook (succession), low risk investment (capital expenditure), and the sector in which the firm operates (Croci et al., 2011). González et al. (2013) further corroborate the positive debt-family firm relationship in a Colombia-focused study. They find that family management negatively effects firm debt levels whilst family ownership positively effects firms debt levels and family governance negatively effects debt levels (González et al., 2013) which is consistent with agency cost theory. Ramalho et al. (2014) Portugeuse study and Öztürk & Mrkaic (2014) European

analysis find that family ownership in unlisted family firms is important in determining financial decisions and that regardless of size family firms are more likely to rely on long-term debt. The Austrian evidence of Burgstaller and Wagner (2015) concurs with this in that unlisted family firms have a greater reliance on debt in contrast to non-family firms. Both of these are consistent with agency and pecking order theories (Burgstaller & Wagner, 2015). The positive debt-family ownership relationship has strong support (Wu et al., 2007; Serrasqueiro et al., 2012; González et al., 2013; Ramalho et al., 2014; Burgstaller & Wagner 2015).

Yet there is some contrasting evidence (Bjuggren et al., 2012; Ampenberger et al., 2013). Bjuggren et al. (2012) found no evidence of any positive relationship between indebtedness levels and family ownership in Swedish medium-sized firms. German family firms are shown to have lower leverage ratios in contrast to their non-family counterparts (Ampenberger et al., 2013). Schmid (2013) concurs with the findings of Ampenberger et al. (2013) showing that German family firms rely less on debt than non-family firms. Yet, Schmid (2013) study provided two caveats: (1) the comparative analysis of an international dataset finds that these family firms do follow a positive debt-family ownership relationship, and (2) this is explained by family firm control motivation.

Lappalainen and Niskanen (2013) researching Finish SME-family firms find a truncated form of the pecking order hypothesis as such they are more open to further equity investments from current owners as well as trade credit, leasing and factoring instead of bank debt. Moreover, Lappalainen & Niskanen (2013) argue that family firms have a negative attitude toward debt likely due to a desire to retain ownership within the family and maintain financial independence.

In summary, firm ownership is widely viewed as having an impact on the financing of firms. Family-owned firms financing choices appear to be motivated by the control-driven orientation of the firm, their longer-term successional goal and low-risk attitude. Despite some contravening contributions there is stronger evidence to suggest that family-owned SMEs are more likely to use debt.

#### **2.4.2 Firm Age**

The financial life cycle theory charts the increase in the financing sources available to a firm over time. At different stages of this life cycle different financing strategies are needed by a firm (Berger & Udell, 1998). Informal financing is more important in the early stages of a firm's life-cycle and more formal financing comes into play as companies mature (Berger & Udell, 1998; Huyghebaert et al., 2007; Cosh et al., 2009; Chavis et al., 2011). The reasons cited for this are the growing reputation of borrowing firms, establishing a track record and building relationships with capital providers, thus reducing information asymmetries and agency risks (Walker, 1989; Petersen & Rajan, 1994; Chavis et al., 2011; Canton et al., 2013). Firm age can simultaneously impact upon both real barriers and perceived barriers to the access of finance (Ennew & Binks, 1995; Holton et al., 2014).

A number of studies have examined the differences in firm perceptions of credit availability against the reality of access to finance. Ennew & Binks (1995) find that older firms perceive less difficulty accessing external finance. Research shows that older firms face less rejection while younger firms perceive greater barriers (Artola & Genre, 2011; Holton et al., 2014). Ferrando & Griesshaber (2011) document how firm age and firm ownership are the most robust explanatory variables of a firm's perception of financing obstacles.

The importance of firm age is illustrated by Chittenden et al. (1996), Fluck et al. (1998), López-Gracia & Sánchez-Andújar (2007), Palacín-Sánchez et al. (2013), and Öztürk & Mrkaic (2014). There is consensus that firms have easier access to finance as they mature (Fluck et al., 1998; Mac an Bhaird & Lucey, 2010; Moritz et al., 2016). Fluck et al. (1998) in an analysis of small US entrepreneurial firms found that a tipping point occurs at a particular stage (although difficult to pinpoint) in a firms' growth. This tipping point refers to a shift from a reliance upon internal finance to gaining access to external finance. New firms who are less profitable may have difficulty in accessing external finance (Howorth, 2001). As firms age the information gap is expected to lessen. This leads to bank lending constraints decreasing and trade credit availability increasing (Casey & O'Toole, 2014).

López-Gracia & Sánchez-Andújar (2007) find that as firms age they have the time and capability to accumulate funds which in turn highlights a knock-on effect which essentially means that this increased pool of internal wealth reduces the demand for access to external finance. Mac an Bhaird & Lucey (2010) concur showing that as firms age, information asymmetry lessens, they have the necessary time to accumulate internal reserves and collateral which are important factors in SME finance availability. Older firms reap the benefits of their comparatively deeper pool of collaterisable assets enabling easier access to debt (Öztürk & Mrkaic, 2014).

Coleman & Carsky (1999) analysis of small US family firms identify firm age, size and profitability as the most important predictors of the use of credit products. They did not discern any major differences between family firms and non-family firms *per se*. Moreover, they assert that more than 90% of family firms surveyed rely on commercial banks for credit. Some studies highlight the fact that younger family firms in particular are more concerned with non-dilution of the firm than growth/investment thus

deliberately limiting financing options (Romano et al., 2001; Gallo et al., 2004). Mahéralult (2004) in the case of French SMEs, attest that an age difference exists in the financing patterns of young and old family firms. López-Gracia & Sánchez-Andújar (2007) further support this illustrating how small Spanish family firms partly through the accumulation of funds over time experience a negative relationship between age and debt usage. Bjuggren et al. (2012) indicate that for small family firms in Sweden, age is negatively related to the use of debt. Earlier, Romano et al. (2001) find an insignificant yet positive relationship between SME family firm age and debt usage in an Australian based study, whilst Portuguese family firms display highlight an outright positive age-debt relationship (Vieira, 2013). Furthermore, González et al. (2013) for private and publicly-held family firms in Colombia found a truncation-effect of the age to leverage relationship asserting that debt decreases with age to a certain point but beyond this point debt increases again.

A few studies contradict the validity of age differences between SME family firms and non-family firms. Gallo et al. (2004) in a Spanish study of small firms illustrate how family firms are older than their non-family counterparts. Yet, across a wider European sample Croci et al. (2011) contend that family firms are more often younger. Acedo-Ramírez et al. (2017) show how the use of finance by Spanish private family firms is determined by the age and size of the firm.

Martinez-Cillero et al. (2019) describe the age-debt relationship of European SMEs as one which either concurs with the pecking order hypothesis (negative relationship) or one that favours the trade-off theory (positive relationship). Ultimately, Martinez-Cillero et al. (2019) find a non-linear relationship between indebtedness and firm age.

In summary, firm age has been shown as a key determinant for SMEs in access to finance (Mac an Bhaird & Lucey, 2010; Artola & Genre, 2011; Holton et al., 2014; Öztürk & Mrkaic, 2014). Few detract from the paramount role of a family firm's age in financing (Romano et al., 2001; González et al., 2013). Thus, there is strong evidence to show how the availability of finance is influenced by the age of family-owned SMEs (Mahérault, 2004; López-Gracia & Sánchez-Andújar, 2007; Bjuggren et al., 2012; González et al., 2013; Acedo-Ramírez et al., 2017).

#### 2.4.3 Firm Size

The capital structure of SMEs differs with larger firms (Berger & Udell, 1998; Psillaki & Daskalakis, 2009) with firm size shown as a key indicator of access to finance (Beck et al., 2005; Beck & Demirgüç-Kunt, 2006). Firm size is important in determining the availability of finance (Artola & Genre, 2011; Canton et al., 2013; Holton et al., 2014). Firm size is more pronounced for SMEs during times of limited credit availability (ESRI, 2014; Psillaki & Eleftheriou, 2015) due to their over dependence on bank debt. Small firms have more to gain in countries with well-developed financial systems (Beck et al., 2008a). Yet, Hamilton & Fox (1998) found that the source of finance is independent of firm size while Ennew and Binks (1995) claim that information opacity is paramount, not necessarily firm size.

Internal finance is widely used by micro and small firms finance (Fluck et al., 1998; Moritz et al., 2016). Beck et al. (2008b) illustrate how small firms rely less on external finance, especially bank finance, due mainly to the financial development of a country. Smaller firms often experience difficulty in accessing external debt (Öztürk & Mrkaic, 2014). Consistent with the pecking order hypothesis, as firms grow more external financing sources become available, particularly bank borrowings (Artola & Genre, 2011; Jõeveer, 2013; Holton et al., 2014).

Sogorb-Mira (2005) study of Spanish SMEs find traits of pecking order behaviour illustrating a positive relationship between firm size and external finance. SME managers' desire to retain control may be a potential barrier to sourcing external finance (Sogorb-Mira, 2005). Psillaki & Daskalakis (2009) concur finding a similar relationship between SME size and debt in their analysis of European SMEs (France, Grece, Italy and Portugal). Moreover, employing the ECB's SAFE database and focusing on the four largest EU member states; France, Germany, Italy and Spain; Ferrando & Griesshaber (2011) show that external finance usage is positively related to firm size. More recently, Moritz et al. (2016) demonstrate how smaller firms have a disproportionate reliance on internal finance and short-term debt. In essence smaller firms for a myriad of reasons lean more towards internal resources and short-term debt.

Coleman & Carsky (1999) illustrate how family firm size is one of the most important factors in determining the use of various forms of credit and the level of a firm's gearing. However, their work sheds no light on the difference, if any, between family firms and non-family firms. Australian family-owned firms extensively rely on internal funding, and only access debt as firm size increases (Romano et al., 2001). Firm size is an importance determinant of the capital structure of Spanish medium sized SMEs (family firms and non- family firms) yet, despite evidence that family-owned SMEs rely more on internal resources no difference was found in the use of debt between family-owned SMEs and non-family (López-Gracia & Sánchez-Andújar, 2007). Subsequently, Ampenberger et al., (2013) asserts, in a German study of publicly listed companies, that simultaneously family firm ownership and firm size have a significant impact on leverage ratios. Ramalho et al. (2014) show that Portuguese SME family firm size positively influences the use of debt. They also claim that family firms' debt usage is differs across the size (micro, small or medium) categories (Ramalho et al., 2014). Acedo-Ramírez et

al. (2017) concur for privately-owned firms in Spain finding differences in the usage of debt depends on the size of a family-owned firm. Notably, they show how young firms use less debt in contrast to the larger cohort (Acedo-Ramírez et al., 2017). Yet, in an Italian sample of small family firms results show that size has a minuscule impact on the use of various credit instruments (Di Giuli et al., 2011).

In summary strong evidence is found of the importance of firm size as a determinant of access to finance, particularly bank debt (Psillaki & Daskalakis, 2009; Artola & Genre, 2011; Canton et al., 2013; Holton et al., 2014; Moritz et al., 2016). The heightened risk-aversion and desire to maintain control of family-owned SMEs, coupled with their reliance on bank debt, accentuates the impact of firm size on use of external credit by family firms (Romano et al., 2001; López-Gracia & Sánchez-Andújar, 2007; Ramalho et al., 2014; Acedo-Ramírez et al., 2017).

#### **2.4.4 Firm Profitability**

Firm profitability can influence capital structure decisions (Coleman & Carsky, 1999; Maherault, 2004; Drakos, 2013), consistent with the trade-off theory. Ennew & Binks (1995) attest that profitability may modify the perceived degree of constraint for SMEs' in accessing finance. Profitable SMEs are less likely to rely on external sources of finance due to the accumulation of retained earnings (Hall et al., 2004; Moritz et al., 2016). Hall et al. (2004) find a negative relationship between profitability and all forms of debt, in the context of SMEs in Belgium, Germany, Italy, Portugal and the UK. Similarly, Spanish and Dutch SMEs who are more profitable are found to use less debt (Sogorb-Mira, 2005; Degryse et al., 2012; Palacín-Sánchez et al., 2013).

Prior research illustrates that firms with higher profits are more likely to rely on internal sources or less formal routes, and are less indebted (Cosh et al., 2009; Moritz et al., 2016).

Irish SMEs also rely on internal sources to finance their activities (Mac an Bhaird & Lucey, 2010) which is consistent with the pecking order hypothesis. Profitability has been shown as an important determinant in access to finance for European SMEs (Ferrando & Mulier, 2013).

Noticeably, studies by Coleman & Carsky, (1999) and Moritz et al., (2016) find no significant difference between family-owned firms and non-family firms regarding the impact of profitability on firm debt. However, a difference is observed relating to overall profitability and performance of firms (Miller et al., 2007). More profitable family firms can rely on a pool of internal funds (Coleman & Carsky, 1999). The use of internal funds by more profitable family firms is illustrated in several single-country European studies, in France (Maherault, 2004), Spain (López-Gracia & Sánchez-Andújar, 2007), Belgium (Molly et al., 2012) and Portugal (Vieira, 2013).

In sum, it is shown that SME and small family firm profitability reduces the need for external finance as such firms can rely on retained earnings to meet their financing needs.

#### **2.4.5 Firm Growth**

Cassar (2004) test the association of intent for growth (measured by likely increase in production, opening new locations or introduction new products/services) and leverage in an Australian dataset of SME start-ups and find that growing firms are more likely to use bank finance than other forms of credit. Sogorb-Mira (2005) show how fast-growing Spanish SMEs use more long-term debt and not short-term debt. Deloof et al. (2007) found the effect of growth on both debt and leasing attests to a substitution effect and shows how high growth firms have a greater need for external finance and will readily switch between available external financing sources. Degryse et al. (2012) for Dutch SMEs and Palacín-Sánchez et al. (2013) regarding Spanish SMEs contend that growing firms increase their debt levels. Earlier, Chittenden et al. (1996) highlighted that rapidly

growing small firms must be open to all forms of non-equity finance instruments. The apparent indifference to the type of financing is corroborated by Moritz et al. (2016) who find that SMEs with higher growth rates (in excess of 20 per cent) use a wider range of financing sources, namely trade credit, leasing, factoring and hire-purchase. High growth firms may have a different perspective on control and show a greater willingness to relinquish control to achieve growth (Mac an Bhaird & Lucey, 2010). Consequently, young high growth firms and exporters are more receptive to a greater variety of sources of finance (Riding et al., 2012).

Yet, Psillaki & Daskalakis (2009) in the case of SMEs across France, Greece, Italy and Portugal attest that firm growth is insignificant in the finance decisions of SMEs in these countries.

Family firms, particularly growing younger firms, may have difficulty in accessing external finance due to the lack of collateral which restricts their choice of available debt. (Coleman & Carsky, 1999). Several studies find that family firms for many reasons including risk aversion, control, and long-term business orientation may intentionally restrict growth (Mahérault, 2000; Gallo et al., 2004; Wu et al., 2007; Molly et al., 2012; Hamelin, 2013). Small family firms initially rely on internal sources such as family loans to fund their growth (Romano et al., 2001) and then move to external debt sources (Molly et al., 2012; Keasey et al., 2015). López-Gracia & Sánchez-Andújar (2007) for Spanish SMEs show how growth is negatively related to the level of debt but only for family firms, who, in their desire to maintain control of the firm, are likely to rely on internal funds. Thus, family firms' financing decisions are primarily driven by control orientation and may pass on growth opportunities.

González et al. (2013) summarise the growth-leverage relationship, within the study of family firms capital structure in Colombia, and find a trade-off between family firm risk aversion and the need for adequate finance to support firm growth. The preference of family firm owners to retain control may contribute as a result to increased reliance on debt compared with non-family firms.

In summary, there is strong evidence to suggest that different sources of finance are used by SMEs to fund growth, with debt being the predominant form. While it is reasonable to expect that the growth-debt relationship should be positive, it is not always so. It is understandable that small growth SMEs are restricted to the availability of funding which in many cases, as stated above, is short-term debt. Financing growth in the case of family-owned firms is tempered by the threat to maintaining control of the business and thus, may pass up growth opportunities. As such, family-owned SME are far more likely to follow a path of steady growth financed by sources which do not impact upon control of the firm.

#### **2.4.6 Firm Sector**

The sector of an SME is likely to have an impact on their financing decisions (Harris & Raviv, 1991; Michaelas et al., 1999; Degryse et al., 2012; Psillaki & Eleftheriou, 2015; Moritz et al., 2016). Sector refers to the economic activity in which the firm operates. The sector in which micro and small Portuguese SMEs operate has been shown to impact their financing decisions (Ramalho & Silva, 2009). Firms in sectors with tangible assets have more external debt as they are able to provide collateral (Mac an Bhaird & Lucey, 2010). Artola and Genre (2011) found for European SMEs that firm sector does not explain access to finance for German SMEs, yet SMEs in France, Italy and Spain sector impacts the availability of finance, notably Spanish and Italian construction firms are found to have greater difficulty accessing external debt compared to other firms. Degryse et al.,

(2012) attest in the case of Dutch SMEs that debt usage differs across sectors. Psillaki & Eleftheriou (2015) illustrate for French SMEs how the availability of external finance sources varies across sectors. Moritz et al., (2016) contend that financing sources can be profiled based on firm characteristics such as the sector in which a firm operates.

SME service firms in Canada are more likely to have a loan application approved, whereas start-up exporters are constrained in their financing options (Riding et al., 2012). European service firms tend to rely on internal financing as tangible assets to offer as collateral are relatively low (Moritz et al., 2016).

Romano et al. (2001) in an Australian study show how family-owned SMEs in the services sector are likely to rely on retained earnings and avoid informal channels such as family loans. Burgstaller & Wagner (2015) find no support for an industry effect on the financing decisions of Austrian family firms.

In summary, there is some evidence to suggest that firm sector has relevance to SMEs and family-owned firms in their financing decisions.

#### **2.4.7 Firm Exports**

Relatively few studies examine SME exporters' sources of finance. Greenaway et al., (2007) show how UK manufacturing exporters are better at attracting finance than those who do not export which they assert is due to export firms having a stronger financial profile. In a study of small firms in 48 countries Beck et al. (2008b) attest to the increased usage of bank finance by the exporters. Riding et al. (2012) in a comparative Canadian study of exporting SMEs show that exporters are more likely to apply for a greater range of external financing including debt and equity sources than non-exporting SMEs. However, young export-oriented SMEs have greater difficulty accessing bank debt (Riding et al., 2012). Access to bank debt is essential to SMEs' exporting activity (Abor

et al., 2014; Bartoli et al., 2014; Goldbach & Nitsch, 2014). Benkraiem and Miloudi (2014) show how French exporting SMEs are more likely to have difficulty in accessing bank finance due to increased risks and uncertainty of payments from international buyers in times of economic crisis. Belgian exporting SMEs have more debt than non-exporters and rely mainly on short-term bank debt due to their higher working capital needs (Maes et al., 2019). Small and medium Australian family firms follow a careful path of exporting driven in part by available resources and their control and privacy orientation (Graves & Thomas, 2008). Minetti et al., (2015) found how Italian manufacturing family firms are much more likely to export than non-family firms due to their long-term focus, thus realising the importance of export activity.

In sum, most of the available literature points to the importance of bank debt for exporting SMEs yet access to bank finance is not always readily available due notably the lack of collateral and the increased risks associated with buyers in foreign markets. There is a paucity of research on the sources of finance used by family-owned firms despite evidence that such firms are more likely to export.

#### **2.4.8 Firm Innovation**

External finance is more important for innovative small firms as they may lack enough internal resources to develop and launch new products or services (Beck & Demirgüç-Kunt, 2006). Yet studies attest to the heightened difficulties such small firms have in accessing external finance (Mina et al., 2013; Lee et al., 2015; OECD, 2018). Mina et al., (2013) in a comparative study of US and UK SMEs found little evidence of external debt constraint for innovative SMEs. Their study differentiated between innovation type e.g., new product, process innovation or administrative innovation and attest that the more risky or uncertain the outcome the increased likelihood of credit constraint. Innovative UK SMEs are more likely to apply for external credit, yet these firms are also more likely

to be refused bank finance than other SMEs (Lee et al., 2015). Ferrando & Lekpek (2018) show how European SMEs who innovate and use a wide variety of financing sources are more likely to invest in R & D and develop new products and services. Mateut (2018) examined innovative firms in emerging economies (30 countries in Eastern Europe and Asia) and show a positive link between public policy support and innovation, especially for those firms who are financially constrained. Notably, grants are an innovation policy instrument used by several EU countries to alleviate access to finance obstacles especially for innovators (Mateut, 2018).

Nieto et al. (2013) empirical analysis of Spanish family firms show how this cohort are less innovative than other SMEs. Schäfer et al. (2017) study of innovation and financing of family-owned German firms, including large and small/medium firms, found that while family-owned firms invested less in innovation the outputs are comparable with those of non-family-owned firms. Their sample comprises of SME family-owned firms (57%) and non-family SMEs (43%). They further attest that family-owned firms and non-family-owned firms rely mainly on internal funds to finance innovation, but external bank finance plays an important role for family firms who, as a result, are found incur higher external financing costs associated with innovation (Schäfer et al., 2017).

In summary, there is considerable evidence to support the reliance of SMEs and family-owned firms on a wide range to finance sources to support their innovation activities.

#### **2.4.9      Country Institutional Setting**

The role of country institutional setting, which include macroeconomic factors, legal system, bankruptcy laws, investor protection, creditor monitoring, and bank market power in determining the capital structure of firms has garnered greater realisation of its importance in the literature (Rajan & Zingales, 1995; La Porta et al., 1997; Booth et al., 2001; Beck & Demirgüç-Kunt, 2006; De Jong et al., 2008). Numerous studies point out

that availability of finance can vary considerably depending on a range of country specific characteristics (Rajan & Zingales, 1995; Demirgüç-Kunt & Maksimovic, 1998; Booth et al., 2001; Gaud et al., 2005; De Jong et al., 2008; Mc Namara et al., 2017). La Porta et al. (1997) analysis of 49 countries found differences in investor protection through law and enforcement had an impact on the availability of external finance and the financing decision of large firms. Notably, Franks et al. (2012) found that family firms (public and private) only change into widely held firms as they age in countries with strong investor protection.

Cole (2013) claims that the elements that determine the capital structure of private firms remains unresolved. The impact of the institutional and lending environment on a firm's capital structure has gathered increasing importance since the 1990's (De Jong et al., 2008; Mc Namara et al., 2017). To-date most of the literature has centred on large publicly listed firms (Rajan & Zingales, 1995; Demirgüç-Kunt & Maksimovic, 1998; Booth et al., 2001; Gaud et al., 2005) with a dearth of research in the SME space and none in the privately-owned family firm arena.

The habitat in which a firm operates is influenced by several factors outside of their own enterprise. These factors can be grouped into the lending infrastructure which has seven aspects: information environment, legal environment, judicial environment, bankruptcy environment, social environment, tax environment, and the regulatory environment (Berger & Udell, 2006). These environs marry with the theoretical strands above - the information environment centres on the sharing of information, the alleviation of asymmetric information which underpins the agency problem and forms the basis for a firm's financial development over its life cycle (Mac an Bhaird & Lucey, 2010). Given the reliance by SMEs on external debt over equity (pecking order approach) information sharing alleviates the availability of bank credit for this cohort (Memmel et al., 2008;

Ferri et al., 2020). Equally, the legal, judicial, bankruptcy, and tax environments cannot be disregarded from trade-off theory as they represent both sides of the debt trade-off equation. The judicial system of a country establishes how laws are enforced which impacts credit availability (Berger & Udell, 2006). Rajan & Zingales (1995) attest the relevance of bankruptcy costs on firms' capital structure. The relevance of tax-shields on SME leverage decisions is mixed. Most of the evidence finds that the tax benefits of debt are not significant in capital structure decisions of SMEs (López-Gracia & Sánchez-Andújar, 2007) given their lower levels of profitability as compared with large firms. Adverse selection and moral hazard can be mitigated by close bank-borrower relationships (Mac an Bhaird & Lucey, 2010). A firm's relationship, based on trust, provides the bank with a basis to build enduring relationships thus alleviating availability of finance. The regulatory environment, Berger and Udell (2006) refers to capital regulation and supervision of financial institutions. The implications of tighter bank regulation, including Basel 111, may lead to banks seeking more collateral to advance credit, particularly to SMEs (Mac an Bhaird & Lucey, 2010).

Country differences and particularly the effect of the institutional setting on capital structure decisions is a relatively new research strand in the SME field given the importance of country effects is paramount to SMEs' ability to access appropriate external finance to grow (Hall et al., 2004; Beck & Demirgüç-Kunt, 2006; Beck et al., 2008b). SMEs have been under-represented in this field with only a few studies analysing the institutional and lending environment of countries (Hall et al., 2004). In the intervening period limited research of country differences in SME capital structure have emerged. These include studies by Giannetti (2003), Hall et al. (2004), and Psillaki & Daskalakis (2009). Giannetti (2003) in the case of unlisted firms in eight European countries found a significant influence on the capital structure of this cohort due to some

institutional variables namely, creditor protection, legal enforcement and stock market development. Hall et al. (2004) analysed 8 European countries (Belgium, Germany, Spain, Ireland, Italy, Netherlands, Portugal and the UK) and posited that variations in the SME capital structure of these countries is likely due to country effects. Psillaki & Daskalakis (2009) study of SMEs in 4 countries, France, Greece, Italy and Portugal found affinity in the determinants of their capital structure due to similar institutional and financial characteristics and a civil law system. Hernández-Cánovas & Koëter-Kant (2010) assessed SMEs in nineteen European countries and found differences in financing due to the level of creditor protection measured by legal rules and enforcement. These studies relied either on indirect effects (Hall et al., 2004) or on limited institutional factors (Giannetti, 2003; Psillaki & Daskalakis, 2009; Hernández-Cánovas & Koëter-Kant, 2010). Ryan et al.' (2014) empirical analysis of SMEs in 20 countries found that the degree of bank market power heightens financing constraints for this cohort. This financing constraint is further exacerbated in bank-based countries (Ryan et al., 2014). A robust analysis of all components of Berger & Udell's conceptual framework was carried out by Mc Namara et al. (2017), empirically testing the impact of the institutional environment on SME firm leverage. Mc Namara et al. (2017) show how elements of countries lending infrastructure prove influential determinants of SME leverage. They find that SMEs have more long-term debt in countries with more efficient bankruptcy systems, whilst they also find a relationship between the legal and information environments and the use of short-term debt by European SMEs. SMEs in countries with less severe regulation of capital providers have more debt, both short and long-term (Mc Namara et al., 2017).

The institutional environment gap identified in prior SME based studies (Hall et al., 2004; Mc Namara et al., 2017), to the author's knowledge, the gap extends to family-owned

SMEs where a comparable cross-country analysis does not exist. It is important to understand the impact of country effects on family-owned SMEs who are found to rely more on bank finance for a myriad of reasons (Ampenberger et al., 2013; Burgstaller & Wagner, 2015; Crespí & Martín-Oliver, 2015). The reasons already documented involve factors such as risk aversion which include bankruptcy costs, control orientation, social and relationship traits, generational approach and closer bank relationships.

In the context of large and public family firms' prior studies have examined the topic. Franks et al. (2012) European analysis of listed and privately-held family firms attest the importance of the institutional environment (robust investor protection, well developed financial markets, law and enforcement) on the progression of this cohort into widely held firms whilst weak investor protection environment, families retain control of the firm. Ampenberger et al. (2013), in a study of German listed family firms, a bank-based economy, suggests that these firms are firstly different to non-family firms and secondly, are likely to use different financing sources, including debt and equity, depending on the country's institutional setting. They show how German family firms use less debt in contrast to non-family-owned firms due to the level of creditor monitoring along with the higher risk aversion (Ampenberger et al., 2013). Schmid (2013) also found evidence that the level of debt used in family firms depends on the level of credit monitoring and is different if firms are in bank-based versus other economies.

In summary, consensus exists as to the importance of the country setting in which small firms are based (Beck et al., 2005; Masiak et al., 2017). A pan-European study necessitates consideration of the implications of differing institutional settings across nations (Hall et al., 2004; Beck et al., 2008b; Canton et al., 2013; Jõeveer, 2013; Holton et al., 2014; Mc Namara et al., 2017). The institutional setting of a country affects operations and availability of finance for SME firms (Hernández-Cánovas & Koëter-

Kant, 2010). Country effects have been incorporated into studies related to publicly listed family firms. Yet, the core dimensions of the institutional setting have yet to be taken into the SME family-firm research strand. The institutional environment is important in family firm research (Ampenberger et al., 2013) as such firms have been shown more reliant on bank finance, particularly SME family-owned firms. Schmid (2013) recommends that the institutional environment should not be ignored in studies of family firm finance.

#### **2.4.10 Summary**

This Section has determined the range of variables most pertinent to the financing of SMEs and, in particular, the family-owned cohort therein.

Firm ownership has been firmly established as the primary driver of small firm finance and most notably family-owned SME ownership given their determination to maintain ownership and preserve the business for future generations. Family-owned firms have unique hallmarks differentiating them from other SMEs, which has been consistently found in their deliberate path of financing through internal sources, external debt and informal finance options.

Evidence was shown of the importance of several variables on the financing of family-owned SMEs. Firm age and firm size specifically are the most frequently discussed variables in the SME and small family firm empirical literature and have robust empirical backing of their validity as finance decision determinants.

Family firm ownership and the variables point to the relevance of agency theory, pecking order theory, financial life cycle, and the importance of the country setting in which small firms are based.

The next section reaffirms the research objective and research questions.

## **2.5 Research Objective**

The objective of this study is to examine the financing preferences of European SME family-owned firms compared to non-family-owned SMEs and to assess whether or not family-owned firms experience any form of credit constraint. More specifically the research questions seek to address this research objective.

## **2.6 Research Questions**

Research question one seeks to establish the likely use of the sources of finance by family-owned SMEs compared to solely owned SMEs and professionally owned SMEs. The rationale for these ownership groups is based on the fact that family-owned firms are the largest subset of all SMEs, who are characterised by unique attributes. Sole owners, the second largest ownership group, are considered to be straightforward businesses with uncomplicated decision-making as there is only one business owner. Professionally owned SMEs include business associates, other enterprises, venture capitalists, business angels and any other SMEs. This latter group are generally concerned with the professional management of the business to maximise profits.

Research question two tests for the likelihood of family-owned firms experiencing financing constraint compared to sole owner SMEs and professionally owned SMEs. The research questions are: -

RQ1 - What sources of finance are employed by European family-owned SMEs in contrast to non-family SMEs?

RQ2 – What is the likelihood of European family-owned SMEs experiencing credit constraint in contrast to non-family SMEs?

The next section presents the sources of finance and the hypotheses for research question one.

## **2.7 Sources of Finance & Hypotheses RQ1**

This section describes each of the eleven sources of finance typically used by SMEs, followed by empirical evidence of their relevance and usage by SMEs and privately-owned family firms leading to the development of hypotheses in respect of research question one. Each of these sources feature in the SAFE survey.

### **2.7.1 Retained Earnings**

Retained earnings refers to the internal funds of the firm<sup>5</sup>. Such earnings are usually accumulated as the result of firm profitability, savings or the sale of assets. Retained earnings are widely used by SMEs and especially by SME family-owned firms as these funds are often readily available for continuity, growth and investments of the business. These retained earnings are relatively cheap and importantly control of the firm is not endangered. On the other hand, younger and smaller SMEs are unlikely to have accumulated sufficient retained earnings to meet all their financing needs.

Chittenden et al. (1996) attest that retained earnings are more prevalent in profitable and older SMEs. Mature firms who have had more time to accumulate such funds are more likely to use retained earnings (Myers & Majluf, 1984; López-Gracia & Sánchez-Andújar, 2007; Mac an Bhaird & Lucey, 2010; Palacín-Sánchez et al., 2013). In the context of European SMEs, Ferrando et al. (2017) illustrate how in times of a credit crisis mature or older firms are more likely to use retained earnings.

Poutziouris (2001) shows how UK family-owned SMEs place strong reliance on retained earnings stemming from their reluctance to use external sources of finance. Equally, López-Gracia & Sánchez-Andújar (2007) find that Spanish medium sized (50-250 employees) family firms rely more on internally generated funds to finance their

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<sup>5</sup> The EC/ECB's SAFE survey defines retained earnings as 'internal funds like cash or cash equivalent, resulting for instance from savings, retained earnings or sale of assets' (ECB, 2017).

operations. They will even restrict growth if necessary, to avoid diluting control resulting from taking on external sources of finance such as equity (López-Gracia & Sánchez-Andújar, 2007). Molly et al. (2012) reinforce this by showing how profitable family-owned Belgian firms use more internal funds and fewer external sources of finance. Slovenian family-owned SMEs also prefer financing their businesses with retained profits (Vadnjal & Glas, 2008) as do Swedish family firms who were found to use more internal sources of finance than their non-family counterparts (Mohamadi, 2012). Lappalainen & Niskanen (2013) attested that Finnish family-owned SMEs use more retained earnings than their non-family counterparts.

The phenomenon is also seen outside of Europe as Chinese family-owned businesses are found to lean more on internal revenues to avoid outside interference (Zhang et al., 2012). French family-owned SMEs are more likely to prefer internal financing due to their control and risk aversion that could occur with external debt (Psillaki & Eleftheriou, 2015). More recently, in a comparative study of Swedish SMEs Bornhäll et al. (2016) claim that, as independence is a primary motivator for SME family-owned firms, they are more likely to rely on retained earnings compared to non-family firms, having controlled for firm level factors including firm size and firm age.

Given the overwhelming evidence to support the preference of family-owned SMEs across Europe and beyond for retained earnings Hypothesis 1 is:

*Hypothesis 1: European family-owned SMEs are more likely to use retained earnings than non-family SMEs.*

#### **2.7.2 Grants & Subsidised Bank Loans**

A grant is a sum of money awarded to a business for a specific purpose, for example, to carry out research and development or to source new foreign markets for export

purposes<sup>6</sup>. The provider of grant finance is normally a government body forming part of a country's economic policy to provide fiscal support for firm investment, encourage innovation and job creation. These grants and loans can provide capital for SMEs who may not qualify for a loan from a private lender, particularly a bank. Typically, a grant is non-repayable and used for a specific purpose and subject to strict rules and regulations. Non-compliance with any of the rules may result in withdrawal of the offer of a state-aid grant (EU, 2009). Subsidised loans are provided or under-written by governments with the aim of making cheaper finance available to firms for a specific purpose such as the purchase of a fixed asset to expand the business. Most European SMEs in Europe rely on bank loans for external financing, which can be difficult particularly if they lack collateral or have little or no track record or credit history. Thus, the provision of a government guarantee to a commercial bank or to the borrower, combined with an attractive interest rate, encourages banks to provide loans to small firms to survive and expand.

Grants and subsidised loans although designed to help support SMEs are not always availed of by all SMEs. Masiak et al. (2017) document how European micro sized SMEs use such assistance less than the larger firms. This concurs with the rationale of Daskalakis et al. (2013) for Greek micro and small firms not accessing grants is due to a lack of information about the availability and criteria of this type of finance. Yet, Öztürk & Mrkaic (2014) find in the case of European SMEs that government subsidised loans are an important source of finance for such firms. Casey & O'Toole (2014) document how SMEs in distressed European economies rely more on grants and subsidies than those firms in non-distressed countries. Their analysis was conducted over a two year time span (2009/2011) and included eleven countries - Austria, Belgium, Germany, Spain, Finland,

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<sup>6</sup> The SAFE survey defines grants & subsidised bank loans as 'support from public sources in the form of guarantees or reduced interest rate loans' (ECB, 2017).

France, Greece, Ireland, Italy, the Netherlands and Portugal, and showed how micro sized firms are more likely to use grant aid compared to medium sized SMEs which they attest is generally targeted at micro firms (Casey & O'Toole, 2014), contrary to the work of Daskalakis et al. (2013) and Masiak et al. (2017). In addition, Ferrando et al. (2017) show how in times of a credit crisis, European SMEs in the five stressed countries<sup>7</sup>, having controlled for a wide range of firm level variables rely more on government grants and subsidised loans instead of bank finance.

There is growing interest in the relationship between exporting SMEs and innovators as alluded to by Golovko & Valentini (2011) for Spanish SMEs and by Ribau et al. (2017) for such firms in Portugal. More recently, Ferrando & Lekpek (2018) found that grants play an important role for innovative SMEs, especially medium-sized firms, in several EU countries in order to alleviate problems in accessing finance. They also find that innovative firms who use a wide range of finance sources are more likely to invest in research and development and bring new products to the market (Ferrando & Lekpek, 2018). Martí & Quas (2018) found that the availability of grants and subsidies for Spanish SMEs provides a strong government endorsement of firms to banks thus increasing their access to bank finance. Dedu et al., (2019) also attest to the important role played by grants and subsidised loans in improving access to finance for SMEs in six European countries (Austria, France, Germany, Italy, Portugal, Spain) in the period 2003 – 2014. In particular, they found that Italian and Spanish firms benefited the least from public support programmes. They contend that this is due to a lack of unison between EU SME policy supports and their integration at individual country level (Dedu et al., 2019).

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<sup>7</sup> Five stressed countries are Portugal, Ireland, Italy, Greece and Spain (Ferrando et al., 2017).

There is a dearth of literature on the usage by family-owned SMEs of government grants and subsidies, except for Moritz et al. (2016) and Vadnjal & Glas (2008). Moritz et al., (2016) concurs with Casey & O'Toole (2014) finding that European SMEs in distressed countries<sup>8</sup>, particularly medium sized family firms, are more likely to use government support. Vadnjal & Glas (2008) show how Slovenian family firms are both better informed and display a preference for using government support compared to other SMEs. They attest that grants and subsidised bank loans are more important for family firms, compared to other SMEs, as these financing sources do not interfere with control of the firm (Vadnjal & Glas., 2008). Several empirical studies show how family-owned firms are concerned with preserving control and risk avoidance (Poutziouris, 2001; Romano et al., 2001; López-Gracia & Sánchez-Andújar, 2007; Croci et al., 2011; Gonzalez et al., 2013; Schmid, 2013; Acedo-Ramírez et al., 2017).

In summary, despite few sources the evidence drawn from the risk aversion and control orientation of family-owned SMEs point to the greater likelihood of such firms favouring government grants and subsidised bank loans more than other SMEs. Hypothesis 2 is

*Hypothesis 2: European family-owned SMEs are more likely to use grants and subsidised loans than non-family SMEs.*

#### **2.7.3 Bank Credit Lines, Overdrafts and Credit Cards**

Credit lines, overdrafts, and credit cards are categorised as flexible, short-term forms of bank finance<sup>9</sup>. Credit lines, also known as stocking loans or seasonal working capital sources, are pre-arranged bank loans where the borrower can use some or all the facility

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<sup>8</sup> Distressed countries comprise Portugal, Ireland, Italy, Greece, Spain, Cyprus and Slovenia (Moritz et al., 2016). In this study Cyprus and Slovenia are not included in the distressed or PIIGS countries.

<sup>9</sup> The EC/ECB's SAFE survey refer to bank credit lines, overdrafts and credit cards as where a 'borrower can draw only part of the money at discretion up to an agreed maximum balance, and interest is charged only on money actually withdrawn. A bank overdraft is the negative balance on a bank account with or without specific penalties. A credit card overdraft is a negative balance on a credit card'. (ECB, 2017).

for a specific short-term purpose and only pay interest on the amount drawn down (Ward, 2010). Bank overdrafts and credit cards provide the borrower with an approved limit. Thus, the borrower has the use of bank debt, subject to operating within this approved limit. These short-term bank products are generally used for the day-to-day financing needs of a firm. Bank overdrafts provide the necessary finance to meet the ongoing needs of a firm such as wages, fuel, light, and heat. Credit cards are associated with many small purchases such as postage and fuel.

After exhausting internal sources, smaller firms tend to rely more on short-term bank credit (Chittenden et al., 1996; Berger & Udell 1998; Beck et al. 2008a). Younger SMEs may only be able to obtain shorter term bank finance mainly due to information asymmetries (Degryse et al. 2012; Moritz et al., 2016).

There are several studies which illustrate the preference of small family-owned firms for short-term debt over long-term debt. Coleman & Carsky (1999) find a large proportion of US family-owned SMEs rely on commercial banks for credit, particularly short-term bank credit. Poutziouris (2001) concurs with this highlighting the short-term bank finance preference of UK family-owned SMEs as does Colot & Croquet (2009) in the case of Belgian SME family firms who found that such firms have more short-term debt than other SMEs. Lappalainen & Niskanen (2013) show how Finnish family-owned SMEs rely more on short-term debt due to difficulty in accessing longer term finance. Similarly, Węcławski (2014) found that Polish medium sized family-owned firms tend to use more short-term debt. Burgstaller & Wagner (2015) find that Austrian family-owned SMEs use more short-term bank debt than non-family-owned SMEs. Migliori et al., (2018) show how Italian medium-sized family-owned SMEs, in the manufacturing sector, prefer short-term and long-term debt term debt which suggests low information asymmetry and minimal agency cost issues with lenders. Such evidence suggests support for the pecking

order theory showing how family-owned SMEs after exhausting internal finance turn to the least intrusive form of external debt, namely short-term bank debt which can be repaid quickly and without penalty.

In contrast Serrasqueiro et al., (2012) finds Portuguese family-owned SMEs preferred longer term bank debt as opposed to short-term bank debt. They suggest that the reasons include the long-term orientation of family firms, reluctance to diversify their financing preferences, the retention of ownership coupled with easier access to long-term debt compared to non-family SMEs. In the latter case they assert that lenders find it easier to identify family firm borrowers compared to other SME borrowers (Serrasqueiro et al., 2012).

Overall, there is a significant body of evidence to support the use of bank credit lines by family-owned SMEs in contrast to other SMEs, as short-term debt is more flexible with fewer formal restrictions, requires less monitoring and is easier for family firms to exit.

Hypothesis 3 reads:

*Hypothesis 3: European family-owned SMEs are more likely to use bank credit lines than non-family SMEs.*

#### **2.7.4 Bank Loans**

Bank loans are a loan facility for a fixed sum and fixed repayment date<sup>10</sup>. These loans are generally long-term collateralised sources of finance. Lenders offer bank loans for a specific purpose, including capital expenditure, the purchase of property, land or large-scale business expansion. Loans are subject to strict terms and conditions which must be adhered to. Since bank loans are usually long-term, banks seek collateral and charge an interest rate to cover the uncertainty risk spanning such a period. Most bank loans are

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<sup>10</sup> The EC/ECB in the SAFE survey refer to bank loans as the ‘precise amount of loan and the dates of repayments are usually fixed’. (ECB, 2017).

secured on specific assets, but unsecured loans attract higher rates of interest and more stringent terms and conditions as risk to the lender is increased. Bank loans are the primary source of external finance for SMEs (Berger & Udell, 1998; Burgstaller & Wagner, 2015; OECD, 2018) and particularly in Europe's bank-based economy (Demary et al., 2016). Longer-term bank debt may be aligned to more mature SMEs who have established track records and available collateral (Hall et al., 2004).

Coleman & Carsky (1999) argue that small US family-owned firms rely on commercial banks for credit, yet they assert that small family firms may be reluctant to rely on loans from a bank due to the collateral requirements. Slovenian family-owned SMEs are also found to use more bank loans due to strong banking relationships (Vadnjal & Glas, 2008). This may partly be explained by the low cost of this source for family firms (Chua et al., 2009). Portuguese family-owned SMEs prefer long-term debt in contrast to non-family firms (Serrasqueiro et al., 2011; Serrasqueiro et al., 2012) as is the case also of Swedish family firms (Mohamadi, 2012). Serrasqueiro et al., (2012) assert that there are a number of reasons why family firms prefer loans more than short-term credit lines from a bank, these include their long-term focus and determination to retain ownership of the firm, their reluctance to diversify their financing preferences from the more traditional sources of internal equity and external debt and easier access to longer-term loans in contrast to other SMEs. Ramalho et al. (2014) found that Portuguese family-owned SMEs are more likely to use long-term debt which they attest is likely due to the longer continuity and a more stable business in contrast to non-family firms. Despite the difficulties that private firms experienced in accessing bank debt, Crespí and Martín-Oliver, (2015) found that Spanish family firms were less impacted, especially for longer-term debt, compared to other firms. Díaz-Díaz et al., (2016) and Thiele & Wendt (2017) show how Spanish and German private family firms respectively have better access to

long-term bank debt and are better able to mitigate agency conflicts with lenders with fewer concerns over their long-term survival and reputation. More recently, Migliori et al., (2018) contend that Italian family firms' reliance on bank loans is due to the availability of collateral.

Yet more recently, Ntoung et al. (2020) assert that Spanish small and medium family firms are less likely to use debt financing and other forms of external finance than their non-family counterparts due to their risk aversion and control orientation. They assert that family firms are more conservative, are less risky and have internal reserves built up which in more difficult economic times they can rely on instead of resorting to external debt.

Despite this, there exists strong evidence in support of bank loan usage by family-owned SMEs (Vadnjal & Glas., 2008; Mohamadi, 2012; Serrasqueiro et al., 2012; Ramalho et al., 2014; Díaz-Díaz et al., 2016, Migliori et al., 2018). Hypothesis 4 is as follows:

*Hypothesis 4: European family-owned SMEs are more likely to use bank loans than non-family SMEs.*

#### **2.7.5 Trade Credit**

Trade Credit, also known as supplier finance, arises from credit terms offered by the supplier of the goods or services to the purchaser for a period, usually 30, 60 or 90 days<sup>11</sup>. The main features of this short-term credit facility are delayed payment terms, the buyer has ownership of goods immediately and no interest is payable if cleared within agreed time. Yet trade credit is not without a cost as these are incorporated in the purchase price terms and foregone discount for early payments.

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<sup>11</sup> The EC/ECB SAFE survey refers to trade credit as a 'means of paying your suppliers at the later agreed date, usually 30, 60 or 90 days after the delivery of the purchased goods or services'. (ECB, 2017).

Petersen & Rajan (1997) attest that smaller and younger SMEs rely more on less formal finance such as trade credit. Berger & Udell (1998) concur with the importance of trade credit over SMEs lifetime with older firms more likely to use this source (Klapper et al., 2012). Young and high growth exporting Canadian firms were found to rely more on trade credit to finance expansion (Riding et al., 2012) whilst European credit constrained SMEs are more likely to substitute trade credit for bank debt (Casey & O'Toole, 2014; Carbó-Valverde et al., 2016; Moritz et al., 2016; McGuinness et al., 2018). Nielen (2016) show how innovative SMEs in Europe use more on trade credit. Casey & O'Toole (2014) also found an industry effect in that SMEs in the services sector are less likely to use trade credit compared with SMEs in the industrial sector. Similarly, Moritz et al., (2016) and Masiak et al., (2017) in a pan-European context found that SMEs in the trade sector are more likely to rely on trade credit compared to SMEs in other sectors stemming from the lack of collateral and high working capital needs. Psillaki & Eleftheriou (2015) found a complementary effect between trade credit and bank debt in the case of French SMEs which concurs with Masiak et al. (2017) and Andrieu et al. (2018) studies of pan-European SMEs. German firms usage of trade credit did not increase during the crisis of 2007/2009 to compensate for the decline in bank credit, yet a substitution effect was found in the case of SMEs but not so for larger firms. (Lawrenz & Oberndorfer, 2018). More recently, Palacín-Sánchez et al., (2019) found that younger European SMEs in the manufacturing sector are compelled to rely more on trade credit due to difficulty accessing other financing in contrast to older firms.

Family-owned SMEs are shown to rely more on informal finance such as trade credit because collateral or information sharing is not required (Michaelas et al., 1999). Support for the collateral relevance is found by Poutziouris (2001) who found that family-owned SMEs in the UK prefer short-term trade credit. Bönte & Nielen (2011) attest that

European family-owned SMEs are more likely to rely on trade credit compared to sole owner firms, which they argue may be due to family firms close relationships with the community. The lack of long-term bank loan availability is also cited as a reason why Finnish family-owned SMEs are more likely to use trade credit (Lappalainen & Niskanen, 2013). Young and small European family firms are more likely to rely on trade credit in the absence of access to bank debt (Moritz et al., 2016). Similarly, Masiak et al., (2017) shows how younger (2-5 years) family firms in distressed European countries<sup>12</sup> rely more on trade credit. There is an industry effect in that young family-owned SMEs in the trade sector are likely to use more trade credit than young family SMEs in other sectors (Moritz et al., 2016; Masiak et al., 2017).

In summary, strong evidence is shown in support of the usage of trade credit by family-owned SMEs versus non-family SMEs due in part to collateral and easier to access trade credit than other finance sources. Hypothesis 5 suggests:

*Hypothesis 5: European family-owned SMEs are more likely to use trade credit than non-family SMEs.*

#### **2.7.6 Other Loans**

Establishing a new business usually entails seeking financial support from owners, family and friends in the form of debt or equity<sup>13</sup>. Family and friends may be the only source of start-up capital for firms (Romano et al., 2001; Chavis et al., 2011). This type of informal finance generally prevents the involvement of any outside interference or control over the business.

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<sup>12</sup> Distressed countries are Cyprus, Spain, Greece, Ireland, Italy, Portugal and Slovenia (Masiak et al., 2017).

<sup>13</sup> The EC/ECB in the SAFE survey refer to other loans as loans ‘for example, from family and friends, a related enterprise or shareholders, excluding trade credit’. (ECB, 2017).

Informal financing, typically from family and friends, is more important in the early stages of a firm's life-cycle. (Petersen & Rajan 1994; Berger & Udell 1998; Huyghebaert et al., 2007, Rupeika-Apoga & Saksonova 2018).

Petersen & Rajan (1997) concur that young family-owned SMEs place significant reliance on loans from friends and family in the early stages of firm growth (Romano et al., 2001; Chavis et al., 2011). Mohamadi (2012) shows how young Swedish family-owned SMEs use more internal sources of finance including finance from family and friends to fund their business than their non-family counterparts (Mohamadi, 2012). Equally, family-owned SMEs in Finland welcome additional equity finance from owners to safeguard control and independence (Lappalainen & Niskanen, 2013). Loans from friends and families may reduce a firm's willingness to take investment risks and dampen growth (Romano et al., 2001; Lee & Persson, 2016). Family firms display pronounced risk aversion in contrast to non-family firms (Poutziouris, 2001; Romano et al., 2001; López-Gracia & Sánchez-Andújar, 2007; Croci et al., 2011; Gonzalez et al., 2013; Schmid, 2013; Acedo-Ramírez et al., 2017). Consistent with the pecking order theory, SME family-owned firms are likely to rely on finance from family and friends in the early stages of growth and then turn to external debt with minimal desire to dilute ownership through external equity (Poutziouris, 2001; Lappalainen & Niskanen 2013; Ramalho et al., 2014).

In sum, the body of evidence points to the heightened likely usage of other loans by family-owned SMEs mainly due to their risk aversion orientation. Thus, Hypothesis 6 reads:

*Hypothesis 6: European family-owned SMEs are more likely to use other loans than non-family SMEs.*

### **2.7.7 Debt Securities**

This type of finance is used mainly by firms who are publicly traded businesses or by governments. Debt securities comprise either commercial paper which is short-term or longer-term corporate bonds and arise when firms provide buyers an opportunity to hold their paper for a period<sup>14</sup>. The buyers receive pre-arranged interest payments and upon maturity of the commercial paper the full principal is returned to the investor. This source of finance currently offers limited financing support in the SME space.

In summary, debt securities have been found to be of little relevance in the financing of SMEs (Moritz et al., 2016; Ferrando et al., 2017). The formation of the Capital Markets Union (CMU) plan (European Commission, 2019) aims to deliver a diverse range of finance sources, particularly for SMEs. Debt securities are likely to increase in significance for SMEs in the future. In the meantime, given the dearth of evidence of debt securities usage by SMEs and SME family-owned firms Hypothesis 7 proposes:

*Hypothesis 7: There is no difference in the use of debt securities between European family-owned SMEs and non-family SMEs.*

### **2.7.8 Equity Capital**

Equity capital means that a firm sells shares in its business<sup>15</sup>. Such a sale may take the form of private equity typically in a family-owned business but more broadly equity capital is the placement of shares of a firm on a public stock market. This latter type of equity finance is used by companies who are prepared to share ownership of the business with external investors through shares or stock. Investors usually hold common shares or

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<sup>14</sup> The EC/ECB in their SAFE survey refer to debt securities as ‘short-term commercial paper or longer-term corporate bonds issued by your enterprise’. (ECB, 2017).

<sup>15</sup> The EC/ECB in the SAFE survey refer to equity capital as ‘raising capital through the sale of shares in your enterprise. It is usually associated with the financing of companies listed on an exchange via public offerings. It can also involve a private sale, in which the transaction between investors and the enterprise takes place directly. Equity capital includes quoted and unquoted shares or other forms of equity provided by the owners themselves or by external investors, including venture capital or business angels’ (ECB, 2017).

stock although in some cases preferential shares are issued. The benefits for investors include the potential for the value of shares to increase, possible dividend payments and the ability to sell their holding on a stock market. On the downside if the business fails then shareholders may lose all their investment. Raising external equity capital is expensive involving stringent due diligence, reporting standards and loss of control. Venture capitalists or business angels provide private equity capital, generally to young innovative firms with high growth potential (Bellavitis et al., 2017). These high growth small firms are usually willing to forego some control to secure finance. While similarities exist between venture capital and business angels, there are some differences. Business angels are wealthy individuals, sometimes successful entrepreneurs, who invest their personal finances usually in early-stage businesses. A business angel may work closely with a firm by managing the fund and ensuring the company is developing in a progressive way (Bellavitis et al., 2017). These individuals choose to invest in high-potential companies in exchange for an equity stake. Because they invest their own money, they place great importance on the entrepreneur or firm, have the freedom to select an investment time frame and return on capital invested (Mason & Stark, 2004). These also have limited sums to invest. Venture capital normally comes from professional investors with larger sums to invest. Such capital usually comes from wealthy individuals, corporations or consortiums (Moritz et al., 2016; Masiak et al., 2017). Venture capitalists have more resources and expertise to assess a firm's suitability through careful screening and watertight contracts in the selection stage (Osnabrugge, 2000). Venture capitalists usually invest for a specific time frame, normally 10 years maximum, and tend to insist on having board representation (Mason & Stark, 2004).

Considerable evidence shows how both SMEs and privately held family firms are reluctant to use external equity capital because of their desire to maintain control

(Poutziouris, 2001; Romano et al., 2001; Cosh et al., 2009). Even in times of severe credit constraint Ferrando et al. (2017) attested that SMEs are unlikely to use equity capital. Bongini et al. (2019) assert that whilst many European countries recognise the potential of equity capital for SMEs to-date this opportunity remains unfulfilled. They further elaborate that the macroeconomic environment and institutional settings in countries may lessen the likelihood of SMEs accessing equity capital (Bongini et al., 2019).

Poutziouris (2001) posit that venture capital is not a preferred source of finance for family-owned SMEs in the UK citing the reluctance to cede control as the key reason. Vadjnal & Glas (2008) show how Slovenian family-owned SMEs are opposed to external equity investment as a source of finance but are more likely to use more equity from their owners than non-family-owned SMEs. Croci et al. (2011) attests that publicly listed family firms in 12 European countries are unlikely to use equity capital for fear of diluting control. Equally, Keasey et al. (2015) found that family block holders of young publicly listed firms in Europe are also unwilling to dilute control by issuing equity capital.

In sum, there exists a body of evidence that equity capital is not a preferred source of finance for family-owned SMEs. Hypothesis 8 proposes:

*Hypothesis 8: European family-owned SMEs are less likely to use equity capital than non-family SMEs.*

#### **2.7.9 Leasing and Hire Purchase**

Leasing is a contractual agreement where the borrower (the ‘lessee’) rents a fixed asset from the lender (the ‘lessor’) to use the asset for a certain period in exchange for a specified leasing fee (Landström, 2017).<sup>16</sup> The leasing contract may or may not have a

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<sup>16</sup> The EC/ECB SAFE survey use the term leasing and hire purchase interchangeably as ‘obtaining the use of a fixed asset (for example, cars or machinery) in exchange for regular payments, but without the immediate ownership of the asset’ (ECB, 2017).

purchase option at the end of the lease against a pre-agreed purchase price. Hire Purchase agreements also facilitate the usage of the asset for a fee over a given period and are akin to instalment purchase with ownership of the asset passing to the hirer on payment of the last instalment (Ward, 2010). Both leasing and hire purchase suit asset investment such as plant and machinery.

Leasing and hire-purchase are asset-based sources of finance where there is no need for additional collateral backing (Poutziouris, 2001). The credit worthiness and credit history of firms is less important which leads to greater use of these sources in the SME sector (Berger & Udell, 2006; Deloof et al., 2007; Casey & O'Toole, 2014). Moreover, it provides access to the use of a fixed asset not necessarily its ownership. Harc et al., (2017) shows how Croatia SMEs use more leasing and HP compared with more established EU countries. The reason they suggest is due to variations in the institutional and lending environment in that banks appear reluctant to provide finance in some economies making it easier for firms to access to leasing and HP, without the need for additional collateral (Harc et al., 2017). Masiak et al., (2017) found that SMEs in the services sector rely more on leasing and hire purchase primarily due to the lack of tangible assets to secure bank finance, which suggests an industry effect.

Family-owned SMEs in the UK rely on short-term finance such as leasing and hire purchase (Poutziouris, 2001). Similarly, Lappalainen & Niskanen, (2013) find that Finnish family-owned SMEs are more likely to use leasing and HP than their non-family counterparts. The reasons cited in both studies are twofold, firstly, the age effect is significant as younger family firms lack collateral and may have to wait to access other sources of debt until the firm has generated some assets to collateralise (Berger & Udell, 1998) and secondly, they may have difficulty sourcing longer term bank finance. Moritz

et al., (2016) analysis of European SMEs shows how younger family-owned firms rely more on leasing as a source of finance compared to their older counterparts.

In summary, there is strong evidence to support the preference for leasing and hire purchase by family-owned SMEs, especially younger firms. Given this evidence Hypothesis 9 is:

*Hypothesis 9: European family-owned SMEs are more likely to use leasing and hire purchase than non-family SMEs.*

#### **2.7.10 Factoring**

Factoring is designed to support the working capital needs of a firm and involves a factor purchasing the firm's accounts receivable usually for a period such as 30 days or 60 days.<sup>17</sup> This type of finance aims to alleviate short-term cash flow constraints by providing a business with finance upfront (Ward, 2010). The beneficiary firm, on receipt of the upfront payment, then passes all sales invoices to the factoring company who takes over responsibility and the risk of collecting the monies in full. Factoring, which is not a loan per se, is based on the reputation and credit worthiness of the firms particularly the quality of the accounts' receivable purchased. It is a revolving facility and can increase in tandem with a firm's sales. This type of finance can be costly due to the level of discount charged by the factor on the face value of the accounts receivable or invoices.

The importance of factoring differs across countries (Berger & Udell, 2006) due to variations in the institutional setting and lending environment. Soufani (2002) finds in UK firms (public and private) how factoring is more prevalent among younger firms in the industrial sector due to these firms experiencing financial difficulties. Moreover, factoring can mitigate issues of information asymmetry particularly in countries with poor

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<sup>17</sup> The EC/ECB in its SAFE survey define factoring as 'selling your invoices to a factoring company; this company gets your debt and has to collect it; it will make a profit by paying you less cash than the face value of the invoice' (ECB, 2017).

creditor information sharing (Klapper, 2006). Higher growth and more innovative SMEs are more likely to use a broad range of financing sources including factoring (Moritz et al., 2016). More recently, Mol Gómez-Vázquez et al., (2018) found that European SMEs are more likely to use factoring in countries with poor creditor protection rights and high enforcement costs. Yet, small Italian family-owned firms display limited use of factoring due to the lack of need for this source (Di Giuli et al., 2011). Earlier, Poutziouris (2001) found that UK family-owned SMEs, who have little if any fixed assets to collateralise, use more short-term finance such as factoring due to heightened risk associated with long-term debt. Lappalainen & Niskanen (2013) Finnish study show how family-owned SMEs are more likely to use factoring than their non-family counterparts, due to difficulty in accessing long-term bank loans. The assertion is that access to long-term bank loans is less likely due to a lack of collateralizable assets. Thus, evidence supports the likely reliance on short-term debt, such as factoring, by family-owned SMEs. Hypothesis 10 reads:

*Hypothesis 10: European family-owned SMEs are more likely to use factoring than European non-family SMEs.*

#### **2.7.11 Other Sources**

These forms of finance include those that are relatively new and offer firms the opportunity to raise finance without involving a traditional bank. In the ECB's SAFE survey questionnaire other sources of finance<sup>18</sup> include subordinated debt instruments, participating loans, peer-to-peer lending, and crowdfunding (ECB, 2017). Firstly,

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<sup>18</sup> The EC/ECB SAFE survey describes other sources of finance as ‘for example, subordinated debt instruments, participating loans, peer-to-peer lending, and crowdfunding. Subordinated debt is repayable only after other debts have been satisfied. A participating loan gives the lender the right to convert the loan into an ownership or equity interest in the company under specified clauses and conditions. Peer-to-peer lending consists of lending money to an unrelated individual or enterprise without a traditional financial intermediary, usually via dedicated online lending portals. Crowdfunding involves raising monetary contributions from a large number of people, typically via the internet’ (ECB, 2017).

subordinated debt instruments simply mean that such finance can only be repaid after other loans/debts of a business are repaid or considerably reduced. Participating loans on the other hand offer a means for very large firms to involve multiple lenders in financing a project or indeed the business. Peer-to-peer loans are a form of borrowing from individuals usually facilitated by an intermediary between the firm and the individual/s.

Lastly, the most popular other source of financing is crowdfunding. In the ever-growing digital world, the opportunities to raise capital through crowdfunding continue to develop. Established in the US the concept and usage of crowdfunding has spread to European countries in the last 10/12 years (Moritz et al., 2016). Crowdfunding is the sourcing of small amounts of finance from many investors through the internet (Landström, 2017). Landström (2017) claim such funding can be debt based, equity based, donation based or lastly buy-based. Debt based crowdfunding provides the investor with interest and a capital repayment. Equity crowdfunding offers the opportunity for capital appreciation and dividends. Crowdfunding by way of donation provides a reward or recognition to the investor. New projects, particularly in emerging technologies and film, promote and amass funds through crowdfunding to develop the project further ultimately aiming to launch on the market. The total European online alternative finance market, including crowdfunding and peer-to-peer lending increased by over 41% to €7,671m in 2016 (Cambridge Centre for Alternative Finance, 2018). France, Germany and the Netherlands are the dominant users of crowdfunding in Europe after the UK which is the largest user. Crowdfunding and peer to peer lending are the main alternative sources of finance accounting for circa 87% of the European market volume in 2016 (Cambridge Centre for Alternative Finance, 2018).

Crowdfunding and other alternative finance sources may be a valuable option compared with more traditional bank borrowing. (Rossi, 2014). Indeed, crowdfunding and other

financial technology innovations (Fintechs) are a strong financing growth option for SMEs in Europe albeit still representing a very small share of the credit markets (Cambridge Centre for Alternative Finance, 2018). Yet, Gierczak et al. (2015) assert that many hurdles need to be scaled before these sources present a viable alternative for SMEs. These include a robust understanding of the alternative finance options, usage and purpose, the conditions and risks attached, and the costs involved. In a similar vein Rupeika-Apoga & Saksonova (2018) point to the fragmented nature of the alternative financing providers in the Baltic States compromising the development of this market for SMEs. Moscalu et al., (2019) assert that while other sources of finance are a growth area for European SMEs, currently they are relatively small providers of finance and banks continue as the main providers of external finance. In summary, there is evidence to support the growing use of other sources by SMEs, yet they provide limited financing support to this cohort and even more so to European family-owned SMEs due to their traditional approach. This leads to Hypothesis 11:

*Hypothesis 11: There is no difference in the use of other sources between European family-owned SMEs and non-family SMEs.*

#### **2.7.12 Summary**

This section has demonstrated the range of financing mechanisms used by SMEs and SME family-owned firms which led to the development of eleven hypotheses<sup>19</sup> to analyse research question one. Evidence was shown of the impact of several capital structure theories, notably agency theory, pecking order theory and financial life cycle, on the financing of family-owned SMEs. Indeed, repeatedly the heightened risk-averse nature and control motivation of this cohort resulted in family-owned SMEs placing greater

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<sup>19</sup> Hypotheses testing, which adds validity to the study, is commonly used in the field of SME credit availability (Berger et al., 2001; Hall et al., 2004; Psillaki & Daskalakis, 2009) and in SME family firm financing studies (Burgstaller & Wagner, 2015; Crespí & Martín-Oliver, 2015).

reliance on retained earnings, government grants and subsidised bank loans, bank debt, trade credit, other loans, leasing & hire purchase and factoring compared to other SMEs. Moreover, the empirical evidence suggested that family-owned SMEs do not favour equity capital, debt securities and other sources to meet their financing needs.

The next section outlines empirical evidence of SME access to finance and the hypotheses for research question two.

## **2.8 Access to finance**

This section discusses credit constraint theory in the context of SME finance availability, and the likelihood of firms making applications for finance credit rationing. The likelihood of credit rationing is explored in terms of the likelihood of a firm making an application for finance; actually needing the finance; being discouraged from applying for fear of rejection, being unrationed i.e., receiving everything sought; experiencing strong rationing i.e. being fully rejected; suffering weak rationing i.e. being approved for some of the finance sought and finally an SME deciding to self-ration for cost reasons.

### **2.8.1 SME Finance Availability**

It is widely accepted that the availability of and access to finance is necessary for firms to sustain and grow. Access to and the cost of finance is deemed one of the most inhibiting factors for SMEs (Artola & Genre, 2011; Daskalakis et al., 2013; Casey & O'Toole, 2014; Holton et al., 2014; Moritz et al., 2016). Credit constraint or credit rationing is considered a limitation or restriction (refer section 2.3.5 earlier). Constraint in access to finance has been defined by Kaplan and Zingales (1997) as firms who face a difference between the internal and external cost of funds. Furthermore, Kaplan & Zingales, (1997) debate the causes as possibly the result of information problems (Myers & Majluf, 1984) or agency problems (Jensen & Meckling, 1976). Credit rationing can manifest in two ways. Firstly, credit suppliers' by not granting finance or imposing onerous terms and conditions can

cause financing restrictions, referred to as credit rationing. Secondly, firms may self-select themselves out by not applying for external finance, referred to as discouraged borrowers (Hashi & Toci 2010; Freel et al., 2012; Mac an Bhaird et al., 2016). Furthermore, firms' perception of the availability of finance can also influence discouragement levels (Canton et al., 2013).

SME owners often make financial decisions based on the impact it will have on their personal wealth (Ang, 1992). Agency cost fears arise and thus the expected provision of finance is likely to be restricted. Ang (1992) highlights that firm ownership, particularly family ownership, may lead to the avoidance of external finance. Brav (2009) further posits that ownership of the firm has a dramatic effect on types of finance used. The very nature of a small private firm makes access to certain forms of finance more expensive (Brav, 2009).

The availability of credit is influenced by the provider's view of the recipient firm. Thus, information asymmetry is key, where either an incomplete or blank picture of the firm affects a lenders potential to extend credit. Debt is the most popular external financing source for small firms (Berger & Udell, 1998; Brav, 2009, Kremp & Sevestre, 2013; Ferrando et al., 2017). Large firms have more bank finance available (Cull et al., 2006) facilitated by the alleviation of information asymmetry and agency cost issues. Relationship lending can bridge this gap for smaller firms (Berger & Udell, 1995, Ferri et al., 2020). Thus, family firms may have advantages over other firms given their close ties to the community and with lenders.

Drawing upon the pan-European SAFE dataset, Ferrando & Mulier (2015a) expand on some characteristics which impact both real and perceived constraints on SMEs access to finance. Firstly, firm specific factors are important in explaining financial constraints in

Europe (Artola & Genre, 2011). Younger and smaller firms have a greater likelihood of experiencing financial constraint compared to older and bigger SMEs (McCarthy et al., 2017). Firm age and profitability have a direct effect on the availability of internal finance (Abdulsaleh & Worthington, 2013) as it takes time and profits to build internal reserves. Access to debt and its availability to firms is not solely based on firm size, but the underlying and previously discussed information asymmetries that characterise smaller firms (Ennew & Binks, 1995). Venture capital and business angels are representative of ‘size-threshold’ financing (Ennew & Binks, 1995). While firm size is a common explanatory factor regarding firms’ ability to access finance, evidence exists of the co-relationship between firm size, firm age and sector. The demand for finance is perceived as lower in the services sectors which is dominated by small firms (Cressy & Olofsson, 1997; Westhead & Storey, 1997). Furthermore, firms who lack collateralizable assets or are investing in R&D i.e., innovative firms are found to experience financial constraint (Hashi & Toci, 2010; Mac an Bhaird & Lucey, 2010).

Secondly, macro-economic issues and country-specific factors are attested as significant contributors to SME access to finance (Mac an Bhaird et al., 2016). Some countries in Europe suffered significantly greater financing constraint than others at the time of the 2007/2009 crisis, such as Spain in contrast to France who was less impacted. Both Spanish solely owned firms and family-owned SMEs are found to have difficulty accessing finance (Artola & Genre, 2011). Popov (2013) contend that lenient monetary conditions increase the availability of bank credit. Economic volatility also leads to other issues including the banking sector’s appetite to supply credit in a riskier environment (Kishan & Opiela, 2000; Jiménez et al., 2012). Holton et al. (2014) assert that weakness in a country’s real economy impacts both the supply side and the demand side for bank finance. Increased bank funding costs (Öztürk & Mrkaic, 2014) and bank portfolio

adjustments due to sovereign stress to their balance sheets (Duygan-Bump et al., 2015; Popov & Van Horen, 2015) results in greatly reduced supply of bank finance (Ferrando et al., 2017).

Crespí & Martin-Oliver (2015) assert that unlisted Spanish family-owned firms during times of crisis have better access to finance due to their long-term orientation. Pindado et al. (2015) contend that for European publicly listed firms access to bank finance is easier for family firms given their long-term goals and alleviation of agency problems with lenders. Earlier, Bopaiah (1998) illustrate how small US family firms have easier access to bank finance as they are considered less risky by lenders in contrast to non-family firms. Italian family firms (mainly micro and small) are not found to have any less access to bank finance compared to their non-family-owned cohorts (Ferri et al., 2020).

In sum, it is evident that many factors impact the likely availability of finance for firms. This is more pronounced for SMEs who are dependent on bank finance (Berger & Udell, 1998; Beck et al., 2008a; Burgstaller & Wagner, 2015). The reliance by SMEs on bank credit means that they are more vulnerable in periods of economic downturn (Vos et al., 2007; Carbó-Valverde et al., 2009; Cieply & Dejardin, 2010; Mac an Bhaird, 2013; Ferrando & Mulier, 2013; Andries et al., 2016). Given that family-owned SMEs are more likely to rely on bank finance than non-family SMEs ((Poutziouris, 2001; Romano et al., 2001; Croci et al., 2011; Koropp et al., 2013; Ramalho et al., 2014; Burgstaller & Wagner, 2015) this cohort may be more vulnerable to economic downturns. On the other hand, family-owned SMEs may have easier access to finance due to their long-term outlook and the less risky perception of lenders (Crespí & Martin-Oliver, 2015; Ferri et al., 2020).

### **2.8.2 Application likelihood**

Prior studies attest that family-owned firms use different sources of finance in contrast to their non-family counterparts, which is probably a signal of their likelihood of applying for such finance.

Freel et al. (2012) for UK SMEs found that few loan applications from small firms are rejected, which they suggest is due to more than twice as many of these firms not applying for bank finance for fear of rejection. They also attest that family-owned SMEs are not rationed any more than other SMEs. (Freel et al., 2012). Mac an Bhaird (2010b) illustrates that the age and size of an Irish SME are the factors that determine the successful outcome of their applications for bank finance. In Europe small firms are less likely to apply for a bank loan compared to medium sized SMEs and are forced to rely on internal funds to undertake investments (Hashi & Toci, 2010). European SMEs who apply for bank credit lines and bank loans are more likely to also apply for other financing sources, notably trade credit (Casey & O'Toole, 2014). Lee et al. (2015) attribute the greater likelihood of an application more to innovative SMEs in the UK than to non-innovative SMEs, while also noting that the application outcomes are more likely to be declined for innovators. European SMEs in distressed countries<sup>20</sup> are less likely to apply for bank finance for fear of rejection than their counterparts in non-distressed economies (Andries et al., 2016). Australian SMEs who are deemed innovative and those who are exporters are less likely to apply for bank finance but have a greater likelihood of receiving everything sought in contrast to non-innovative firms (McCarthy et al., 2017).

Family firms have unique characteristics such as their governance structure and long-term orientation which can mitigate agency problems (Xiang et al., 2020). These arguments also hold for family-owned SMEs. Earlier, Anderson & Reeb (2003b) contend that the

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<sup>20</sup> Andries et al., (2016) describe stressed countries as Portugal, Ireland, Italy, Greece and Spain.

heightened risk avoidance attitude of family firms reduces the likelihood of credit default. Family-owned firms in Italy are more likely to apply for bank credit (all sizes including SMEs) compared to non-family firms (D'Aurizio et al., 2015), due to fewer agency problems between family firms and banks. European family firms (publicly owned) are more likely to apply for bank finance as they are willing to pledge more family related collateral (Keasey et al., 2015).

In sum, while there is a dearth of literature on the likelihood of family-owned SMEs applying for credit, there is evidence to support the critical role of applications for bank finance as a means of accessing credit by SMEs and family-owned SMEs.

#### **2.8.3      Need the finance likelihood**

Chittenden et al., (1996) and Hall et al. (2004) attest that retained earnings are more prevalent in profitable and older SMEs thus younger firms need more finance, notably bank debt, to survive and grow. Similar assertions that mature firms have had more time to accumulate such funds are more likely to use retained earnings (López-Gracia & Sánchez-Andújar, 2007; Mac an Bhaird & Lucey, 2010; Palacín-Sánchez et al., 2013).

Smaller firms rely more on short-term bank credit (Chittenden et al., 1996; Berger & Udell 1998; Beck et al. 2008a). Similarly, younger SMEs are found to avail only of shorter-term bank finance mainly due to information asymmetries (Degryse et al. 2012; Moritz et al., 2016) albeit that they prefer a long-term bank loan.

SMEs in less developed countries in Eastern Europe are more likely to need bank finance, notably those firms over 10 years of age, in contrast to similar firms in Western Europe (Brown et al., 2011). They suggest that younger and smaller firms either rely more on internal resources or have fewer investment opportunities (Brown et al., 2011).

Exporters and innovators need more finance, particularly bank debt to finance their larger working capital and investment needs (Brown et al., 2011; Lee et al., 2015; Maes et al., (2019).

Coleman & Carsky (1999) find a large proportion of US family-owned SMEs need finance from commercial banks, particularly short-term bank credit. Lappalainen & Niskanen (2013) results for Finnish family-owned SMEs also need bank finance so as to safeguard control and independence.

This control motivation was also found in the case small Canadian family firms by Wu et al. (2007) who contend that these firms are reluctant to use any form of equity financing and as such have a greater need for debt, specifically bank finance. This reluctance to issue equity may lead to family firms being more heavily leveraged.

In summary, evidence exists that SMEs need external finance, notably bank debt, to survive and grow. This need is more pronounced in the case of family-owned SMEs who display more pronounced traits of risk aversion and control retention.

#### **2.8.4 Discouraged likelihood**

Discouraged borrowers are those who did not apply for fear of possible rejection. In a theoretical study of SME finance by Kon & Storey (2003) a discouraged borrower is defined as a credit worthy firm who did not apply for bank finance for fear of being rejected.

Levenson & Willard (2000) in the case of US small firms found that more than twice as many are discouraged from applying for bank finance as those who had their application rejected. Freel et al. (2012), concur with Levenson & Willard (2000) regarding UK SMEs, illustrating that twice as many firms were discouraged from applying compared with those firms who had applications rejected. Young French firms, notably those who are

innovative, are more likely to be discouraged from applying to banks rather than experiencing weak or strong credit rationing (Cieply & Dejardin, 2010). Similar discouragement findings are asserted by Hashi & Toci (2010) for small SMEs in South Eastern Europe. Again, in a European setting, Brown et al. (2011) argue that while many of the firms discouraged from applying for finance would be refused by a bank, they contend that a greater number are more likely to be supported for this source. They also found that the higher the level of taxation in a country the greater the likelihood of firm discouragement (Brown et al., 2011).

Family-owned SMEs are found to be less discouraged from applying for bank finance due to their conservative approach and greater need for external bank debt, than their non-family counterparts (Freel et al., 2012). Moreover, as the age and size of a firm increases discouragement lessens, while sector is also shown to influence discouragement levels of UK SMEs (Freel et al., 2012).

Ferrando & Mulier (2015a) attest for European firms (large firms and SMEs) that the small firm cohort chose not to apply for bank finance for fear of rejection. Firm level factors impact borrower discouragement for applying for bank finance for European SMEs, particularly firm age and firm size (Mac an Bhaird et al., 2016; Drakos & Giannakopoulos, 2018). Moreover, the regulatory environment is shown to affect SME discouragement (Mac an Bhaird et al., 2016). European SMEs in the distressed countries have a higher probability of not applying for bank loans compared to firms in non-stressed economies (Andries et al., 2016). Notably, Ireland and Greece reported the highest level of non-application for bank finance for fear of rejection (Andries et al., 2016).

Ferrando et al. (2017) European SME study illustrates how the effects of the sovereign crisis, which unfolded in 2010, affected the supply of bank credit resulting in firms in

distressed countries being more likely to experience discouragement or constraint by a bank. Even SMEs with good credit history in distressed countries were more likely to be discouraged from applying compared with their counterparts in non-stressed countries (Ferrando et al., 2017). This suggests no evidence of a flight to quality by banks.

In contrast, Kremp & Sevestre (2013) found only a very small proportion of French SMEs were discouraged from applying for bank finance. Yet, they attest small and young firms are more credit rationed than other French SMEs.

In sum, there is some evidence to support the prevalence of borrower discouragement amongst SMEs in general, albeit less pronounced in family firms.

#### **2.8.5 Unrationed likelihood**

An unrationed firm is one who applied for a given source of finance and has not been rationed or denied in any way by the credit provider. Mac an Bhaird (2013) assert that the likelihood of success in being granted bank finance for Irish SMEs is mainly due to the size and age of firms. Freel et al. (2012) also found for UK SMEs that as firms' age and firm size increases the likelihood of receiving bank finance is enhanced. Ferrando & Mulier (2013) show that more profitable firms in Europe (mainly SMEs) are less likely to experience financing constraint. On the other hand, they illustrate how those firms more reliant on short-term debt may be more constrained due to renewal of this source on an annual basis (Ferrando & Mulier, 2013). Spanish SMEs who are unconstrained for bank loans do not rely on trade credit to finance their firm (Carbó-Valverde et al., 2016), in contrast to those who are constrained substitute trade credit for the lack of availability of bank finance.

Some studies point to the influence of country specific factors in increasing the availability of finance, notably from banks. These include greater sharing of credit

information (Jappelli & Pagano, 2002; Mc Namara et al., 2020). Mc Namara et al. (2017) assert that a more efficient bankruptcy environment combined with a less stringent regulatory banking environment are conducive to greater credit availability for European SMEs. In addition, Moro et al. (2018) and Mc Namara et al. (2017) found that efficient judicial systems reduce the likelihood of European firms (mainly SMEs) being rationed in any way.

Little evidence is found for the likelihood of family-owned firms being unrationed, particularly family-owned SMEs. Bopaiah (1998) show how small family firms in the US that have easier access to bank finance than non-family firms likely due to being perceived as less risky by lenders.

Pindado et al. (2011) illustrate how publicly quoted family firms in Europe are less likely to be financially constrained due to their governance structure in contrast to non-family firms. In a later paper, they assert that these firms have easier access to bank finance in contrast to other European publicly quoted firms due to the long-term orientation and lower risk nature of family firms (Pindado et al., 2015). Italian family firms (mainly micro and small) do not experience greater bank financing constraint compared to non-family firms (Ferri et al., 2020).

In summary, the age, size and profitability of SMEs are important determinants of a firm's access to bank credit. Whilst there is a scarcity of evidence for family-owned SMEs, they do, however, appear to be less likely to experience constraint by a bank.

#### **2.8.6     Strong Rationing likelihood**

Strong rationed firms are those firms who were wholly rejected by credit providers (Ferrando et al., 2017<sup>21</sup>; Mc Namara et al., 2020).

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<sup>21</sup> Ferrando et al., (2017) use 'credit denied' in place of rejected.

Small and young SMEs are more likely to be credit rationed than other SMEs in the case of France (Kremp & Sevestre, 2013), in Portugal (Farinha & Felix, 2015) and for European SMEs (Hashi & Toci, 2010; Andries et al., 2016; Moro et al., 2018). Yet, only a minor proportion of bank loans are rejected for small firms in the UK (Freel et al., 2012) as many of these firms do not apply for fear of rejection. Casey & O'Toole (2014) found that European SMEs rejected for bank finance substitute the gap with trade credit, and do not turn to market finance (debt securities, subordinated debt and equity capital). Carbó-Valverde et al., (2016) also found that Spanish credit constrained SMEs substituted trade credit for bank finance, yet unconstrained SMEs continued to rely on bank debt.

Other factors impact the likelihood of strong credit rationing including firm sector, level of innovation and the country setting. Farinha & Felix (2015) illustrate how SMEs in Portugal in the construction and trade sectors are more likely to be credit denied. In the case of small US firms, Duygan-Bump et al. (2015) found that small firms in sectors dependent on external bank finance are more likely to have higher unemployment levels than larger firms in similar sectors. The bank finance dependent sectors are manufacturing/industry where shocks to the banking sector has been shown to seriously impact the labour market (Duygan-Bump et al., 2015). Lee et al. (2015) illustrate how innovative SMEs in the UK are more likely to be credit denied than other SMEs. European SMEs in distressed economies are found more likely to be rejected for bank finance than SMEs in non-distressed countries (Andries et al., 2016; Ferrando et al., 2017).

Large firms are found to fare much better (circa 1%) than SMEs (circa 6%) for bank loan rejection rates (European Commission, 2017). Moreover, within the SME space, Ghulam (2019) found that young and small SMEs in Europe are more likely to have their bank application rejected, particularly those in the construction sector. Any reduction in government subsidies increases the likelihood of rejection (Ghulam, 2019). Gómez

(2019) concentrates on European SMEs illustrating how credit constrained firms result in these firms having little investment in fixed assets and few growth opportunities. This European study also found that bank financial constraint has a negative impact on SMEs, particularly family firms and sole owners (Gómez, 2019). Unlike the earlier findings of Casey & O'Toole (2014) and Carbó-Valverde et al., (2016) of the substitution of trade credit for constraint in bank finance, Gómez (2019) attests that SMEs who are rationed for bank finance are unlikely to replace the finance gap with other finance sources due to a lack of credit worthiness. Mc Namara et al. (2020) in their study employing the lending infrastructure illustrate how a less stringent bank regulatory environment increases the likelihood of strong rationing for European SMEs. They also attest that SMEs are more likely to be credit rationed in countries where there is less sharing of credit information, less efficient judicial systems, greater protection of legal rights and a more robust bankruptcy system (Mc Namara et al., 2020).

Italian family firms in the manufacturing sector are more likely to be credit rationed than other firms (Murro & Peruzzi, 2019). Later, Ferri et al. (2020) Italian firm study found no evidence of greater bank credit rationing of family firms compared with other firms (all size firms). Moreover, they found that lending technologies play an important role in determining firms' access to credit. Credit rationing can be alleviated by relationship banking and heightened by transactional banking (Ferri et al., 2020).

In summary, many factors play a key role in the likelihood of strong rationing of bank finance. Firm-level factors, age, size, sector and profitability of SMEs and family-owned firms, are important, so too are country factors.

### **2.8.7 Weak Rationing likelihood**

Weak credit rationed firms had their application for finance approved in part but not wholly (Cieply & Dejardin, 2010; Drakos & Giannakopoulos, 2018; Mc Namara et al., 2020).

Farinha & Felix (2015) found that 15% of Portuguese SMEs with bank loans were partially rationed. In Bulgaria, Kirschenmann (2016) show how small firms are more likely to receive only some of the credit sought from their bank due to information asymmetries, yet this lessens over time as these firms build lender relationships. Credit rationed European SMEs are more likely to be smaller and younger, including sole owners (Demoussis et al., 2017). Similarly, Andries et al. (2018) in the case of European SMEs illustrate how small firms are more credit rationed than larger firms who are perceived as less risky.

Demoussis et al. (2017) attest that European SMEs from countries impacted by the sovereign debt crisis are more likely to be credit rationed by their bank. They also assert that firms in the construction sector are more likely to experience bank rationing than other sectors (Demoussis et al., 2017).

Murro & Peruzzi (2019) contend that manufacturing sector Italian family firms are more likely to experience weak credit rationing<sup>22</sup> in contrast to their non-family-owned counterparts. This effect is more pronounced in those family firms with higher ownership concentration.

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<sup>22</sup> Murro & Peruzzi (2019) define weak rationing as a firm's positive response to either of, but not both parts of the question "In the last year, would the firm have liked to obtain more credit at the market interest rate?"; (ii) "In the last year, did the firm demand more credit than it actually obtained? " (Source: Survey on Italian Manufacturing Firms).

In sum, little evidence of weak credit rationing is found for family-owned SMEs. The evidence does suggest, however, that European SMEs particularly small and young firms are more likely to experience weak rationing by credit providers, notably by banks.

#### **2.8.8 Self-Rationing likelihood**

A self-rationed firm has not been rejected by the financial institution but has not taken up the credit offered primarily due to cost considerations (Mc Namara et al., 2020). The OECD Report (2018) assert that the interest rate charged to SMEs in 2016 was circa 33% higher in contrast to the rate applied to loans for large firms.

European SMEs who self-ration a bank loan for cost reasons are unlikely to apply for grants or subsidised bank loans (Casey & O'Toole, 2014). They also contend that these firms are more likely to rely on informal finance, such as loans from shareholders or related companies and alternative finance (non-bank loans, factoring, debt, equity or leasing). More recently, Andries et al. (2016) provides evidence that European SMEs are more likely to have their applications for bank loans rejected or firms refuse the loan due to high costs<sup>23</sup>. Equally, Ferrando et al. (2017) found that SMEs in the distressed countries are more likely to refuse bank loans due to their high costs compared to other European countries. These firms are found to rely more on internal resources and grants/subsidised bank loans to replace the lack of bank debt due to the prohibitive cost (Ferrando et al., 2017).

In sum, while no evidence of the likelihood of a family-owned SME self-rationing was found, overall, there is some evidence to suggest that SMEs are more likely to reject bank finance for cost reasons.

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<sup>23</sup> Andries et al., (2016) Financing constraint measurement - a firm who applied for a bank loan but was rejected and if the firm applied for a bank loan but refused it due to high costs of financing.

## **2.9 Sources of Finance, Credit Constraint & Hypotheses RQ2**

In this section the sources of finance for SMEs are reviewed, with emphasis on bank financing. Then, empirical evidence of their relevance for SMEs and privately-owned family firms is provided in the context of evidence of any credit constraint or discouragement, which enable the development of suitable hypotheses to address research question two.

### **2.9.1 Bank Credit Lines, Overdrafts and Credit Cards**

Credit lines, overdrafts, and credit cards, as illustrated earlier, are categorised as flexible, short-term forms of bank finance. Credit lines, also known as stocking loans or seasonal working capital sources, are pre-arranged bank loans where the borrower can use some or all the facility for a specific short-term purpose and only pay interest on the amount drawn down (Ward, 2010). Bank overdrafts and credit cards provide the borrower with an approved limit. Thus, the borrower has the use of bank debt, subject to operating within this approved limit. The latter two bank products are generally used for the day-to-day financing needs of a firm – bank overdrafts provide the necessary finance to meet the ongoing needs of a firm such as wages, fuel light and heat. Credit cards are associated with many small purchases such as postage and fuel.

Banks are found to be the main source of external finance for SMEs across countries (Jimenez et al., 2012; Mac an Bhaird, 2013). In Germany bank overdrafts play an important role for family-owned firms (large firms and SMEs) as compared with non-family firms (Schäfer et al., 2017).

Hashi & Toci (2010) found that small firms in South Eastern Europe rely more on internal finance as these firms experience heightened constraint in obtaining short-term bank financing. High collateral requirements limit small firms' access to finance, due to their lack of such

collateral, thus impeding their growth prospects (Hashi & Toci 2010). In another European study Ferrando & Mulier (2013) show how SMEs during the financial crisis increased their reliance on trade credit to compensate for the sharp contraction and decline in the availability of short-term bank financing. In a similar vein, McGuinness & Hogan (2014) found that Irish SMEs in times of credit shortages are more likely to use trade credit due to the lack of short-term bank finance. They established that financially vulnerable SMEs, who had difficulty renewing their short-term bank financing, substituted the gap with trade credit. This concurs with Casey & O'Toole (2014) findings for European SMEs who need working capital, increased their usage of trade credit. In terms of firm age, Chavis et al. (2011) highlight that young firms' difficulties in accessing bank financing is often due to information asymmetry. Ferrando & Mulier (2015a) illustrate how younger SME firms in Europe are more likely to experience financing constraint, especially those with more short-term debt, due to low profitability.

Crespí & Martin-Oliver (2015) illustrate how unlisted Spanish family-owned firms during times of crisis suffer fewer external financing constraints likely due to their long-term goals and better relationships with lenders. Yet for family-owned Italian SMEs Peruzzi (2015) found that such firms are more likely to have difficulty accessing bank credit which they attest may be as a result of internal agency conflicts within family-owned firms. Again, in the case of Italian medium-sized family-owned SMEs, in the manufacturing sector, Migliori et al. (2018) find that such firms have easier access to bank credit due to less information asymmetry issues and stronger lender relationships.

In summary, based on the body of evidence largely affirms that family-owned SMEs are likely to experience less bank credit line constraint in contrast to other SMEs due to long-term goals, Hypothesis 12 proposes:

*Hypothesis 12: European family-owned SMEs are less likely to be credit constrained for bank credit lines in contrast to non-family SMEs.*

### **2.9.2 Bank Loans**

As outlined earlier and summarised here, bank loans are a loan facility for a fixed sum and fixed repayment date. Lenders offer bank loans for capital expenditure or expansion purposes. The terms and conditions of bank loans usually include the provision of collateral and an interest rate appropriate the risk period associated with longer term finance.

Banks are the main providers of external finance for SMEs (Beck et al., 2008a). Yet this heavy dependence on bank finance leaves SMEs particularly vulnerable to the effects of credit crunch in times of economic crisis (Vos et al., 2007; Carbó-Valverde et al., 2009; Mac an Bhaird, 2013; Ferrando & Mulier, 2013; Andries et al., 2016). In South East Europe, Hashi & Toci (2010) found that small firms rely more on internal finance as these firms experience heightened constraint in obtaining long-term bank financing. Furthermore, they illustrate how small firms are either more likely to be refused bank finance or are more discouraged than medium or large firms (Hashi & Toci., 2010). Micro and small firms are either the most bank credit constrained or rank highest amongst discouraged SMEs (Kremp & Sevestre, 2013). This concurs with Öztürk & Mrkaic (2014) findings for European micro-sized SMEs who are shown to have the greatest difficult securing bank loans. Psillaki & Eleftheriou (2015) found that French SMEs access to bank finance was constrained during the economic downturn and this was especially prevalent for younger firms. Andries et al. (2016) show how young European SMEs are likely to experience bank financing constraint in contrast to older SMEs, who are much less likely to have their loan applications rejected.

Other factors also impact access to bank finance including high debt levels and the higher risks associated with export firms and innovators. Lawless & McCann (2013) attest that high levels of debt are likely to increase credit constraints for Irish SMEs. Benkraiem and Miloudi (2014)

found that European SMEs who are export oriented have difficulty in obtaining bank financing due to increased uncertainty across country borders. In an analysis of UK SMEs, Lee et al. (2015) show that innovative firms are more likely to find it difficult to secure bank finance and that this difficulty is heightened during an economic downturn.

Despite the strong support of the likely bank credit constraint for SMEs conflicting evidence was found for French SMEs by Kremp & Sevestre, (2013) who contend that they were not overly impacted by such constraint which they attribute to a decrease in demand for bank debt by firms due to lower activity and investment resulting from an economic downturn.

Spanish publicly listed family firms, given their conservative approach, are likely to self-ration and unlikely to seek bank loans (Gallo & Vilaseca, 1996). Andres (2011) attest that German publicly listed family firms are more vulnerable to external financing constraint. Peruzzi (2015) for Italian family-owned firms (small and large firms) illustrate how these firms are more likely to have difficulty in accessing bank finance due to increased agency conflicts, which are more prevalent in highly concentrated family firms. In contrast, Keasey et al. (2014) contend that the relationship which European family-owned firms forge with banks helps to alleviate possible credit constraint. Similarly, Crespí & Martin-Oliver (2015) show how Spanish unlisted family-owned firms due to their relationship with lenders and long-term orientation are less likely to experience credit constraint in contrast to non-family firms. Family-owned firms in Italy are found to experience less bank credit constraint (all sizes including SMEs) compared to non-family firms (D'Aurizio et al., 2015), due to fewer agency problems between family firms and banks.

Yet, more recently Murro & Peruzzi (2019) illustrate how Italian family firms (mainly SMEs and includes large firms), in stable economic times, particularly small family firms, are more

likely to be credit rationed compared to non-family-owned firms. This assertion is more pronounced in those family firms with a higher ownership concentration.

In sum, these is significant evidence to suggest that credit constraint by way of access to bank loans for SMEs is found to be less pronounced for family-owned SMEs. Given this evidence, Hypothesis 13 is as follows:

*Hypothesis 13: European family-owned SMEs are less likely to be credit constrained for bank loans in contrast to non-family SMEs.*

#### **2.9.3 Trade Credit**

Trade Credit, also called supplier finance, arises from credit terms offered by the supplier of the goods or services to the purchaser for a periods usually between 30 and 90 days. The key benefits of trade credit included delayed payment terms, the buyer owns the goods immediately and no interest is charged once cleared within the agreed time. Yet trade credit includes the purchase price terms and discounts lost should the buyer have made an early payment for the goods.

Ferrando & Mulier (2013) show how European firms (mainly SMEs) during times of crisis increase their use of trade credit to counter the sharp decrease in the availability of bank debt. Furthermore, a number of other European studies attest how credit constrained SMEs are more likely to substitute trade credit for bank debt (Casey & O'Toole, 2014; Carbó-Valverde et al., 2016; Moritz et al., 2016; McGuinness et al., 2018). McGuinness & Hogan (2014) found that Irish SMEs, who were dependent on short-term bank debt during the 2007/2009 crisis, increased their use of trade credit which they attribute to the difficulty in renewing short-term bank debt. Similarly, French SMEs are more likely to increase their usage of trade credit in times of credit shortages (Psillaki & Eleftheriou, 2015).

Casey & O'Toole (2014) show that older constrained European SMEs are more likely to apply for trade credit. The usage of trade credit is positively related to firm size for German SMEs and larger firms (Lawrenz & Oberndorfer, 2018).

Family-owned SMEs in the UK prefer short-term trade credit as no collateral is required (Poutziouris, 2001). Equally, Finnish family-owned SMEs are more likely to use trade credit compared to all other SMEs primarily due to a lack of availability of other financing sources (Lappalainen & Niskanen, 2013). Moritz et al. (2016) show how young European family-owned SMEs are more likely to rely on trade credit in the absence of access to bank debt. Similarly, Masiak et al. (2017) show how younger (2-5 years) family firms in distressed European countries (Cyprus, Spain, Greece, Ireland, Italy, Portugal and Slovenia) rely more on trade credit.

In summary, there is much evidence supporting the use of trade credit by family-owned SMEs and other SMEs particularly when these firms experience difficulty accessing bank finance. Hypothesis 14 suggests:

*Hypothesis 14: There is no difference in the likelihood of credit constraint for trade credit for European SME family-owned firms and non-family SMEs.*

#### **2.9.4 Other financing sources**

Other financing sources encompass the remaining eight financing options asked of respondents in the ECB's SAFE survey (ECB, 2017). These include retained earnings, grants and subsidized bank loans, other loans, debt securities, equity capital, leasing and hire purchase, factoring and other sources.<sup>24</sup>

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<sup>24</sup> The EC/ECB's SAFE survey defines retained earnings as 'internal funds like cash or cash equivalent, resulting for instance from savings, retained earnings or sale of assets'; grants and subsidised bank loans as 'support from public sources in the form of guarantees or reduced interest rate loans'; other loans as loans 'for example, from family and friends, a related enterprise or shareholders, excluding trade credit'; debt securities as 'short-term commercial paper or longer-term corporate bonds issued by your enterprise'; to equity capital as 'raising capital through the sale of shares in your enterprise. It is usually associated with the financing of companies listed on an

Small self-rated European SMEs are less likely to use grants and subsidised bank loans (Casey & O'Toole, 2014). Yet, they attest that SMEs in stressed countries<sup>25</sup> are more likely to rely on grants or subsidised bank loans, explained by financing constraints and the wider availability of these support sources (Casey and O'Toole 2014). Ferrando et al. (2017) illustrate how the contraction in the availability of bank finance in stressed economies resulted in European SMEs relying more on retained earnings and government subsidies. Their study also shows how European SMEs in stressed countries are less likely to use loans from family and friends (other loans) suggesting a decline in the availability of this source simultaneously with bank credit deterioration (Ferrando et al., 2017). Croatian SMEs, facing constraint in traditional bank lending, may rely more on asset-based lending such as leasing & HP, or factoring (Harc et al., 2017).

Given the dearth of evidence of financing constraint of usage of these financing options by family-owned SMEs and indeed other SMEs Hypothesis 15 proposes:

*Hypothesis 15: There is no difference in the likelihood of credit constraint for other financing sources for European SME family-owned firms and non-family SMEs.*

In summary, strong evidence is shown of bank financing constraint, both short-term and long-term for a myriad reasons. These include information asymmetry, agency issues, firm ownership, firm size, firm age, lack of collateral and country differences. Moreover, there is

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exchange via public offerings. It can also involve a private sale, in which the transaction between investors and the enterprise takes place directly. Equity capital includes quoted and unquoted shares or other forms of equity provided by the owners themselves or by external investors, including venture capital or business angels'; leasing and hire purchase interchangeably as 'obtaining the use of a fixed asset (for example, cars or machinery) in exchange for regular payments, but without the immediate ownership of the asset'; define factoring as 'selling your invoices to a factoring company; this company gets your debt and has to collect it; it will make a profit by paying you less cash than the face value of the invoice' and other sources of finance as 'for example, subordinated debt instruments, participating loans, peer-to-peer lending, and crowdfunding. Subordinated debt is repayable only after other debts have been satisfied. A participating loan gives the lender the right to convert the loan into an ownership or equity interest in the company under specified clauses and conditions.

Peer-to-peer lending consists of lending money to an unrelated individual or enterprise without a traditional financial intermediary, usually via dedicated online lending portals. Crowdfunding involves raising monetary contributions from a large number of people, typically via the internet' (ECB, 2017).

<sup>25</sup> Stress countries are Spain, Ireland, Italy, Greece and Portugal, (Casey & O'Toole, 2014; Ferrando et al., 2017).

considerable evidence to show that SMEs who are constrained for bank finance substitute the gap by increasing their use of trade credit, particularly during an economic downturn. Grants and subsidised bank loans are found to play an important role in supporting the survival and growth of SMEs, notably smaller firms.

## **2.10 Summary**

This Chapter presented the theoretical framework underpinning the study and explored the financing literature for SMEs and family-owned firms. The Chapter started with a discussion of the unique hallmarks of family firms in both the academic and practitioner fields. Then, section 2.3 provided a review of agency theory, the pecking order hypothesis, trade-off and financial life cycle theories which underpin this research, followed by a background to the impact of credit rationing on the financing of SMEs and privately held family firms. The next section provided empirical evidence of the relevance of firm ownership, firm level variables and country effects on the financing patterns of family-owned SMEs and the overall SME cohort. Then section 2.5 conducted a review of the literature of financing sources available to European SMEs and family-owned firms, which led to the formation of the hypotheses for research question one.

Consideration was then given in section 2.6 to the empirical credit constraint literature, followed by a review of empirical studies of the likelihood of SMEs/family-owned firms experiencing bank credit constraint compared to trade credit and other finance sources which led to the formation of hypotheses (section 2.7) for research question two. Finally, a summation of the hypotheses for both research question 1 and 2 was tabulated (tables 1 & 3) together with summary tables, 2 & 4, of the key literature.

The next Chapter presents the research methodology.

Table 1 – Summary of Hypotheses Underpinning RQ1

<i>Hypothesis 1: European family-owned SMEs are more likely to use retained earnings than non-family SMEs.</i>
<i>Hypothesis 2: European family-owned SMEs are more likely to use grants and subsidised loans than non-family SMEs.</i>
<i>Hypothesis 3: European family-owned SMEs are more likely to use bank credit lines than non-family SMEs.</i>
<i>Hypothesis 4: European family-owned SMEs are more likely to use bank loans than non-family SMEs.</i>
<i>Hypothesis 5: European family-owned SMEs are more likely to use trade credit than non-family SMEs</i>
<i>Hypothesis 6: European family-owned SMEs are more likely to use other loans than non-family SMEs.</i>
<i>Hypothesis 7: There is no difference in the use of debt securities between European family-owned SMEs and non-family SMEs.</i>
<i>Hypothesis 8: European family-owned SMEs are less likely to use equity capital than non-family SMEs.</i>
<i>Hypothesis 9: European family-owned SMEs are more likely to use leasing and hire purchase than non-family SMEs.</i>
<i>Hypothesis 10: European family-owned SMEs are more likely to use factoring than European non-family SMEs.</i>
<i>Hypothesis 11: There is no difference in the use of other sources between European family-owned SMEs and non-family SMEs.</i>

Table 2 – Summary of Empirical Support RQ1

Instrument	Expected Relationship	Empirical support – Family-Owned SMEs	Empirical support - SMEs
Retained Earnings	+	Poutziouris (2001); López-Gracia & Sánchez-Andújar (2007); Vadnjal & Glas (2008); Mohamadi (2012); Molly et al. (2012); Lappalainen & Niskanen (2013); Psillaki & Eleftheriou, (2015); Bornhäll et al., (2016)	Chittenden et al. (1996); Sogorb-Mira (2005); Mac an Bhaird & Lucey (2010); Palacín-Sánchez et al., (2013); Moritz et al., (2016)
Grants and Subsidised Bank Loans	+	Vadnjal & Glas (2008); Moritz et al., (2016)	Daskalakis et al. (2013); Casey & O'Toole (2014); Masiak et al. (2017); Ferrando et al., (2017); Ferrando & Lekpek (2018)
Bank Credit Lines	+	Coleman & Carsky (1999); Poutziouris (2001); Burgstaller & Wagner (2015); Migliori et al., (2018)	Chittenden et al. (1996); Berger & Udell (1998); Hall et al., (2004); Beck et al. (2008a); Degryse et al. (2012); Moritz et al., (2016)
Bank Loans	+	Coleman & Carsky (1999); Poutziouris (2001); Vadnjal & Glas (2008); Serrasqueiro et al. (2011); Mohamadi (2012); Serrasqueiro et al. (2012); Lappalainen & Niskanen (2013); Ramalho et al. (2014); Burgstaller & Wagner (2015); Michiels & Molly (2017)	Berger & Udell (1998); Hall et al. (2004); Sogorb-Mira (2005); Mac an Bhaird & Lucey (2010); Degryse et al. (2012); Ferrando & Lekpek, (2018).
Trade Credit	+	Michaelas et al. (1999); Poutziouris (2001); Bönte & Nielen (2011); Lappalainen & Niskanen (2013); Moritz et al. (2016); Masiak et al. (2017).	Klapper et al. (2012); Riding et al. (2012); Casey & O'Toole, (2014); Lawless et al. (2015); Psillaki & Eleftheriou (2015); Carbó-Valverde et al.(2016); Moritz et al.(2016); Nielen (2016); Lawrenz & Oberndorfer, (2018); McGuinness et al.(2018)
Other Loans	+	Romano et al. (2001); Mohamadi (2012); Lappalainen & Niskanen (2013); Ramalho et al. (2014).	Chavis et al. (2011); Lee & Persson (2016); Rupeika-Apoga & Saksonova (2018).
Debt Securities	N/A		Moritz et al. (2016); Ferrando et al. (2017)
Equity Capital	-	Poutziouris (2001); Romano et al. (2001); Vadnjal & Glas (2008); Cosh et al. (2009); Croci et al. (2011)	Lawless et al. (2015); Moritz et al. (2016); Masiak et al. (2017); Ferrando et al. (2017)
Leasing and Hire Purchase	+	Poutziouris (2001); Landry et al. (2013); Lappalainen & Niskanen (2013); Moritz et al., (2016)	Deloof et al. (2007); Casey & O'Toole (2014); Moritz et al. (2016); Harc et al. (2017); Masiak et al. (2017)
Factoring	+	Poutziouris (2001); De Giuli et al. (2011); Lappalainen & Niskanen (2013)	Berger & Udell (2006); Klapper, (2006); Moritz et al. (2016); Mol Gómez-Vázquez et al., (2018)
Other Sources	N/A		Gierczak et al. (2015); Moscalu et al., (2019)

Table 3 – Summary of Hypotheses RQ2

<p><i>Hypothesis 12: European family-owned SMEs are less likely to be credit constrained for bank credit lines in contrast to non-family SMEs.</i></p>
<p><i>Hypothesis 13: European family-owned SMEs are less likely to be credit constrained for bank loans in contrast to non-family SMEs.</i></p>
<p><i>Hypothesis 14: There is no difference in the likelihood of credit constraint for trade credit for European SME family-owned firms and non-family SMEs.</i></p>
<p><i>Hypothesis 15: There is no difference in the likelihood of credit constraint for other financing sources for European SME family-owned firms and non-family SMEs.</i></p>

Table 4 – Summary of Literature RQ2

<b>Instrument</b>	<b>Expected Relationship</b>	<b>Literature – Family-Owned Firms</b>	<b>Literature - SME</b>
Bank Credit Lines	+	Crespí & Martin-Oliver, (2015); Peruzzi, (2015); Schafer et al. (2015); Migliori et al. (2018)	Hashi & Toci, (2010); Chavis et al., (2011); Ferrando & Mulier, (2011); McGuinness & Hogan, (2014); Casey & O'Toole, (2014); Ferrando & Mulier, (2015a)
Bank Loans	+	Gallo & Vilaseca, (1996); Andres, (2011); Keasey et al. (2014); Crespí & Martin-Oliver, (2015); D'Aurizio et al. (2015); Peruzzi, (2015); Murro & Peruzzi, (2019)	Hashi & Toci, (2010); Ferrando & Mulier, (2013); Mac an Bhaird, (2013); Lawless & McCann, (2013); Benkraiem & Miloudi, (2014); Öztürk & Mrkaic, (2014); Lee et al., (2015); Psillaki & Eleftheriou, (2015); Andries et al., (2016)
Trade Credit	N/A	Poutziouris, (2001); Lappalainen & Niskanen, (2013); Moritz et al., (2016); Masiak et al. (2017)	Casey & O'Toole, (2014); McGuinness & Hogan, (2014); Psillaki & Eleftheriou, (2015); Carbó-Valverde et al. (2016); Moritz et al., (2016); McGuinness et al. (2018); Lawrenz & Oberndorfer, (2018).
Other financing sources	N/A	Romano et al. (2001); Mohamadi (2012); Lappalainen & Niskanen (2013)	Casey & O'Toole, (2014); Ferrando et al. (2017); Harc et al. (2017)

## **Chapter Three: Methodology**

### **3.1 Chapter Overview**

Having reviewed the pertinent literature in Chapter 2, this Chapter now focuses on the research methodology. It commences with the philosophical orientation of the study in section 3.2, followed by the research objective, the research questions which leads then to details of the research design and data used in the subsequent sections. The ECB SAFE survey is then presented (section 3.7), and the sampling criteria applied. This is followed in section 3.8 by the reliability, replication and validity considerations. The sample selection and criteria are addressed in section 3.9. Then in section 3.10 an outline of the method of analysis is illustrated which in turn leads to a presentation of the demographic information (section 3.11). The final section draws this Chapter to a close with the conclusion leading to the findings of the empirical analyses in Chapters 4 and 5.

### **3.2 Research Philosophy**

Research is a systematic investigation into a topic or problem with the intent of creating new knowledge or conclusions. Depending on the research philosophy to be applied there will be different assumptions used, which will underpin the entire research strategy and chosen methods (Saunders et al., 2009). A philosophical orientation has two main constructs; the thing which is to be studied, and the outcome of such study. The methodology debate can also be parsed into two broad divisions: ideographic and nomothetic (Burrell & Morgan, 1979). Ideographic centres on letting the subject unfold its nature and characteristics as the analysis develops. On the other hand, nomothetic depends on systematic research using empirical testing of the selected hypotheses. The choices of methodology will be guided by the confines of the epistemological and ontological positions. The ontological persuasion and epistemological stance of the researcher align directly. Epistemology is the study of knowledge

and what is knowable. The ontological question refers to the thing, to reality, to existence and measurability. The methodology used to undertake research are knowingly or unknowingly influenced by the researchers' ontology and epistemology. It is more constructive at least to try 'to know'.

### **3.2.1 Epistemology**

Epistemology is the study and theory of knowledge. Epistemology is concerned with the positioning of the researcher. Tuli (2010, p.99) attests that epistemology centres on these questions: 'What is the relationship between the knower and what is known? How do we know what we know? What counts as knowledge?' Within this philosophy, two different viewpoints can be taken: either positivism or interpretivism. The epistemological debate is illustrated through its extremes anti-positivism and positivism (Burrell & Morgan, 1979). Anti-positivism assumes there is nothing to gain from an outside researcher or observer, and that only the perceptions and experiences of insiders can give knowledge-worthy insights. Positivism asserts that what is knowable can in some way be tested by an external and independent observer. On the other hand, Interpretivism tried to form a deep understanding of human culture activities and experiences and, in contrast to positivism, "seeks to understand values, beliefs, and meanings of social phenomena" (Tuli, 2010, p. 103). Thus, interpretivism attempts to create an understanding of the subject matter, while positivism tries to explain it.

The objective of this research is not to create new ideas or theories. Existing theories will form the basis from which various hypotheses are developed to analyse the sources of finance used by European family-owned SMEs and to establish if evidence exists of any credit constraints compared to non-family SMEs. The theoretical framework and the findings will inform a conclusion. Moreover, the data employed in this research is secondary in nature. Thus, the epistemological approach of this degree project is based on positivism.

### **3.2.2      Ontology**

Ontology is formative to any research as it scopes the reality in which the research takes place, and for which it will fit in thereafter. Two vying perspectives on reality are considered the extremes of an ontological paradigm: nominalism and realism (Burrell & Morgan, 1979). Nominalism places the focus of reality on the individual, and that their perceptions and societal concepts form their reality. Realism on the other hand, is the concept that reality is more anchored and that there is a fixed reality to which our perceptions are irrelevant. These two philosophical approaches are also called objectivism and constructionism. Objectivism argues that social entities existence is external to social actors, while constructivism claims that social phenomena is the outcome of perceptions and consequent actions of social actors (Saunders et al., 2009). Research which adopts a positivist approach believes reality exists in the world, which needs to be discovered using scientific methodologies. As such, an objectivist approach is adopted in the research using quantitative methodologies. The data forms the basis for the statistical tests to obtain proof, independent of experiences, in order to establish the financing preferences of European family-owned SMEs and evidence of any credit constraints in contrast to non-family firms. The results are observable in numbers, which speak for themselves (Cohen et al., 2007).

### **3.2.3      Research Approach**

The research approach questions the relationship between theory and research, and whether theory should be prominent within a study (Bryman & Bell, 2011). In research there are two pillars, namely deduction and induction. Deduction facilitates conclusions by already known facts and theories. Induction, on the other hand, is a process where conclusions are arrived at using the observed phenomena of the research. Deduction is concerned with what is already known about a field and its theoretical considerations. This existing knowledge informs hypotheses which is usually subject empirical analysis, given that the variables and data are

being tested. This enables the hypotheses to be either accepted or rejected (Ghauri & Grønhaug, 2010). In sum, the deductive approach requires measurement of the data collected and the results obtained. Induction follows a different pattern in that the process is firstly guided by observations, then findings and culminating in theory building. In other words, theory is the outcome of the study (Bryman & Bell, 2011). The inductive process is more aligned with qualitative methodology. As such, based on the positivism approach a deductive process best suits the needs of this research. Starting with the available literature within the scope of SME and small family firm financing decisions, an extensive library of prior studies is available. Thus, the objective is not to create new theories, but rather to learn from the literature review and key theories on the subject and employ these as the basis to develop the hypotheses. The secondary data used as part of this research enables statistical appraisal of these hypotheses to meet the study's objective. A deductive approach is, therefore, used.

### **3.2.4 Research Composition**

There are three categories of research composition or design, namely exploratory, descriptive and explanatory (Hair et al., 2003). An exploratory design seeks to discover new ground where there is little or no prior knowledge. As such it is flexible and adaptive in trying to discover the cause of a problem. This design suits qualitative research best. Next, a descriptive design, which is regarded as basic research, scrutinises and tries to explain variables in an existing situation. The research objective must be clear, suitable for data analysis and follow an ordered pattern of measurement. Descriptive research design is a good fit for business research. An explanatory research design tries to find the cause of a relationship between given variables (Saunders et al., 2009). Furthermore, this type of research design having identified the cause seeks to show the extent of the effects on the result of the relationship. Saunders et al. (2009) outline how a descriptive research design may be a forerunner to using an explanatory design to identify the resulting causal problem. This research analyses the sources of finance used by

European family-owned SMEs compared with non-family SMEs and tests for any evidence of credit constraint for family-owned SMEs compared to other SMEs. As such this research will follow a descriptive-explanatory design.

### **3.2.5 Research Strategy**

The strategic approach of the research can pursue several channels. These include case study, survey, experiment, action research, grounded theory, ethnography, narrative inquiry and archival research (Saunders et al., 2009). A case study can be flexible and fit both explanatory and exploratory design and fits quantitative analyses. A survey strategy uses primary data, collected by the researcher to obtain relevant information for later analysis. Experiments are most often associated with scientific studies, with the strategic intent to compare the impact of a change in one variable on another. Action research involves an activity to resolve a problem or issue and is typically associated with organisations to address an issue and may involve learning or changing processes. Grounded theory is a process where the findings of a study can lead to a new theory. This type of research usually starts with data collection, prior to any theoretical guidance and best fits qualitative data. Ethnographic research (Williams, 2007) is concerned with the study of social interactions and behaviour through life experiences and is designed to allow the researcher observe society from the point of view of the subject of the study. An ethnography strategy is considered time consuming with little, if any, relevance in business research. Narrative inquiry gathers information for the purpose of research through storytelling. The researcher then writes a narrative of the experience. This type of qualitative research aids research in designing a narrative of the way humans experience the world. Finally, archival research (Williams, 2007) is based on the past and changes over time. To employ archival research the requisite data to address the research objective is paramount. Such research often uses archived records which may be available in paper, digital or electronic databases. A broad strategic approach can work with exploratory, descriptive and explanatory

research designs. The archival research strategy best fits the objective of this study supported by a database covering several years to test and analyse the hypotheses.

### **3.2.6 Time Horizon**

The time horizon of research deals with data at a specific point in time. Essentially, this can be either a cross-sectional or longitudinal approach (Hair et al., 2003). Firstly, a pooled cross-sectional study deals with data analysis at different periods in pursuit of the research objective. The benefits of this approach include allowing the researcher to compare randomly selected groups within the same parameters over time. The longitudinal approach examines the data over a period, which assists a research objective and hypotheses concerned with variation over time. In other words, a longitudinal study is observational research using data which is usually gathered for the same subjects repeatedly over a period of months, years or decades. Thus, longitudinal research facilitates the study of change and development in data over time for the same observations. The purpose of this study is to examine the financing preferences of European family-owned SMEs and to test for evidence of any credit constraints in contrast to non-family firms. As such empirical testing will be completed for randomly selected firms over different periods using both firm-level and country-level variables. A pooled cross-sectional approach is used to answer the research questions.

### **3.2.7 Research Method**

There are three main research methods namely, quantitative, qualitative and mixed methods (Creswell, 2014). There are fundamental differences between quantitative research and qualitative research. Quantitative research is grounded in a deductive approach, follows a descriptive-explanatory design, and has a positivist view relative to its epistemology, with an objective ontological approach (Tuli, 2010). This type of research methodology is underpinned by a thorough literature review and theoretical framework. Quantitative research has hypotheses which lead to statistical analysis of the data to test the theories and address the

research objective. The statistical analysis is presented numerically (Tuli, 2010) to prove or reject the hypotheses. In contrast, qualitative research has different methodological characteristics. This research methodology uses inductive reasoning, an interpretivism epistemology stance and a constructivist ontology orientation. It is more likely that qualitative research concepts and theoretical elaborations emerge out of the data gathered. The data is generated through questions asked in interviews, open-ended questionnaires or observations. The core objective of qualitative research is to develop a deeper understanding of a situation analysed through a small sample (Williams, 2007). The outcome is presented in written format in contrast with the numerical results of quantitative research. Finally, a mixed methods approach to research is an extension of quantitative and qualitative research. The aim of employing a mixed methods approach to research is to draw from the strengths of both quantitative and qualitative research (Williams, 2007). A researcher seeks to provide an in-depth insight into a phenomenon, then a small informative sample for qualitative analysis is likely pursued which is typical of qualitative research. Thus, combining both into a single research study through a mixed methodology approach. The purpose of this study is to examine the financing preferences of European SME family-owned firms compared to non-family-owned SMEs and to assess whether or not family-owned firms experience credit rationing. The data used, which is secondary, was compiled by SAFE under the remit of the ECB/EC. This data forms the basis for the statistical analysis of the hypotheses for RQ1 and RQ2. The quantitative method is therefore deemed the most appropriate choice.

### **3.2.8 Ethical and moral issues**

Ethical and moral issues may arise due to fairness, conflict of interest, honesty and responsibility. Creswell (2014) attests that these issues can be attributable to either qualitative or quantitative research and comprise five main concerns. These concerns are firstly, statement of the research problem, secondly, is the aim of the study as illustrated in the research questions,

thirdly, is the collection of the data, fourthly, is the data analysis and interpretation and finally, is in writing and presenting the research findings.

A statement of the research problem or gap leading to the accompanying research questions should carefully consider existing quality and reliable knowledge in the field during the initial stages of identifying the research topic (Saunders et al., 2009). A comprehensive literature review for this study was undertaken, incorporating a robust theoretical framework along with consideration of prior empirical studies. Furthermore, the research gap identified in this study will contribute to the body of knowledge on the financing of family-owned SMEs and non-family SMEs in Europe. Secondly, the aim of a study and the research questions should be clear and unequivocal to avoid any ambiguity (Creswell, 2014). The primary concern is that a moral dilemma could arise as the research unfolds which is more likely to arise through a qualitative study of a sensitive subject. Such a moral dilemma may be the result of the interpretation of findings which do not correlate with the original problem thus misrepresenting the research purpose or the findings. A moral dilemma concern for this study does not arise given that the purpose is relatively straight forward based on prior studies in the SME financing arena particularly family-owned SMEs. The research questions can be empirically tested using quality data thus arriving at a conclusion through presentation of the findings. The third main concern of the ethical debate is the actual data collection. These concerns are centred on protecting the rights of participants which include non-divulgance of sensitive information, legal rights and the privacy of participants (Creswell, 2014). These concerns are more likely to occur in a qualitative study. This research uses a quantitative methodology employing a large data base of anonymous predominantly numerical secondary data sourced with the explicit permission of the ECB/EC. There is no information in the data that could breach privacy concerns. Furthermore, the research is grounded on the study of legal entities not individuals, with non-disclosure of participants' names or addresses. Hence, no sensitive or legal rights

concerns are likely to arise. Fourthly, ethical issues must be addressed in the empirical analysis and interpretation. The data testing and interpretation must be an accurate assessment of the available information (Creswell, 2014). The aim of this study is to examine the financing preferences of European SME family-owned firms compared to non-family-owned SMEs and to assess whether or not family-owned firms experience any form of credit rationing. The empirical analyses are mainly based on categorical data and the results interpretation leave little margin for factual misrepresentation. Lastly, the written presentation of the study has ethical concerns. The written report should contain language and words that are fair and impartial and clearly represent the research objective, the research questions, the data, the empirical analyses and interpretation of the findings. Bias or disadvantage must be avoided (Creswell, 2014). The nature of this study based on anonymous legal entities has no ethical concerns in writing the report.

### **3.2.9 Summary Philosophical Orientation**

The philosophical orientation of this research is summarised in Table 5 below which, together with the research objective and research questions, informed the practical research design, data collection, sampling criteria underpinned by the reliability, replication, and validity of the study.

*Table 5 – Summary of Philosophical Orientation*

<b>Topic</b>	<b>Orientation</b>
<i>Epistemology</i>	Positivism
<i>Ontology</i>	Objectivism
<i>Research Approach</i>	Deductive
<i>Research Design</i>	Descriptive-Exploratory
<i>Research Strategy</i>	Archival
<i>Time Horizon</i>	Cross-sectional
<i>Research Method</i>	Quantitative
<i>Ethics</i>	Ethical research

Source: the author

### **3.3 Research Objective**

The objective of this study is to examine the financing preferences of European SME family-owned firms compared to non-family-owned SMEs and to assess whether or not family-owned firms experience any form of credit constraint. More specifically the research questions seek to address this research objective.

### **3.4 Research Questions**

Research question one seeks to establish the likely use of the sources of finance by family-owned SMEs compared to solely owned SMEs and professionally owned SMEs. The rationale for these ownership groups is based on the fact that family-owned firms are the largest subset of all SMEs, who are characterised by unique attributes. Sole owners, the second largest ownership group, are considered to be straightforward businesses with uncomplicated decision-making as there is only one business owner. Professionally owned SMEs include business associates, other enterprises, venture capitalists, business angels and any other SMEs. This latter group are generally concerned with the professional management of the business to maximise profits.

Research question two tests for the likelihood of family-owned firms experiencing financing constraint compared to sole owner SMEs and professionally owned SMEs. The research questions are: -

RQ1 - What sources of finance are employed by European family-owned SMEs in contrast to non-family SMEs?

RQ2 – What is the likelihood of European family-owned SMEs experiencing credit constraint in contrast to non-family SMEs?

### **3.5 Research Design**

The research design is the blueprint which guides the research method and analysis of the data, underpinned by the reliability, replication and validity. A research design takes cognisance of the research purpose, research questions and hypotheses to select the most appropriate methods.

The philosophical orientation of the study and nature of the research questions leads to a cross-sectional design. There are two primary methodological designs, namely longitudinal and cross-sectional (Leavy, 2017). Longitudinal design happens at multiple periods to measure changes to the same observations over time whereas cross-sectional assesses a sample at a given period of time (Leavy, 2017). However, according to Wooldridge (2013) ‘there are two types of data that have both cross-sectional and time dimensions: independently pooled cross sections (IPCS) and panel, or longitudinal data’. Pooled cross-section is conducted by randomly sampling a large population at different points in time (Wooldridge, 2013). Thus, a pooled cross sectional approach adopts independent random sampling of a population at different time periods whereas a longitudinal design focuses on the same observations over time.

The benefits of a pooled cross sectional design include an increase in sample size which should lead to more precise estimators (Wooldridge, 2013). In an independent pooled cross sectional approach, random observations (e.g. firms) are chosen from the population at each sample period. This random sampling prevents any correlation in the error terms of each survey’s observations. (Wooldridge, 2013). Moreover, another advantage of pooled cross sectional approach is its value in analysing the impacts of events or policy changes (Wooldridge, 2013). Overall, given the nature of the research objectives, questions and the chosen data, a pooled cross sectional design provides the best fit for this study.

### **3.6 Data Collection**

Surveys comprise secondary data which tends to be widely available and facilitates the analyses of the hypotheses, thus solving the research problem. Leavy (2017) stipulates that survey items (questions in the questionnaire) are designed to enable testing of hypotheses or answer research questions.

Surveys are the most widely used quantitative approach in business research as this research prefers large sample sizes. Moreover, accuracy is expected to increase with larger surveys (Leavy, 2017).

Surveys usually consist of a standard suite of questions that enable statistical analysis. Larger survey samples facilitate research by providing a range of data which can more readily be generalised to the sample population. Surveys are generally used to obtain information about an individuals' or firms' beliefs, opinions, attitudes and behaviour. This type of data is referred to as subjective data whilst objective data is concerned with facts such as date of birth, incorporation date of enterprise or firm size (Leavy, 2017).

The evaluation of SME financing in prior literature employs secondary data including the Survey on Financing of Small and Medium Enterprises (SAFE), Statistics Canada, National Survey of Small Business Finances (NSSBF) and Business Longitudinal Survey developed by the Australian Bureau of Statistics. Self-administered surveys are also used to examine financing preferences of firms, such as Romano et al. (2001), Daskalakis et al. (2013), and Lappalainen & Niskanen (2013).

There are cross-country analyses of SME financing which use surveys. These include Psillaki & Daskalakis (2009) study of four countries (France, Italy, Greece and Portugal); Canton et al (2013) analysis of twenty-five European countries whilst Jõeveer (2013) study concentrates on ten Western European countries.

Details of the various sources of finance and the experience of any credit constraint by European family-owned SMEs and other SMEs are extracted from the EC/ECB Survey on the access to finance of enterprises (ECB, 2017). The European Commission (EC) and the European Central Bank (ECB) established the Survey on the access to finance of Enterprises (SAFE) in 2009. The purpose of the survey is to assess the trends in financing conditions for SMEs' but also includes larger firms.

Since the inception of SAFE in 2009, several studies have used this survey solely to assess the different aspects pertaining to the financing of European SMEs. These include, Artola & Genre (2011), Ferrando & Griesshaber (2011), Drakos (2013), Casey & O'Toole (2014), Holton et al. (2014), Öztürk & Mrkaic (2014), Andries et al. (2016), Mac an Bhaird et al. (2016), Moritz et al. (2016), Demoussis et al. (2017), Ferrando et al. (2017), Gómez (2019), Masiak et al. (2019), and Mc Namara et al. (2020). For example, Drakos (2013) examined changes in debt pricing and in non-price terms and conditions of bank debt during the economic and sovereign debt crisis (2008-2011), while Moritz et al. (2016) explored SME financing patterns in Europe using a cluster approach. More recently, Mc Namara et al. (2020) examines the impact on SME credit rationing as a consequence of a country's lending infrastructure. Other studies use SAFE in conjunction with other data sets, for example O'Toole et al. (2015).

Most studies which analyse family-owned SME financing rely on secondary sources including Serrasqueiro et al. (2012), Burgstaller & Wagner (2015), Crespí & Martín-Oliver (2015), Díaz-Díaz et al. (2016), and Migliori et al. (2018) and are based on a single country setting. These include Portugal, Austria, Spain and Italy and each study used the relevant Bureau van Dijk database (e.g. AIDA, Amadeus and SABI)<sup>26</sup>.

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<sup>26</sup> AIDA data of Italy, Amadeus for Austria (Amadeus is a European database) and SABI (Sistema de Análisis de Balanços Ibérico) for Portugal and Spain.

### **3.7 The SAFE Survey**

The EC and the ECB established SAFE in 2009. The purpose of the survey is to assess the trends in financing conditions for SMEs' but also includes larger firms. The survey covers 38 countries, including all 28 EU member states and other countries of the European Free Trade Association (EFTA) or participating in the Entrepreneurship and Innovation Programme (EIP). The survey, first conducted in 2009, is carried out by professional research companies predominantly using computer assisted telephone interviews (CATI). On-line questionnaire (using computer-aided web interviewing CAWI) has been employed but with minimal uptake by participants. The interviewee in each company is a top-level executive (general manager, financial director or chief accountant). It is undertaken on a bi-annual basis on behalf of the ECB and every two years as a joint survey on behalf of both the ECB and the EC (since 2014 the joint ECB/EC survey is conducted annually). The waves are differentiated by the number of questions and the number of participating countries. In the case of the ECB rounds (every six months) the survey is conducted to a given set of questions and a limited number of euro area countries (initially 11 Countries – Austria, Belgium, Denmark, Finland, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain and since 2014 Slovakia has been included increasing the survey pool to 12 countries).

While each survey contains firm specific information such as ownership, firm age and size (by employee number and turnover), it is primarily concerned with the financing conditions for firms in Europe (ECB, 2017). As a result, several questions regarding firm finance are asked while other questions probe respondents' perception of the prevailing economic and financing conditions.<sup>27</sup>

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<sup>27</sup> A copy of the SAFE questionnaire is included in the appendices.

## **3.8 Reliability, Replication and Validity of Research**

Research quality and the appropriateness of a chosen methodology can be adjudged on a number of factors including but not limited to reliability, replicability, validity (internal validity, external validity, ecological validity), and the limitations of the research (the limitations of the study are presented in Chapter 7, Section 7.6).

### **3.8.1 Reliability**

Reliability is concerned with the extent to which the study is completed without bias and confirms the consistency of the measurements taken over time, which include both external and internal reliability (Leavy, 2017).

External reliability appertains to the stability of the study meaning that if a researcher use the same tests or undertakes the same study the results should be very similar or identical (Bryman and Bell, 2011).

Internal reliability is concerned with the strength of research methods including those when under-taking sampling and analysis. Internal reliability issues do not apply to the study given the nature of the variables employed. In particular, little subjective judgment is used either in the recording or translation of the data (Drost, 2011). Where data cleaning is present it is not performed on an arbitrary basis and is solely used to remove incomplete responses.

For this study, the data has been collected from a database (SAFE survey, ECB), as such it cannot be altered. Thus, the data is the same for all researchers who wish to replicate the study. Moreover, the sampling process has been explained in section 3.7 earlier. As a result, should the same data, procedures, and calculations be used again the same results are most likely achieved. Consequently, it can be stated that the reliability used in this study is robust.

### **3.8.2 Replication**

Bryman and Bell (2011) argue that research should be replicable so the results of the study and its accuracy can be confirmed by others. For this to happen, the researcher must make available the detailed procedures which underpin the study (Leavy, 2017). The details of the variables and the procedural steps of this study are presented in Chapter 3. As such, this study can be replicated to confirm its reliability.

### **3.8.3 Validity**

Validity of research is concerned with whether the study measures what it was intended to measure (Bryman & Bell, 2011). In a quantitative study validity can be improved through careful sampling, appropriate procedures and statistical analyses of the data. Furthermore, quantitative research contains an element of standard error, which should be minimised yet has to be accepted (Cohen et al., 2007).

Bryman & Bell, (2011) attest that there are four key types of validity, namely, measurement validity, internal validity, external validity and ecological validity.

#### *Measurement Validity*

Measurement validity is simply concerned that the measurement of the concept or subject matter is actually measured (Drost, 2011). Measurement validity is based on the strength of a collection of different types of evidence, including construct validity, face validity, convergent validity, concurrent validity and predictive validity. This study is particularly concerned with the first three measures, which are considered to be the most relevant to quantitative research.

Face validity is concerned with whether a test or concept is shown to measure the concept concerned. The variables employed in this study are similar to those used in similar but different research contexts e.g. Moritz et al., (2016) employ many of the firm level variables for SME research of their financing patterns. Construct validity involves the empirical and theoretical support for the interpretation of the hypotheses relevant to the concept. The

formulation of the hypotheses of this study are informed from a theoretical stance enabling the establishment of relevant operational methods for the research. Lastly, convergent validity is concerned with its comparison to other measurements of the same subject matter (Drost, 2011). Robustness testing which forms part of this study endorses convergent validity.

#### *Internal Validity*

Internal validity arises from the connective relationships between two or more variables, based on the measures used, the research setting, and the whole research design (Leavy, 2017). The primary focus of internal validity is on accuracy and strong research methods. As such, quantitative research rests on the assurances of the pivotal inferences made by a researcher (Leavy, 2017).

There are threats to internal validity of a research design. Some of these threats are history, maturation, testing, instrumentation, selection and mortality (Drost, 2011). History relates to an event outside of the control of the study; maturation is aligned to the maturity of the subjects; testing is concerned with familiarity of the study and its aims; selection alludes to selection bias such that a researcher and participants bring to the study a myriad of characteristics, some learned and others inherent together with attitudes such as motivation which may lead to selection bias; finally, mortality is concerned with inferences that are made on the basis of only those participants who have formed part of the study from start to end, yet the loss of some participants during the period of the study may result in mortality bias (Drost, 2011).

Notably, mortality may over the time period of a study cause sample changes due to the subject's circumstances, such as the loss of some participants which could lead of a biased sample (Bryman & Bell, 2011). The sample selected for this study is taken from the ECB's Survey on access to finance of enterprises (SAFE), which is an unbalanced dataset (ECB, 2017), however, economic weights are applied to adjust the accuracy of the survey across activities and size classes (ECB, 2020 p. 6). While it is possible to obtain a balanced panel, the

result would lead to a significant reduction in the number of firm observations and thus impact generalisability. However, the ECB acknowledges the unbalanced sample, but provides weighting measures to restore accurate economic representation. The selected sample spanning some twelve European countries is considered to be representative of the euro area (ECB, 2017).

#### *External Validity*

External validity relates to the extent to which the study can be generalised (Drost, 2011). In particular, external validity should signal that the results of the study can translate to another context in the world at large and that the outcomes apply to practical situations. To ensure validation, probability sampling must be undertaken by way of random selection thus cancelling out any selection bias (Leavy, 2017). The data employed in this study is sourced from the ECB, namely the SAFE survey.

In the SAFE survey, the sample of firms are randomly selected from the Dun and Bradstreet database and then ‘the sample is stratified by country, enterprise size class and economic activity. The number of firms in each of these strata is adjusted to increase the accuracy of the survey across activities and size classes (ECB, 2020). Appropriate weights are also applied to ensure correct results. As firm size class is stratified there is proportional representation of firms across micro (1 – 9 employees), small (10 – 49 employees), medium (50 – 249 employees) and large firms (250 or more employees, which are omitted in this study due to its concentration on SMEs) (ECB, 2020).

The objective of the sample sizes for each economic activity is to achieve representation across the four major activities, namely, industry, construction, trade and other services. The statistical stratification is based on economic activities as per the European NACE classification (the French term "nomenclature statistique des activités économiques dans la Communauté européenne" is commonly referred to as NACE) (ECB, 2020). Industrial firms comprise mining

and quarrying, manufacturing, electricity, gas, steam and air conditioning supply, water supply, sewerage, waste management and remediation activities. Construction firms are simply construction activities. Trade firms include wholesale and retail trade, repair of motor vehicles, motorcycles, personal and household goods. Finally, service firms are made up of those in transport and storage, accommodation and food services, information and communication, real estate, professional, scientific and technical activities, administrative and support service activities, arts, entertainment and recreation and other service activities.

The following activities are excluded: agriculture, forestry and fishing, financial and insurance activities, public administration and defence, compulsory social security, education, human health and social work activities, activities of households as employers; undifferentiated goods and services producing activities of households for own use, activities of extraterritorial organisations and bodies, holding companies and private non-profit institutions (ECB, 2020).

The sample sizes in the different countries are based on a compromise between the costs of the survey and the level of representation at the country level. The four largest countries, namely, Germany, France, Italy and Spain are continually included in the sample, as are the other eight countries i.e., Austria, Belgium, Finland, Greece, Ireland, Netherlands, Portugal and Slovakia (Slovakia was included in each bi-annual wave of the survey from 2014 onwards). The four largest countries have a representation of circa 1,500 firms in each survey (Spain slightly less c. 1,300) while the remaining eight countries each have approximately 500 firms included in each wave of the survey (ECB, 2020). The SAFE survey which is conducted jointly on behalf of the ECB and the EC (since 2014 the joint ECB/EC survey is conducted annually). The survey spans some 38 countries (but not all included in each bi-annual wave), including all 28 EU member states and other countries of the European Free Trade Association (EFTA) or participating in the Entrepreneurship and Innovation Programme (EIP). The survey, first conducted in 2009, is carried out on a bi-annual basis on behalf of the ECB and yearly since

2014 as a joint ECB/EC survey. This study has selected the twelve countries mentioned above, namely Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain and Slovakia as they are surveyed in each wave and furthermore are deemed to be representative of the euro area (ECB, 2017).

To adjust the misrepresented proportion relevant to firm size and economic activity, the SAFE engaged in a calibration of weights designed to restore the economic weight of each size class, economic activity and country (ECB, 2020). Here the number of employees is used as a proxy for economic weight<sup>28</sup>.

In this study, only firms which meet the European Commission's definition of a small and medium sized enterprise (SMEs) are selected in the final sample. As such, the criteria include firms with up to 249 employees, annual turnover of less than or equal to 50 million euro or annual total balance sheet of less than or equal to 43 million euro (EU, 2003). In recent times, many studies have selected firms which meet the European Commission's definition of an SME, including Moritz et al. (2016), Masiak et al. (2017), and more recently, Mc Namara et al. (2020) Moreover, these three studies also used the SAFE survey dataset.

This study adopts the time period of 2014 to 2017 (consisting of six survey waves) to address the research questions. This time period is considered appropriate, with consistent questions across each of the twelve countries, providing sufficient observations. Moreover, the time-period represents a relatively stable economic period for the dominant population of European SMEs and the large family firm subset therein (European Commission, 2015). Yet it incorporates countries most severely impacted by the effects of the economic and sovereign debt crisis spanning 2007 to 2012. Therefore, the external validity may be considered to be generalisable.

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<sup>28</sup> Based on official statistics, 92% of enterprises in the euro area are micro enterprises (with one to nine employees), 7% are small enterprises, 1% are medium-sized enterprises and 0.2% are large enterprises. However, in terms of economic weight, as measured by the number of persons employed, micro enterprises represent 31% of all enterprises, small enterprises 22%, medium-sized enterprises 16% and large enterprises 30% (ECB, 2020).

#### *Ecological Validity*

The ecological validity of a study is the extent to which the materials and setting of the study approximate the real-world that is being examined (Leavy, 2017). For ecological validity to be displayed in research, it is imperative to include as many attributes and relevant factors of the situation, whilst being vigilant of the ethical constraints of the research for example, privacy and non-traceability (Cohen et al., 2007). The ecological stance of this study demonstrates many variables which reflect the real world. These include twelve different European countries and the individual firms within these settings varying in ownership, size and many more variables which represent the reality. Furthermore, the macroeconomic conditions pertaining to each country are included, whilst additional country characteristic measures form part of the robustness tests. In particular, a measure of the information, legal, judicial, bankruptcy, social, tax and regulatory environments of each country is included in the sample.

The data sourced from the ECB's SAFE survey further strengthens the ecological stance of this study. The nature of the questionnaires which are employed as part of the survey necessitate real world experiences to answer questions. In particular, firms are asked in question four of the survey if they applied for or negotiated different sources of finance over the previous six months (ECB, 2017), the responses to this question reflect on their own relevant experiences in that time period. The majority of questions in the SAFE survey draw on each firm's circumstances, experiences, internal and external environments in which they operate.

### **3.9 Sample Selection & Sample Criteria**

The ECB/EC SAFE dataset provides more than 175,000 firm level survey responses over the period 2009-2017. The companies in the sample are selected randomly from the Dun & Bradstreet business register. The survey provides a myriad of demographic, economic, and financial metrics ranging from financing sources to firms' views of credit constraint. However,

the confidential nature of the survey has led to the exclusion of continuous variables upon which firms could be identified. Most of the data comprises categorical variables both nominal and ordinal. The 12 countries selected (Austria, Belgium, Denmark, Finland, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Slovakia and Spain) account for 65% (328.4m) of the total EU population (508.5m), and in terms of GDP these countries at circa €10.6tn represent approximately 71% of the EU total €14.9tn (ECB, 2017). Moreover, these 12 countries are representative of the Eurozone and the firms that operate in this jurisdiction are guided by all of the ECB's regulatory and monetary policies. This representative sample of European countries offers a more homogeneous sample and a good fit for the research objective and research questions of the study. Six SAFE survey waves covering the period April 2014 – March 2017<sup>29</sup> (waves 11, 12, 13, 14, 15 & 16) for these 12 countries have been chosen for analysis. The six waves are in part chosen due to the reliability of the questions over this period as earlier waves comprised numerous changes to the questions, including some questions only being asked in every fourth wave.

In summary, the rationale for this timeframe is as follows:

- (1) Consistency in question format enabling the comparability of survey results over time.
- (2) Provides more recent insights into the conditions prevailing for firms in accessing finance and their perceptions of the financing market.
- (3) Facilitates a comparison of financing sources in a less volatile economic period and, in particular, enables closer analysis of the PIIGS<sup>30</sup> nations who still have difficulty accessing finance (Kraemer-Eis et al., 2017 & 2018).

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<sup>29</sup> The SAFE survey is undertaken bi-annually in April and October. While these dates do not correspond with the normal financial year end dates of firms, this is not considered an impediment as the Survey does not provide financial data/extracts from firms' annual accounts.

<sup>30</sup> PIIGS comprise of Portugal, Ireland, Italy, Greece and Spain. These five countries experienced severe economic and financial distress during the economic/financial crisis (2007/2009) and the sovereign debt crisis which unfolded in 2010.

This results in 88,480 observations across 34 countries over these six waves as shown in Table 6.

Table 6 – Sample All Countries

Country	Wave (11-16)						Total
	H1 2014	H2 2014	H1 2015	H2 2015	H1 2016	H2 2016	
<b>AL</b>	0	0	102	0	101	0	203
<b>AT</b>	502	801	501	803	504	802	3,913
<b>BE</b>	501	801	500	801	501	803	3,907
<b>BG</b>	500	0	502	0	502	0	1,504
<b>CY</b>	101	0	101	0	102	0	304
<b>CZ</b>	500	0	503	0	503	0	1,506
<b>DE</b>	1,337	1,500	1,501	1,502	1,501	1,500	8,841
<b>DK</b>	500	0	506	0	501	0	1,507
<b>EE</b>	100	0	100	0	101	0	301
<b>ES</b>	1,303	1,506	1,303	1,504	1,303	1,503	8,422
<b>FI</b>	501	500	501	500	502	501	3,005
<b>FR</b>	1,500	1,503	1,505	1,502	1,501	1,502	9,013
<b>GR</b>	501	800	501	802	501	805	3,910
<b>HR</b>	300	0	302	0	303	0	905
<b>HU</b>	501	0	503	0	504	0	1,508
<b>IE</b>	500	501	504	502	502	500	3,009
<b>IS</b>	100	0	100	0	100	0	300
<b>IT</b>	1,500	1,503	1,501	1,504	1,504	1,502	9,014
<b>LT</b>	301	0	300	0	300	0	901
<b>LU</b>	102	0	101	0	101	0	304
<b>LV</b>	200	0	200	0	201	0	601
<b>ME</b>	100	0	103	0	101	0	304
<b>MK</b>	0	0	101	0	101	0	202
<b>MT</b>	100	0	101	0	101	0	302
<b>NL</b>	800	1,001	802	1,002	803	1,002	5,410
<b>PL</b>	1,305	0	1,304	0	1,303	0	3,912
<b>PT</b>	501	802	504	803	503	802	3,915
<b>RO</b>	500	0	503	0	504	0	1,507
<b>RS</b>	0	0	0	0	200	0	200
<b>SE</b>	500	0	502	0	499	0	1,501
<b>SI</b>	200	0	200	0	201	0	601
<b>SK</b>	501	502	500	500	501	502	3,006
<b>TR</b>	0	0	302	0	300	0	602
<b>UK</b>	1,218	0	1,420	0	1,502	0	4,140
<b>Total</b>	17,075	11,720	17,979	11,725	18,257	11,724	88,480

As illustrated in table 6 not all countries are surveyed in each wave<sup>31</sup>. In particular, twelve countries surveyed in all 6 waves are selected (Austria, Belgium, Denmark, Finland, Germany,

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<sup>31</sup> SAFE is run on behalf of the ECB every six months on a given set of questions and in a limited number of euro area countries whilst a more comprehensive Survey of all 38 countries is conducted on behalf of the EC on an annual basis since 2013.

Greece, Ireland, Italy, Netherlands, Portugal, Slovakia and Spain) with total observations at 65,365 (Table 7).

*Table 7 – Sample 12 Countries*

<b>Country</b>	<b>Wave (11-16)</b>						<b>Total</b>
	H1 2014	H2 2014	H1 2015	H2 2015	H1 2016	H2 2016	
<b>AT</b>	502	801	501	803	504	802	3,913
<b>BE</b>	501	801	500	801	501	803	3,907
<b>DE</b>	1,337	1,500	1,501	1,502	1,501	1,500	8,841
<b>ES</b>	1,303	1,506	1,303	1,504	1,303	1,503	8,422
<b>FI</b>	501	500	501	500	502	501	3,005
<b>FR</b>	1,500	1,503	1,505	1,502	1,501	1,502	9,013
<b>GR</b>	501	800	501	802	501	805	3,910
<b>IE</b>	500	501	504	502	502	500	3,009
<b>IT</b>	1,500	1,503	1,501	1,504	1,504	1,502	9,014
<b>NL</b>	800	1,001	802	1,002	803	1,002	5,410
<b>PT</b>	501	802	504	803	503	802	3,915
<b>SK</b>	501	502	500	500	501	502	3,006
<b>Total</b>	9,947	11,720	10,123	11,725	10,126	11,724	65,365

This results in a sample of 65,365 firm responses the current working EU SME definition is then applied:

‘Staff headcount and financial ceilings determining enterprise categories’.

1. The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.
2. Within the SME category, a small enterprise is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million.
3. Within the SME category, a micro-enterprise is defined as an enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million.’ (EU , 2003).

Finally, all responses N/A (not applicable) and/or DK/N/A (don't know/not applicable) are removed in respect of demographic questions (age, size, ownership, sector etc.).

The remaining and usable data totals 58,732 spanning the period April 2014 to March 2017 inclusive.

*Table 8 – Final Sample*

<b>Country</b>	<b>Wave (11-16)</b>						<b>Total</b>
	H1 2014	H2 2014	H1 2015	H2 2015	H1 2016	H2 2016	
<b>AT</b>	451	724	451	733	456	716	3,531
<b>BE</b>	449	728	443	726	447	715	3,508
<b>DE</b>	1,121	1,298	1,289	1,296	1,305	1,297	7,606
<b>ES</b>	1,178	1,377	1,195	1,375	1,186	1,357	7,668
<b>FI</b>	447	443	447	446	447	445	2,675
<b>FR</b>	1,289	1,287	1,289	1,301	1,302	1,296	7,764
<b>GR</b>	481	764	475	767	472	745	3,704
<b>IE</b>	429	454	457	460	460	459	2,719
<b>IT</b>	1,403	1,405	1,398	1,394	1,378	1,398	8,376
<b>NL</b>	720	900	728	902	721	900	4,871
<b>PT</b>	465	740	477	745	471	755	3,653
<b>SK</b>	442	442	447	440	444	442	2,657
<b>Total</b>	8,875	10,562	9,096	10,585	9,089	10,525	58,732

### **3.10 Method of Analysis**

This section sets out the details of the data analysis to be utilised to answer the research questions. The research questions and the available data leads a researcher towards a narrow set of available methodologies. Firstly, two sets of literature are given specific emphasis in shaping the methodological decisions of this research; (1) empirical studies in SME finance and SME family firms (2) empirical studies which have employed the ECB SAFE dataset. Secondly, the procedures and practices used to clean and select the relevant sample are outlined. All this leads to a statistical methodology on which to test and answer the fundamental questions posed by this study.

### **3.10.1 Methodologies used in Previous Studies**

The selection of appropriate methodology is primarily influenced by the research questions, the available data, the research philosophy of a researcher, and similar previous studies in literature. There are several forms of regression used in finance research. OLS (ordinary least squares) is regularly employed (Ennew & Binks, 1995; Chittenden et al, 1996; Hall et al, 2004; Mac an Bhaird & Lucey, 2010; Lappalainen & Niskanen, 2013). However, other regression models are also used such as period SUR-pooled EGLS (Seemingly Unrelated Regression-Estimated Generalized Least Squares) (Psillaki & Daskalakis, 2009), tobit regression (Beck et al, 2008b; Di Giuli, 2011), fixed effects models (Sogorb-Mira, 2005; Burgstaller & Wagner, 2015) and poisson regression (Lawless et al., 2015).

Probit regression, which is chosen for this study (see Specification Method section 3.10.3 to follow), is also used in studies of SME financing. These include, Artola & Genre (2011) who examine evidence of both perception and actual constraint in access to finance for euro area SMEs using the SAFE survey (three waves). Similarly, Ferrando & Griesshaber (2011) use a probit specification to analyse obstacles to finance for Euro area SMEs and large firms using one wave of the SAFE survey. In a similar vein, Drakos (2013) use probit regression when assessing changes to bank loan pricing and non-price terms and condition for SMEs in eleven Eurozone countries and also used the SAFE survey (five waves). Casey & O'Toole, (2014) also used probit regression to assess if SMEs constrained for bank lending are more likely to use or apply for other external finance sources (across five SAFE survey waves). Holton et al., (2014) analysed the impact of the economic crisis on SMEs experience of the supply of and demand of bank finance in eleven Euro area countries, relying on a probit specification and on SAFE survey data from 2009 to 2011 (6 biannual waves).

In tandem with probit regression, logit regression is also used where there is a dichotomous outcome in the dataset (Riding et al., 2012; Öztürk & Mrkaic, 2014; Mc Namara et al., 2017).

Probit and logit regression models have become commonplace when analyzing cases with a binary outcome, and broadly researchers may be indifferent between the two (Allison, 1999), this was the case in this study in preliminary testing. The probit model was deemed appropriate to address the nature of the research questions and the categorical variables. Probit regression, also called a probit model, is typically used to model dichotomous or binary outcome variables. Probit while quite similar to logit regression, has a different elongated shape of the normal distributions (Feinstein & Thomas, 2002). Probit is thus chosen in place of logit as the latter uses the cumulative distribution function of the logistic distribution whereas the probit model uses the cumulative distribution function of the standard normal distribution.

### **3.10.2 Independent Variables**

Three forms of firm ownership are used in this study for comparative purposes namely family-owned SMEs, sole owners, and professionally owned firms. This enables a comparison to be conducted (a) between family-owned firms and sole owners and (b) between family-owned firms and professional owners. In addition, the robustness testing includes a comparison between family-owned SMEs and all other SMEs combined.

The opening section of SAFE is concerned with firm demographics, a necessary component for the identification and classification of firms for this study. The demographics section includes questions about the country in which the firm operates, along with firm level information such as ownership, size, age, sector, the percentage of turnover contributed by exports and firms deemed as innovators (Tables 9 and 10).

Table 9 – Ownership Variable

Variable	SAFE Questionnaire Responses	Variables coded for Analysis
<i>Ownership</i>	<p>Who owns the largest stake in your enterprise?</p> <ol style="list-style-type: none"> <li>1. Public shareholders</li> <li>2. Family or entrepreneurs<sup>32</sup></li> <li>3. Other enterprises</li> <li>4. VC/BA</li> <li>5. Sole owner</li> <li>7. Other</li> <li>8. DK/NA</li> </ol>	<p>0 – Sole Owner Firms (response 5)      1 – Professionally-owned Firms (responses 1,3,4, and 7)      2 – Family Firms (response 2)      DK/NA (response 8) removed</p>

Three age categories are used; young (0-5 years), established (5-10 years), and mature (10+ years). Similar age categories were employed by Mac an Bhaird & Lucey, (2010)<sup>33</sup> except they used four categories for firms over ten years of age. Their data, sourced from Business World ‘Next 1500’ list of firms, analysed the determinants of capital structure of Irish SMEs, controlling for firm age, firm size by turnover and industry category (Mac an Bhaird & Lucey, 2010). This breakdown of SMEs over ten years of age is not possible here due to the limitations of the data.

In terms of size the sample follows the EU SME definition based on employee numbers - micro firms (1–9), small firms (10-49) and medium-sized firms (50-249).

SAFE uses four sectors to describe the economic activity of a firm – industry, construction, trade and services. Similar sectors were used by Moritz et al., (2016); Masiak et al., (2017). Firms are identified as exporters if any of their turnover is accounted for by exports.

Likewise, firms which have reported a new or improved product development within the last 12 months are categorised as innovators.

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<sup>32</sup> Firms self-select their ownership type from the categories described above. Whilst the use of ‘family or entrepreneurs’ is somewhat unusual, it is likely nonetheless given the importance of European family-owned firms (KMU, 2008) that family firms dominate the responses and thus the error rate is considered to be very low.

<sup>33</sup> Mac an Bhaird & Lucey (2010) age categories: Less than 5 years/5-9 years/10 -14 years/15-19/20-29/30 years plus.

Table 10 – Firm-level Control Variables

Firm-level Control variables	SAFE Questionnaire Responses	Variables coded for Analysis
<i>Size</i>	What is the approximate number of employees? 1. 1-9 2. 10-49 3. 50-249 4. 250+ 9. DK/NA	1 – Micro (response 1) 2 – Small (response 2) 3 – Medium (response 3) 250+( response 4) removed and DK/NA (response 9) removed
<i>Age</i>	Approximately, how old is your enterprise? 1. 10 years + 2. 5-10 years 3. 2-5 years 4. Less than 2 years 9. DK/NA	1 – Mature (response 1) 2 – Intermediate (response 2) 3 – Young (responses 3 and 4) <sup>34</sup> DK/NA (response 9) removed
<i>Sector</i>	What is the main activity of your enterprise? 1. Industry 2. Construction 3. Trade 4. Services 9. DK/NA	1 – Industry (response 1) 2 – Construction (response 2) 3 – Trade (response 3) 4 – Services (response 4) DK/NA (response 9) removed
<i>Exports</i>	What percentage of your company's total turnover in the last year is accounted for by exports of goods and services? 1. 0% 2. Less than 25% 3. 25%-50% 4. Over 50% 9. DK	0 – Non-exporter (response 1) 1 – Exporter (responses 2,3, and 4) DK (response 9) removed
<i>Innovators</i>	During the past 12 months have you introduced a new or significantly improved product or service to the market? 1. Yes 2. No 9. DK/NA	0 – Non-innovator (response 2) 1 – Innovator (response 1) DK/NA (response 9) removed

In the absence of balance sheet data a series of proxies for firms' financial performance/financial health is used similar to O'Toole et al., (2015). This involves the creation of two indices comprised of two measures, one for trading distress and one for financial distress. Table 11 shows the survey questions used, response options and the variables coded for indexation.

<sup>34</sup> Age categories combined as per O'Toole et al. (2015).

Table 11 - Indices

Indicators	SAFE Questionnaire Responses	Variables coded for Probit or Indexation
<b>Trading Distress Index (-5 to +5)</b>		
Turnover (a) Labour Costs (b) Other Costs (c) Profit (e)	<p><i>Q2 - Have the following company indicators decreased, remained unchanged or increased over the past six months?</i></p> <p>1. Increased 2. Remained unchanged 3. Decreased</p>	+1 if a/e decrease, or if b/c increase (unfavourable) 0 if a/b/c/e remain unchanged -1 if a/e increase, or if b/c decrease (favourable)
Your enterprise-specific outlook with respect to your sales and profitability or business plan (c)	<p><i>Q11 – Would you say that they have improved, remained unchanged or deteriorated over the past six months?</i></p> <p>1. Improved 2. Remained unchanged 3. Deteriorated</p>	+1 if c deteriorated (unfavourable) 0 if c remained unchanged -1 if c improved
<b>Financial Distress Index (-4 to +4)</b>		
Interest Expense (d) Debt:Assets (j)	<p><i>Q2 - Have the following company indicators decreased, remained unchanged or increased over the past six months?</i></p> <p>1. Increased 2. Remained unchanged 3. Decreased</p>	+1 if d/j increase (unfavourable) 0 if d/j remained unchanged -1 if d/j decreased
Your Enterprise's Own Capital (d) Your Enterprise's Credit History (e)	<p><i>Q11 – Would you say that they have improved, remained unchanged or deteriorated over the past six months?</i></p> <p>1. Improved 2. Remained unchanged 3. Deteriorated</p>	+1 if d/e deteriorated (unfavourable) 0 if d/e remained unchanged -1 if d/e improved

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\*Where applicable response 7 (not applicable) and/or 9 (DK/NA) have been removed.

Trading Distress controls for a firm's specific trading conditions (Table 12). The composite trading distress index is created from five questions from the SAFE survey. Specifically, the questions related to (a) changes in turnover, (b) changes in labour costs, (c) changes in other costs, (d) changes in profit, and (e) changes in sales over the past six months. Respondents were asked to indicate if these changed and scored improved (-1), unchanged (0) or deteriorated (+1). The resultant index ranges from -5 to +5, with -5 indicating a firm has reported the best possible trading scenario and +5 indicating a firm has experienced the highest level of trading distress.

The second index devised controls for the financial distress (Table 13) of a firm. This index is created from four questions from the SAFE survey relating to a firm's financial health/creditworthiness. Specifically, the questions related to (a) changes in the firms' debt-to-asset ratio, (b) changes in own capital, (c) changes in credit history, and (d) changes in interest expenses over the past six months. These questions allow the respondent to answer; improved (-1), unchanged (0), or deteriorated (+1). This index ranges from -4 to +4, with -4 indicating a firm has reported the lowest financial risk and +4 indicating a firm has experienced the highest financial risk.

*Table 12 – Trading Distress*

<b>Trading Distress</b>		
<b>-1</b>	<b>Indicator from SAFE</b>	<b>+1</b>
Increased	Changes in Turnover	Decreased
Decreased	Changes in Labour Costs	Increased
Decreased	Changes in Other Costs	Increased
Increased	Changes in Profit	Decreased
Improved	Enterprise specific outlook on sales and profit	Deteriorated
<b>-5</b>		<b>+5</b>
Least Trading Distress		Most Trading Distress

*Table 13 – Financial Distress*

<b>Financial Distress</b>		
<b>-1</b>	<b>Indicator from SAFE</b>	<b>+1</b>
Decreased	Interest Expense	Increased
Decreased	Debt to Asset Ratio	Increased
Improved	Enterprise' Own Capital	Deteriorated
Improved	Enterprise' Credit History	Deteriorated
<b>-4</b>		<b>+4</b>
Least Financial Distress		Most Financial Distress

### **3.10.3 Specification Method**

Given the research philosophy, objective, and questions combined with the available pan-European dataset a method of analysis must be chosen. As discussed earlier in this section, previously employed published methodologies have been given consideration. Several studies in similar fields routinely employ econometric tools such OLS regression, logit regression, and/or probit regression. A maximum likelihood probit model is chosen for this study given the dichotomous dependent nature of the data, whereas multinomial logistic regression can be applied for larger categorical dependent variables.

Probit and logit regression models have become commonplace when analyzing cases with a binary outcome, and broadly researchers may be indifferent between the two (Allison, 1999). The probit model was deemed appropriate to address the nature of the research questions and the categorical variables. Probit regression, also called a probit model, is typically used to model dichotomous or binary outcome variables. Probit while quite similar to logit regression, has a different elongated shape of the normal distributions (Feinstein & Thomas, 2002). Probit is thus chosen in place of logit as the latter uses the cumulative distribution function of the logistic distribution whereas the probit model uses the cumulative distribution function of the standard normal distribution. This study uses the probit regression model to firstly establish the financing preferences of European family-owned SMEs in contrast to sole owners and professionally owned SMEs and secondly, to test for evidence of any constraints in accessing finance. In addition, a number of robustness tests are completed, including OLS.

### **3.10.4 Probit Model used for research question 1**

Research question 1<sup>35</sup> is assessed quantitatively using question 4 from EC/ECB's SAFE (Table 14). Participants are asked about the various sources of finance used, not used or not relevant during the previous 6 months. The sources include (a) retained earnings/sale of assets, (b)

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<sup>35</sup> A copy of the EC/ECB SAFE questionnaire is included in the appendices (ECB, 2014)

grants or subsidised bank loans (c) bank overdrafts, credit line or credit card overdrafts (d) bank loans (e) trade credit (f) other loans e.g. family and friends or from related company (g) leasing or hire purchase (h) debt securities (i) equity capital (j) other sources e.g. crowd-funding (k) factoring.

The responses are converted to binary variables (Table 14) to evaluate the relevance and usage of each source within the last 6 months.

*Table 14 – RQ1 Dependent Variable*

SAFE Question	SAFE Responses	Variables coded for Probit
Q4. Have you used the following in the past six months?	1. Yes 2. No 7. No, this source is not relevant to my enterprise. 9. DK 99. DK	Binary variable: 1 = Yes (1) 0 = No (2) and No, this source is not relevant to my enterprise (7)
<i>Retained earnings (a)</i>		
<i>Grants or subsidised bank loans (b)</i>		
<i>Credit line, bank overdraft or credit cards (c)</i>		
<i>Bank loan, both short and long term (d)</i>		
<i>Trade credit (e)</i>		
<i>Other loan (f)</i>		
<i>Debt securities issued (h)</i>		
<i>Equity capital (j)</i>		
<i>Leasing or hire-purchase (m)</i>		
<i>Factoring (r)</i>		
<i>Other sources of financing (p)</i>		

To establish the financing preferences of European family-owned SMEs in contrast to sole owners and professionally owned SMEs in the sample and to test the hypotheses of research question 1, the following model estimates the usage of various sources of credit by firms via a maximum-likelihood Probit:

$$\text{Pr}(\text{Source Usage}_a = 1) = \Phi(\beta_0 + \beta_1 \text{Firm}_{bcdef} + \beta_2 \text{Indices}_{gh} + \beta_3 \text{Macro}_{ijk})$$

Where  $\Phi$  is the cumulative normal distribution.

The dependent variable source usage is a binary variable that takes a value of 1 when a source has been used by the firm in the previous six months, if the source has not been used in that time frame it has a value of 0. There are eleven sources of finance tested, namely, retained earnings, grants and subsidised bank loans, bank credit lines, bank loans, trade credit, other loans, debt securities, equity capital, leasing and hire-purchase, factoring, and other sources.

$\beta_0$  represents firm ownership and is the key independent variable.  $\beta_1 F_{bcdef}$  are the five firm-level control variables including firm age, firm size, firm sector, exports, and innovation.  $\beta_2 I_{gh}$  represents the two compiled proxies for financial and trading distress, while  $\beta_3 M_{ijk}$  represents the three macroeconomic control variables being the corporate tax rate, the inflation rate and the GDP growth rate of each country in the final sample.

There are eleven tables in total, one for each source of finance and there are nine models in each table. Model (1) tests the impact of our different ownership categories on the likelihood of a firms using a source, followed by the addition of a control variable in all subsequent models. Tables 15 presents the models as they are displayed throughout the findings Chapter.

Table 15 – Equations under RQ1

Model	→	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)	Model (9)
Firm Ownership	X	X	X	X	X	X	X	X	X	X
Firm Age		X	X	X	X	X	X	X	X	X
Firm Size			X	X	X	X	X	X	X	X
Firm Sector				X	X	X	X	X	X	X
Exporter					X	X	X	X	X	X
Innovator						X	X	X	X	X
Trading Distress							X	X	X	X
Financial Distress								X	X	X
Corp Tax Rate										X
Inflation Rate										X
GDP Growth Rate										X

The models displayed in Table 15 start with firm ownership which has three potential values: family-owned, sole owners, and professionally owned SMEs. There are three categorical explanatory firm variables, two of which are ordinal in nature; firm age (years old), firm size

(number of employees), and firm sector. Two further controls are dummy variables for firm exports and firm product innovation.

For the purpose of interpreting the marginal effects for firm ownership, sole owner or professionally owned firms are set as the base category. The two ordinal variables use the smallest category as the base and are then presented in increasing order i.e., firms aged 0-5 years are the base category, with firms aged 5-10 years shown in the first line of the firm age section, and finally firms aged over 10 years. This is repeated for the second ordinal variable; firm size. Firm sector has four possible values: industry, construction, trade, and services. As these firms are not ordered in any particular way, industry which is the first category assigned from the EC/ECB SAFE coding is set as the base category. Firm exports is a dummy variable equals to 1 when exports account for any of a firm's turnover in the prior six months and equal to 0 when a firm has no export activity. Finally, product innovation is a dummy variable equals to 1 when a firm has produced a new or improved product in the previous six months and equal to 0 when it has not.

The two firm level distress indices (trading distress and financial distress) are introduced as regressor in model (7) and model (8). These composite indices are created to measure their influence on finance usage by SMEs.

The final model (9) of Table 15 has three macroeconomic controls<sup>36</sup>. These include corporate tax rate, inflation rate and GDP growth rate, all shown in percentage terms. As an alternative specification for model (9) single country dummies are used in place of the macroeconomic controls, as outlined below:

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<sup>36</sup> Corporate Tax rate of each country is sourced from KPMG, 2000; Inflation Rate source is Eurostat, 2000 and the GDP growth rate is obtained from OECD, 2000.

$$\Pr(\text{Source Usage}_a = 1) = \Phi(\beta_0 + \beta_1 \text{Firm}_{bcdef} + \beta_2 \text{Indices}_{gh} + \beta_3 \text{CountryDummies})$$

Where  $\Phi$  is the cumulative normal distribution.

### 3.10.5 RQ1 Response levels

Whilst the final sample selection for this research totals 58,732 (Table 8) the actual response levels vary according to the individual component of each question. Specifically, as illustrated below in Table 16 respondents to the retained earnings source in question four amounted to 47,820 in the comparison of family-owned SMEs (FF) and solely owned firms (SO), whilst 36,014 responses were made when family firms are contrasted with professionally owned SMEs (pro-owners). This variance of responses differs for each finance source and in the comparatives across firm ownership.

The response levels for research question one is impacted by the number of responses to the firm innovator question. The innovator variable is introduced in model 6 for each finance source. This question is not asked of each respondent in each wave<sup>37</sup> resulting in a drop of circa 46% in the innovator sample size in model 6 of each Table. For example, for retained earnings 21,921 responses are outlined in model 6 in the comparison of family-owned SMEs with sole owners, whilst in the model 6 comparative analysis of family firms and professionally owned SMEs for the same source the responses are 16,692 which represents some 46% of 36,014 responses as depicted below in Table 16.

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<sup>37</sup> SAFE is run on behalf of the ECB every six months on a given set of questions, which do not include the innovation question. The innovator question is asked in the more comprehensive Survey of all 38 countries conducted on behalf of the EC on an annual basis since 2013. Thus, the innovation question is only asked in every second wave.

Table 16 – RQ1 Sample Response Levels

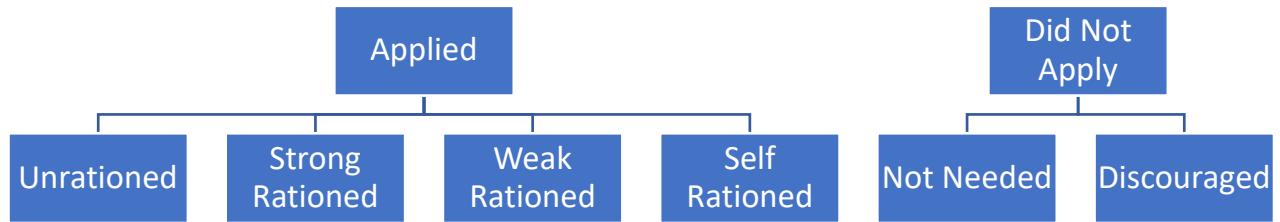
	<b>FF compared to SO</b>	<b>FF compared to Pro. Owners</b>
	N =	N =
<b>Retained Earnings</b>	47,820	36,014
<b>Grants</b>	48,078	36,187
<b>Bank Credit Lines</b>	48,761	36,683
<b>Bank Loans</b>	48,482	36,497
<b>Trade Credit</b>	48,311	36,389
<b>Other Loans</b>	48,212	36,208
<b>Debt Securities</b>	47,699	35,859
<b>Equity Capital</b>	47,651	35,849
<b>LHP</b>	48,556	36,537
<b>Factoring</b>	47,806	35,979
<b>Other Sources</b>	47,313	35,481

### 3.10.6 Probit model used for research question 2

This section addresses research question two. RQ2 tests for evidence of any credit rationing/constraint. More specifically, analysis is conducted on the likelihood of applications, discouragement, self-sufficiency and credit or price rationing. Research question 2 is also answered quantitatively using SAFE data. Financing preferences influence decisions on where and when applications for credit are made. A credit decision comes from applications received by lenders/suppliers. This decision is then compared with a firm's perception of the willingness of banks to lend. In other words, the firm may anticipate the likelihood of financing constraint. Thus, the relationship between these questions facilitates a conceptual design to address research question 2.

Figure 2 below displays the process of a firm's decision in making an application for finance, or being discouraged from doing so, receiving everything sought of the provider (unrationed), strong rationed (refusal of the total credit sought) or weak rationed (received only a portion of the credit sought) or finally a firm deciding to self-ration for cost reasons.

Figure 2 Application and Outcomes Decision Tree



Source: The Author

The responses are again converted to binary variables (Table 17) to evaluate the likelihood of financing constraint.

Table 17 – RQ2 Dependent Variable

Dependent variables	SAFE Questionnaire Responses	Variables coded for Probit or Indexation
<i>Bank Loans (a)</i>	Q7A - Have you applied for the following types of financing in the past six months?	1= Applied (1) 0= Did not apply (2,3,4)
<i>Trade Credit (b)</i>		
<i>Other External Financing (c)</i>	1. Applied	
<i>Bank Credit Lines (d)</i>	2. Did not apply because possible rejection 3. Did not apply because sufficient internal funds 4. Did not apply for other reasons 9. DK/NA	1= Discouraged (2) 0=
		1= Self-sufficient (3) 0=
		9 removed
<i>Bank Loans (a)</i>	Q7B - If you applied and tried to negotiate for this type of financing over the past six months, what was the outcome? Please provide a separate answer in each case.	0= Credit constrained (3,4,5,6) 1= Received everything (1)
<i>Trade Credit (b)</i>		
<i>Other External Financing (c)</i>		8 application still pending – removed
<i>Bank Credit Lines (d)</i>	1. Received everything - unrationed 5. Received 75%+ - weak rationed 6. Received less than 75% - weak rationed 3. Refused as cost too high - self rationed 4. Was rejected – strong rationed	9 DK - removed

Each of these are analysed against firm ownership and the same control variables used in research question one. Four financing sources are analysed in this section. The four sources are

bank loans, bank credit lines, trade credit and other sources. Table 18 below summarises the various models.

To test the hypotheses of research question two, the following model estimates the likelihood of credit constraint using a maximum-likelihood Probit:

$$\Pr(Y = 1) = \Phi(\beta_0 + \beta_1 \text{Firm}_{bcdef} + \beta_2 \text{Indices}_{gh} + \beta_3 \text{Macro}_{ijk})$$

Where  $\Phi$  is the cumulative normal distribution.

For each of the four financing sources dependent variable  $Y = 1$  if a firm has applied for, or is discouraged, or does not need the source, these are demand-side decisions by firms of whether or not to apply for a finance source (models 1 - 3), while  $Y = 1$  also applies to the outcomes of applications in models 4 – 7.

Specifically, model 1 assesses the likelihood of a firm applying for a source; model 2 tests for the likelihood of a firm needing the finance while model 3 analysis the likelihood of an SME being discouraged from applying. Model 4 tests the likelihood of a firm receiving all funds sought (unrationed); model 5 assesses the likelihood of outright rejection by the supplier (strong rationed); model 6 analysis the likelihood of partial allocation of funds (weak rationed) and finally, model 7 tests for the likelihood of borrower refusal to take the monies due for cost reasons (self-rationed).

$\beta_0$  represents firm ownership and is the key independent variable.  $\beta_1 \text{Firm}_{bcdef}$  are the five firm-level control variables, which are firm age, firm size, firm sector, exports, and innovation.  $\beta_2 \text{Indices}_{gh}$  represents the two proxies for financial and trading distress, while  $\beta_3 \text{Macro}_{ijk}$  represents the three macroeconomic control variables.

In total, seven models are used to compare European family-owned SMEs with sole owners, followed by a like comparison with professionally managed firms.

Table 18 – Equations under RQ2

Model →	Applied	Not needed	Discouraged	Received all	Strong Ration	Weak Ration	Self-Ration
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Firm Ownership	X	X	X	X	X	X	X
Firm Age	X	X	X	X	X	X	X
Firm Size	X	X	X	X	X	X	X
Firm Sector	X	X	X	X	X	X	X
Exporter	X	X	X	X	X	X	X
Innovator	X	X	X	X	X	X	X
Trading Distress	X	X	X	X	X	X	X
Finance Distress	X	X	X	X	X	X	X
Corp Tax Rate	X	X	X	X	X	X	X
Inflation Rate	X	X	X	X	X	X	X
GDP Growth Rate	X	X	X	X	X	X	X

### 3.10.7 RQ2 Response levels

The final sample selection for this study totals 58,732 (Table 8), the actual response levels differ according to the individual aspects of each question. Specifically, as illustrated below in Table 19 respondents to the applications for bank credit lines in question 7a comes to 12,688 family-owned SMEs are contrasted with solely owned firms, whilst 9,687 firms responded to the same question in the comparison of family firms are contrasted with professionally owned SMEs. This variance of responses is repeated for each finance source and in the comparatives across firm ownership.

Question 7b enquires about the outcome of the applications (Models 4 to 7 in each probit Table for research question two). Thus, if a firm did not apply the response levels for the outcomes are considerably lower as illustrated below in Table 19. The percentage reduction in the response levels vary between 16% and 34% depending on the finance source being queried.

Table 19 – RQ2 Sample Response Levels

	Bank Credit Lines		Bank Loans	
	FF/SO*	FF/PO**	FF/SO	FF/PO
<b>Applied</b>	12688	9587	14734	11190
<b>Not Needed</b>	12688	9587	14734	11190
<b>Discouraged</b>	12688	9587	14734	11190
<b>Received in Full</b>	3846	3001	4012	3241
<b>Strong Rationed</b>	3846	3001	4012	3241
<b>Weak Rationed</b>	3846	3001	4012	3241
<b>Self-Rationed</b>	3846	3001	4012	3241
	Trade Credit		Other Sources	
	FF/SO	FF/PO	FF/SO	FF/PO
<b>Applied</b>	8411	6849	13451	10786
<b>Not Needed</b>	8411	6849	13451	10786
<b>Discouraged</b>	8411	6849	13451	10786
<b>Received In Full</b>	2608	2334	2191	1953
<b>Strong Rationed</b>	2608	2334	2191	1953
<b>Weak Rationed</b>	2608	2334	2191	1953
<b>Self-Rationed</b>	2608	2334	2191	1953

\*Family-owned SMEs v Solely owned SMEs. \*\* Family-owned SMEs v Professionally owned SMEs.

### 3.11 Sample Descriptive Statistics

This section presents an overview of the key firm characteristics which are included in the various empirical tests. Table 20 overleaf sets-out the survey responses to firm characteristics, starting with firm ownership and then including firm age, firm size, firm sector, firm exports as a percentage of turnover and innovation. Tables 21, 22, and 23 (pages 151 – 153) provide a summary of the distribution of firm ownership in the 12 EU countries included in the sample and the geographic and economic sub-division regarding the so-called PIIGS nations. PIIGS is an acronym used, mainly in media and political fields, to refer to 5 EU member states and members of the Eurozone namely Portugal, Ireland, Italy, Greece and Spain (Brazys & Hardiman, 2015). These countries experienced severe economic and financial trauma during the economic/financial crisis (2007/2008) and the subsequent sovereign debt crisis which unfolded. Whilst the other seven countries experienced economic and financial difficulties, it is widely accepted that the distress was at a much lower level (Ferrando et al., 2017). PIIGS and non-PIIGS will be referred to as distressed and non-distressed economies henceforth respectively. Table 24 on page 156 presents a breakdown of the two indices used in the study

together with key macro-economic variables relating to corporation tax, inflation and GDP growth. Finally, Tables 25-26 (pages 159 and 160) sets out the key demographic statistics in terms of family firm ownership only across all countries.

Table 20 – Descriptive Statistics, Full Sample & Ownership Types

	Full Sample			Family Firms			Sole Owners			Professional Owners		
Variable	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.
Family Firms	58346	0.461	0.498									
Sole Owners	58346	0.373	0.484									
Other Owners <sup>38</sup>	58346	0.166	0.372									
Austria	58479	0.060	0.238	26918	0.047	0.211	21743	0.080	0.272	9685	0.052	0.222
Belgium	58479	0.060	0.237	26918	0.054	0.225	21743	0.060	0.238	9685	0.075	0.264
Germany	58479	0.129	0.336	26918	0.103	0.303	21743	0.168	0.374	9685	0.117	0.321
Spain	58479	0.130	0.337	26918	0.156	0.363	21743	0.098	0.298	9685	0.133	0.340
Finland	58479	0.046	0.208	26918	0.044	0.205	21743	0.043	0.202	9685	0.057	0.231
France	58479	0.133	0.339	26918	0.100	0.299	21743	0.149	0.356	9685	0.188	0.391
Greece	58479	0.063	0.243	26918	0.086	0.280	21743	0.045	0.208	9685	0.038	0.192
Ireland	58479	0.046	0.210	26918	0.051	0.221	21743	0.044	0.206	9685	0.037	0.189
Italy	58479	0.143	0.350	26918	0.177	0.382	21743	0.109	0.312	9685	0.122	0.327
Netherlands	58479	0.083	0.276	26918	0.067	0.250	21743	0.101	0.301	9685	0.087	0.282
Portugal	58479	0.062	0.241	26918	0.081	0.273	21743	0.044	0.205	9685	0.050	0.218
Slovakia	58479	0.045	0.208	26918	0.034	0.182	21743	0.059	0.235	9685	0.044	0.204
Distressed Economy	58479	0.445	0.495	26918	0.552	0.497	21743	0.340	0.474	9685	0.381	0.486
<5 Years	58479	0.055	0.228	26918	0.046	0.209	21743	0.067	0.250	9685	0.053	0.224
5-10 Years	58479	0.125	0.331	26918	0.109	0.312	21743	0.146	0.353	9685	0.125	0.330
>10 Years	58479	0.820	0.384	26918	0.845	0.362	21743	0.787	0.409	9685	0.822	0.382
Micro	58479	0.426	0.495	26918	0.404	0.491	21743	0.563	0.496	9685	0.182	0.386
Small	58479	0.310	0.462	26918	0.334	0.471	21743	0.285	0.451	9685	0.298	0.457
Medium	58479	0.264	0.441	26918	0.263	0.440	21743	0.152	0.359	9685	0.520	0.500
Industry	58479	0.237	0.425	26918	0.266	0.442	21743	0.168	0.374	9685	0.315	0.465
Construction	58479	0.114	0.318	26918	0.111	0.314	21743	0.135	0.341	9685	0.078	0.269
Trade	58479	0.263	0.441	26918	0.269	0.444	21743	0.287	0.453	9685	0.195	0.396
Services	58479	0.385	0.487	26918	0.354	0.478	21743	0.410	0.492	9685	0.411	0.492
Exporter	58479	0.458	0.498	26918	0.487	0.500	21743	0.375	0.484	9685	0.563	0.496
Innovator	26720	0.348	0.476	12576	0.359	0.480	9725	0.327	0.469	4373	0.364	0.481

<sup>38</sup> Other Owners are also referred to as professionally owned SMEs or professionally managed firms.

### **3.11.1 Firm Ownership**

Respondents are asked in the SAFE survey about the ownership of their firm in Question D6 – ‘Who owns the largest stake in your enterprise? The survey provides a choice of the following responses - one owner, family or entrepreneurs, other enterprises, public shareholders, venture capital enterprises or business angels, other, and DK/NA. Survey participants as such self-select what they deem represents their ownership category. This study focuses on three ownership types namely family-owned SMEs, sole owners, and professionally owned SMEs, comprising other enterprises such as venture capitalists and business angels. The distribution of ownership consists of family-owned SMEs (26,918 which is 46%), sole owners (21,173 or 37%), and all other SME ownerships (9,685 or 17%) from a total sample of 58,479 (Table 20). The representation across countries is Italy (14%), France (13%), Germany (13%), and Spain (13%). Netherlands accounts for 8.3% of the SME sample, while Austria, Belgium, Greece and Portugal hold between 6% and 6.3%. Lastly, Ireland and Finland have a 4.6 % representation respectively while Slovakia has the lowest representation at 4.5%. There are notable differences in family firm ownership across the 12 countries. Five countries have proportionally more family-owned SMEs, and these are Greece, Ireland, Italy, Portugal, and Spain (Tables 21-23) Greece and Portugal have the largest family-owned SME presence at approximately 63% and 60% respectively, followed by Italy (57%), Spain (55%) and Ireland (51%). Family firms in these countries, who also constitute the distressed countries, account for circa 57% of all firms in contrast to SMEs in non-distressed nations where family-owned SMEs represent circa 37%. These percentages are relatively consistent with figures presented by the European Family Businesses (2016). This report shows combined figures for sole owners and family-owned firms (firm size includes small, medium and large).

### **3.11.2 Firm Age**

Respondents in the SAFE survey are asked about the age category of their firm in Question D5. Table 20 shows the age distribution of the sample and across the various ownership types.

The profile has three ranges (0-5 years classified as young, 5-10 years classified intermediate and mature firms are over 10 years). Tables 21-23 show the cohort of firm ages across each country and in distressed/non-distressed economies. Approximately, 82% of the total sample are mature firms and the majority of the three firm ownership categories are also in the mature category. Family-owned SMEs are typically more mature, i.e. over 10 years, (85%) compared to professionally managed firms (82%) and sole owners (79%).

There is little variation for SME firms in the intermediate age category (5 –10 years) – 13% of all SMEs are represented in this age range, 15% are sole owners, 13% other SMEs and 11% are family-owned firms. Young firms (0-5 years) dominate the sole ownership category (7%) versus family-owned firms or professional owners (5%). Young SMEs (7%) are more abundant in Greece while Finland has the least (4%). Slovakian firms are most likely (20%) to be found in the 5-10 year range (intermediate category). Ireland has more mature firms (88%) in the sample than any other country.

Family-owned SMEs are more prevalent in the over 10 years category (85%) irrespective of being in a distressed or non-distressed country. Mature family-owned SMEs (Table 8) are more commonly found in Ireland (88%), followed by Spain (86%), Italy and Portugal (85%). Hence, except for Greece at 83%, the distressed economies have a greater proportion of mature family-owned SMEs (85%) than their counterparts in non-distressed economies (84%). Insignificant variation is shown for young family-owned SMEs across the geographic reach. Slovakian family-owned firms (21%) have the greatest representation in the intermediate (5-10-years) category whereas Ireland (7%) has the least.

The descriptive statistics show how family-owned SMEs are typically more mature as compared with their counterparts and in all countries included in the sample (Table 3).

### **3.11.3 Firm Size**

Question D1 of SAFE poses the question about firm size by employee numbers. The descriptive statistics for size categories of family-owned SMEs and non-family firms are displayed in Tables 20-23. Micro firms (1–9 employees) account for 43% of the sample, followed by small firms (10-49 employees) at 31% and 26% are medium-sized firms (50-249 employees). Micro firms are typically more common amongst sole owners (56%) and family-owned firms (40%). Small firms are more prevalent amongst family-owned SMEs (33%) and professionally managed firms (30%). Professionally managed SMEs are more prolific in the medium category (52%) of the sample.

Greece has the largest representation of micro firms (63%) while Germany has the largest number of small firms (37%). In the medium size category Germany has the biggest share (37%) and again Greece is shown to have the lowest representation (15%). Micro firms are more prevalent in the distressed nations (50%) whilst small and medium SMEs are more dominant in the non-distressed countries (33% and 31% respectively).

Large variations are shown for micro family-owned SMEs in distressed economies at 48% of the sample compared with non-distressed countries at 31% (Tables 25-26 below). In fact, Greece (60%), Italy (50%), Portugal (47%) and Spain (45%) have more micro family-owned SMEs, except for Ireland (28%) than any of their counterparts in non-distressed territories. Germany is shown to have the smallest representation of micro family-owned SMEs (17%). Small and medium sized family-owned firms are more prevalent in non-distressed countries (35% and 34%). Small family-owned firms are more commonly found in Ireland at 39% whilst in the medium category Germany has the largest share of the sample (46%).

Family-owned SMEs are shown to have a more even distribution across the size categories (micro 40%, small 33% and medium 26%) in contrast to other ownership types.

### **3.11.4 Firm Sector**

The sector of a firm is sought in question D3 of SAFE. Approximately 39% of SMEs belong in the services sector and relatively evenly spread across family-owned firms at 36%, sole owners and professionally managed SMEs at 41% respectively (Tables 20-23). Sole owners are found to have the highest percentage of firms in the trade sector (29%). The industrial sector is more common among professional owners (32%) with family-owned SMEs at 27% and sole owners at 17%. Construction is the least preferred sector of all SMEs (11%) irrespective of ownership type.

The services sector is shown as the dominant sector across all countries except for Greece who are found to have a stronger presence in trade (45%). The Netherlands (45%) followed by Finland (44%) and Spain (43%) have the largest services sector representation. Italian SMEs (33%) are more common in the industrial category while Greece (14%) have the lowest industry sector representation. Construction is typically the least common sector across all countries. Slovakian SMEs in the sample (15%) have the most construction firms while Italy (8%) has the least. Trade is more prevalent among Greek first (45%) yet less important for Finnish SMEs (17%).

For family-owned firms' services once again is the most popular sector for nearly all countries including distressed (35%) and non-distressed groups (37%). (Tables 25-26). The exceptions are found in Greek family-owned firms who are more dominant in the trade sector (46%), Italians in the industry sector (37%) whilst Irish (36%) and Belgian SMEs (32%) are equally represented in trade and services sectors. Finnish family-owned firms have the strongest representation in the services sector. Italian family-owned firms (37%) are strongly represented in the industrial sector as are German firms (30%) with Greece lowest (16%).

### **3.11.5 Firm Exports**

Question D7 seeks information on the percentage of a firm's turnover represented by exports in the previous year. The distribution of firm exports as a percentage of sales are shown in Tables 20-23. Approximately 46% of the sample are exporters. Family-owned SMEs' exhibit a similar distribution to the total sample in that 49% can be classified as exporters in contrast to 38% of sole owners and 56% of professionally managed firms. Sole owners are shown to rely less on export activity in contrast to family-owned and other SMEs.

Some differences appear across countries. SMEs in Austria (58%), Belgium (53%) and Portugal (52%) are the most dominant exporters whereas firms with the lowest export profile are in France (38%), Ireland (41%) and Spain (42%).

### **3.11.6 Firm Innovation**

In question Q1 of SAFE respondents are asked if they have launched a new or significantly improved product or service to the market in the previous year. Descriptive statistics of firm innovation are shown in Tables 20-23. Approximately 35% of all firms in the sample can be classed as innovative, with family-owned firms and professionally managed SMEs slightly higher at 36% respectively whereas sole owner innovation is 33% (Table 20).

From a country perspective (Tables 20-23), Finnish SMEs are shown to be the most innovative (48%) followed by Portuguese (45%) and Italian firms (40%). The least innovative are in France (28%) closely followed by Belgium and Germany (29% each). Firms in distressed economies appear more innovative (38%), largely driven by Italy and Portugal, compared with the non-distressed group (32%).

In terms of ownership, family-owned SMEs in Finland are shown to be strong innovators (50%) together with Portugal (43%). The least innovative family-owned firms are in France (28%), Belgium and the Netherlands (29%) each. Once again family-owned SMEs in distressed

countries have a stronger innovation focus (37%) in contrast to their counterparts in non-distressed nations (33%), largely driven by France, Belgium and the Netherlands.

In summary, family-owned SMEs are shown to be more innovative across most countries in the sample.

Table 21 – Descriptive Statistics – Austria, Belgium, Germany, Spain, & Finland

	Austria				Belgium				Germany				Spain				Finland			
Variable	Obs.	Mean	Std. Dev.		Obs.	Mean	Std. Dev.		Obs.	Mean	Std. Dev.		Obs.	Mean	Std. Dev.		Obs.	Mean	Std. Dev.	
Family Firms	3514	0.359	0.480		3482	0.416	0.493		7551	0.366	0.482		7627	0.551	0.497		2668	0.446	0.497	
Sole Owners	3514	0.498	0.500		3482	0.376	0.484		7551	0.484	0.500		7627	0.280	0.449		2668	0.349	0.477	
Pro. Owners	3514	0.143	0.350		3482	0.209	0.407		7551	0.150	0.357		7627	0.169	0.375		2668	0.206	0.404	
<5 Years	3522	0.058	0.233		3491	0.052	0.223		7570	0.061	0.240		7643	0.051	0.220		2672	0.046	0.210	
5-10 Years	3522	0.132	0.338		3491	0.114	0.318		7570	0.115	0.318		7643	0.110	0.313		2672	0.124	0.329	
>10 Years	3522	0.810	0.392		3491	0.833	0.373		7570	0.824	0.381		7643	0.839	0.368		2672	0.830	0.376	
Micro	3522	0.339	0.473		3491	0.439	0.496		7570	0.266	0.442		7643	0.476	0.499		2672	0.363	0.481	
Small	3522	0.357	0.479		3491	0.304	0.460		7570	0.367	0.482		7643	0.302	0.459		2672	0.338	0.473	
Medium	3522	0.304	0.460		3491	0.256	0.437		7570	0.367	0.482		7643	0.222	0.416		2672	0.299	0.458	
Industry	3522	0.201	0.401		3491	0.211	0.408		7570	0.254	0.435		7643	0.209	0.407		2672	0.260	0.439	
Construction	3522	0.146	0.353		3491	0.135	0.342		7570	0.131	0.338		7643	0.096	0.294		2672	0.134	0.340	
Trade	3522	0.243	0.429		3491	0.283	0.450		7570	0.215	0.411		7643	0.268	0.443		2672	0.167	0.373	
Services	3522	0.409	0.492		3491	0.371	0.483		7570	0.401	0.490		7643	0.427	0.495		2672	0.440	0.496	
Exporter	3522	0.580	0.494		3491	0.529	0.499		7570	0.462	0.499		7643	0.418	0.493		2672	0.437	0.496	
Innovator	1342	0.360	0.480		1318	0.294	0.456		3667	0.293	0.455		3523	0.328	0.470		1336	0.477	0.499	

Table 22 – Descriptive Statistics – France, Greece, Ireland, Italy, & Netherlands

Variable	France			Greece			Ireland			Italy			Netherlands		
	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.
Family Firms	7731	0.347	0.476	3667	0.631	0.483	2708	0.511	0.500	8316	0.573	0.495	4834	0.373	0.484
Sole Owners	7731	0.419	0.493	3667	0.268	0.443	2708	0.356	0.479	8316	0.285	0.451	4834	0.452	0.498
Pro. Owners	7731	0.235	0.424	3667	0.101	0.302	2708	0.133	0.340	8316	0.142	0.349	4834	0.175	0.380
<5 Years	7752	0.058	0.234	3674	0.075	0.263	2711	0.048	0.214	8335	0.049	0.215	4839	0.055	0.229
5-10 Years	7752	0.127	0.333	3674	0.139	0.346	2711	0.076	0.264	8335	0.120	0.325	4839	0.143	0.350
>10 Years	7752	0.815	0.389	3674	0.786	0.410	2711	0.876	0.329	8335	0.831	0.374	4839	0.802	0.399
Micro	7752	0.397	0.489	3674	0.628	0.483	2711	0.346	0.476	8335	0.531	0.499	4839	0.386	0.487
Small	7752	0.317	0.465	3674	0.227	0.419	2711	0.340	0.474	8335	0.284	0.451	4839	0.304	0.460
Medium	7752	0.287	0.452	3674	0.146	0.353	2711	0.314	0.464	8335	0.185	0.388	4839	0.310	0.463
Industry	7752	0.261	0.440	3674	0.142	0.349	2711	0.165	0.371	8335	0.330	0.470	4839	0.168	0.374
Construction	7752	0.124	0.329	3674	0.090	0.286	2711	0.111	0.314	8335	0.082	0.274	4839	0.120	0.325
Trade	7752	0.268	0.443	3674	0.452	0.498	2711	0.331	0.471	8335	0.223	0.416	4839	0.266	0.442
Services	7752	0.347	0.476	3674	0.316	0.465	2711	0.393	0.488	8335	0.366	0.482	4839	0.447	0.497
Exporter	7752	0.377	0.485	3674	0.462	0.499	2711	0.414	0.493	8335	0.459	0.498	4839	0.459	0.498
Innovator	3852	0.282	0.450	1392	0.402	0.491	637	0.342	0.474	4126	0.402	0.490	2134	0.313	0.464

Table 23 – Descriptive Statistics – Portugal, Slovakia, Distressed Economies, & Non-distressed Economies

Variable	Portugal			Slovakia			Distressed Economies			Non-Distressed Economies		
	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.
Family Firms	3621	0.603	0.489	2627	0.351	0.477	25939	0.573	0.495	32407	0.372	0.483
Sole Owners	3621	0.263	0.440	2627	0.488	0.500	25939	0.285	0.452	32407	0.443	0.497
Pro. Owners	3621	0.134	0.341	2627	0.161	0.368	25939	0.142	0.349	32407	0.185	0.388
<5 Years	3632	0.049	0.216	2638	0.052	0.221	25995	0.053	0.224	32484	0.056	0.230
5-10 Years	3632	0.139	0.346	2638	0.204	0.403	25995	0.118	0.322	32484	0.132	0.338
>10 Years	3632	0.812	0.391	2638	0.745	0.436	25995	0.829	0.376	32484	0.812	0.391
Micro	3632	0.494	0.500	2638	0.446	0.497	25995	0.504	0.500	32484	0.364	0.481
Small	3632	0.281	0.450	2638	0.276	0.447	25995	0.287	0.452	32484	0.328	0.470
Medium	3632	0.224	0.417	2638	0.279	0.448	25995	0.209	0.407	32484	0.308	0.462
Industry	3632	0.262	0.440	2638	0.268	0.443	25995	0.241	0.428	32484	0.234	0.423
Construction	3632	0.100	0.300	2638	0.149	0.356	25995	0.093	0.290	32484	0.131	0.338
Trade	3632	0.269	0.443	2638	0.263	0.440	25995	0.286	0.452	32484	0.245	0.430
Services	3632	0.369	0.483	2638	0.320	0.467	25995	0.380	0.485	32484	0.389	0.488
Exporter	3632	0.519	0.500	2638	0.514	0.500	25995	0.451	0.498	32484	0.463	0.498
Innovator	1386	0.451	0.498	1307	0.390	0.488	11764	0.379	0.485	14956	0.324	0.468

### **3.11.7 Indices proxies**

The indices (Table 24 overleaf) depict the demographic data covering firm trading distress, firm financial distress and the three macroeconomic variables.

Firstly, SMEs in the Netherlands, Slovakia, Germany and Spain have the strongest trading conditions while those firms experiencing the weakest trading conditions appear in Greece, France and Italy. Family-owned SMEs have lower trading distress in contrast to sole-owners, but professionally owned firms have considerably less trading distressed firms than both family firms and solely owned SMEs. Those SMEs domiciled in the distressed countries (PIIGS) are shown to have greater levels of trading distress compared to firms in non-distressed economies.

A similar trend is displayed for firms experiencing financial distress. The Netherlands has the least financially distressed firms followed by Germany and Belgium. Greece once again is shown to have much more financially distressed firms than SMEs in other countries. Those firms in the PIIGS nations appear to experience greater levels of financial distress. Lower levels are found in professionally owned SMEs compared to sole-owners and family firms.

Corporate tax rates are higher in Belgium, France and Italy whilst notably Ireland has by far the lowest rates in contrast to all other countries. Little difference is shown for firm ownership or for distressed and non-distressed countries.

Greece, Spain and Slovakia are found to have a very low inflationary environment as are SMEs in the distressed nations. Family-owned firms experience lower inflation rates in contrast to solely owned SMEs and professional-owners.

While GDP growth rates are generally modest, higher on average levels are found in the distressed countries which suggests some recovery following the economic crisis. Ireland, one of the distressed nations, appears to have the strongest growth levels in contrast to the other countries.

In sum, trading and financial distress appears stronger in distressed countries whilst professionally owned SMEs suffer the lowest levels. Finally, Ireland is found to have the lowest levels of corporate tax and the strongest GDP growth rates.

Table 24 – Indices & Macroeconomic Indicators by Country and Ownership Type

Variable	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.
<b>Total Sample</b>															
Trad. Dis.	58479	0.578	2.083	3592	0.581	1.967	3563	0.542	2.123	7753	0.263	1.841	7771	0.308	2.047
Fin. Dis	58479	-0.42	1.600	3592	-0.660	1.524	3563	-0.718	1.650	7753	-0.853	1.480	7771	-0.365	1.466
Corp. Tax	58479	0.275	0.053	3592	0.250	0.000	3563	0.340	0.000	7753	0.297	0.001	7771	0.277	0.021
Inflation	58479	0.18	0.562	3592	1.090	0.276	3563	0.960	0.562	7753	0.422	0.266	7771	-0.390	0.182
GDP Growth	58479	0.020	3.261	3592	0.011	0.287	3563	0.014	0.047	7753	0.018	0.095	7771	0.027	0.920
<b>Finland</b>															
Trad. Dis.	2698	0.373	2.020	7882	1.194	2.157	3764	1.476	2.135	2766	0.000	1.994	8479	0.980	2.052
Fin. Dis	2698	-0.579	1.480	7882	-0.140	1.647	3764	0.367	1.537	2766	-0.644	1.468	8479	0.028	1.658
Corp. Tax	2698	0.200	0.000	7882	0.333	0.000	3764	0.280	0.014	2766	0.125	0.000	8479	0.314	0.000
Inflation	2698	0.487	0.568	7882	0.337	0.221	3764	-0.822	0.601	2766	0.020	0.211	8479	0.097	0.115
GDP Growth	2698	0.007	1.328	7882	0.011	0.125	3764	0.001	0.450	2766	0.130	9.012	8479	0.007	0.403
<b>Netherlands</b>															
Trad. Dis.	4933	-0.241	1.976	3716	0.580	2.033	2702	0.340	1.908	26496	0.695	2.104	33123	0.489	2.056
Fin. Dis	4933	-1.084	1.729	3716	-0.220	1.303	2702	-0.497	1.293	26496	-0.144	1.548	33123	-0.631	1.601
Corp. Tax	4933	0.250	0.000	3716	0.217	0.009	2702	0.220	0.000	26496	0.265	0.058	33123	0.284	0.046
Inflation	4933	0.213	0.094	3716	0.330	0.350	2702	-0.303	0.161	26496	-0.152	0.472	33123	0.447	0.480
GDP Growth	4933	0.020	0.403	3716	0.014	0.386	2702	0.033	0.450	26496	0.026	4.738	33123	0.016	0.802
<b>Family-Owned Firms</b>															
Trad. Dis.	26918	0.587	2.081	21743	0.729	2.105	9685	0.215	1.997						
Fin. Dis	26918	-0.417	1.604	21743	-0.351	1.618	9685	-0.576	1.538						
Corp. Tax	26918	0.274	0.053	21743	0.276	0.052	9685	0.280	0.053						
Inflation	26918	0.122	0.573	21743	0.237	0.550	9685	0.211	0.543						
GDP Growth	26918	0.020	3.422	21743	0.020	3.146	9685	0.020	3.060						
<b>Sole Owners</b>															
<b>Professional Owners</b>															

### **3.11.8 Family Firm Summary Statistics**

Tables 25-26 overleaf presents the demographic statistics for family-owned SMEs across each country in the sample in terms of age, size, industry, exports and innovation. The same demographic information is provided for the cohort in distressed countries and non-distressed countries.

Greece has the youngest family-owned SMEs (<5 years), followed by Belgium and Germany. Over 20% of Slovakian family firms are between 5 and 10 years whereas Ireland appears to have the lowest representation in this age group, and the largest percentage in the over 10 years category. Little variation is shown in any of the age ranges for family firms in distressed and non-distressed economies.

In terms of firm size, Greece has the largest percentage of family firms (60%) in the micro category (1-9 employees), followed by Italy (50%) and Portugal (47%). The range of representation in the small category (10-49 employees) is approximately 31% to 39% except for Greece who only show 25% of their family firms in this size group. Notably, German family firms are represented in the medium size category (50-249 employees) more than any other country sampled. At the other end of the scale family firms in Greece (15%) and Italy (17%) have the lowest percentage in the medium category. Finally, distressed economies appear to have more micro firms (48%) whereas the non-distressed countries appear to have greater representation in the small (35%) and medium (34%) categories.

The countries with the biggest presence in the industrial sector are Italy (37%), Germany (30%) and Finland (29%). Family-owned SMEs in Slovakia have the largest share of the construction sector (16%) followed by Austria and Belgium at 15% respectively. Overall construction has the lowest sectoral representation across family firms. The trade sector is dominated by Greece (46%) followed by Ireland (36%) whereas Finnish family firms display the smallest share at

16%. Finnish family firms have the largest share of the services sector (43%) closely followed by the Netherlands (42%) and Austria (37%).

France has the lowest percentage of family-owned SMEs (42%) who export, followed by Spain and Ireland (43% and 44% respectively). Austrian, Portuguese, and German family firms are the most likely to export at 66%, 55%, and 55%, respectively.

There is a significant spread in the demographic statistics for family-owned SMEs and innovation (bringing new product or service to the market in the previous 12 months) across the countries. At the upper end Finland (50%) appear to have the most innovative firms followed by Portugal (43%) and Greece (40%) whereas French family firms are shown to be the least innovative (28%) followed by the Netherlands and Belgium at 29% respectively. Finally, family-owned SMEs in distressed economies (37%) are shown to be more innovative than their counterparts in the non-distressed countries (33%).

Table 25 – Family Firm Summary Statistics

Austria				Belgium				Germany				Spain				Finland			
Variable	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	
<5 Years	1263	0.044	0.206	1447	0.053	0.223	2761	0.052	0.222	4202	0.044	0.204	1189	0.040	0.196				
5-10 Years	1263	0.114	0.318	1447	0.110	0.312	2761	0.091	0.288	4202	0.095	0.293	1189	0.119	0.324				
>10 Years	1263	0.842	0.365	1447	0.838	0.368	2761	0.856	0.352	4202	0.861	0.346	1189	0.841	0.366				
Micro	1263	0.222	0.416	1447	0.441	0.497	2761	0.165	0.372	4202	0.452	0.498	1189	0.347	0.476				
Small	1263	0.366	0.482	1447	0.307	0.461	2761	0.378	0.485	4202	0.332	0.471	1189	0.378	0.485				
Medium	1263	0.412	0.492	1447	0.252	0.434	2761	0.456	0.498	4202	0.216	0.412	1189	0.275	0.447				
Industry	1263	0.246	0.431	1447	0.218	0.413	2761	0.300	0.458	4202	0.235	0.424	1189	0.291	0.454				
Construction	1263	0.152	0.359	1447	0.147	0.354	2761	0.121	0.326	4202	0.104	0.305	1189	0.127	0.333				
Trade	1263	0.231	0.422	1447	0.321	0.467	2761	0.210	0.407	4202	0.269	0.443	1189	0.155	0.362				
Services	1263	0.371	0.483	1447	0.314	0.464	2761	0.369	0.483	4202	0.392	0.488	1189	0.427	0.495				
Exporters	1263	0.664	0.472	1447	0.531	0.499	2761	0.536	0.498	4202	0.426	0.494	1189	0.472	0.499				
Innovators	537	0.384	0.487	603	0.297	0.457	1361	0.304	0.460	1981	0.329	0.470	583	0.497	0.500				
France				Greece				Ireland				Italy				Netherlands			
Variable	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	
<5 Years	2681	0.046	0.209	2314	0.054	0.226	1384	0.050	0.219	4769	0.046	0.209	1802	0.039	0.193				
5-10 Years	2681	0.103	0.304	2314	0.122	0.327	1384	0.069	0.254	4769	0.102	0.303	1802	0.141	0.348				
>10 Years	2681	0.850	0.357	2314	0.825	0.380	1384	0.880	0.325	4769	0.851	0.356	1802	0.819	0.385				
Micro	2681	0.351	0.477	2314	0.599	0.490	1384	0.281	0.449	4769	0.502	0.500	1802	0.363	0.481				
Small	2681	0.344	0.475	2314	0.247	0.431	1384	0.387	0.487	4769	0.331	0.471	1802	0.318	0.466				
Medium	2681	0.306	0.461	2314	0.154	0.361	1384	0.332	0.471	4769	0.167	0.373	1802	0.318	0.466				
Industry	2681	0.279	0.448	2314	0.157	0.364	1384	0.175	0.380	4769	0.372	0.483	1802	0.177	0.382				
Construction	2681	0.120	0.325	2314	0.097	0.295	1384	0.109	0.312	4769	0.083	0.275	1802	0.119	0.324				
Trade	2681	0.266	0.442	2314	0.455	0.498	1384	0.360	0.480	4769	0.211	0.408	1802	0.286	0.452				
Services	2681	0.335	0.472	2314	0.292	0.455	1384	0.356	0.479	4769	0.335	0.472	1802	0.418	0.493				
Exporters	2681	0.418	0.493	2314	0.471	0.499	1384	0.437	0.496	4769	0.485	0.499	1802	0.493	0.500				
Innovators	1389	0.282	0.450	899	0.404	0.491	694	0.338	0.474	2381	0.387	0.487	807	0.293	0.455				

Table 26 – Family Firm Summary Statistics Continued

Variable	Portugal			Slovakia			Distressed Economies			Non-Distressed Economies		
	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.
<5 Years	2183	0.036	0.187	923	0.049	0.216	14852	0.046	0.208	12066	0.047	0.211
5-10 Years	2183	0.117	0.322	923	0.207	0.406	14852	0.102	0.303	12066	0.118	0.322
>10 Years	2183	0.847	0.361	923	0.744	0.437	14852	0.852	0.356	12066	0.835	0.371
Micro	2235	0.472	0.499	923	0.427	0.495	14852	0.478	0.500	12066	0.313	0.464
Small	2235	0.322	0.467	923	0.326	0.469	14852	0.322	0.467	12066	0.348	0.476
Medium	2235	0.206	0.405	923	0.248	0.432	14852	0.200	0.400	12066	0.339	0.473
Industry	2235	0.293	0.455	923	0.262	0.440	14852	0.270	0.444	12066	0.258	0.437
Construction	2235	0.089	0.285	923	0.161	0.367	14852	0.094	0.292	12066	0.130	0.337
Trade	2235	0.268	0.443	923	0.246	0.431	14852	0.288	0.453	12066	0.247	0.431
Services	2183	0.351	0.477	923	0.332	0.471	14852	0.349	0.477	12066	0.365	0.482
Exporters	2183	0.545	0.498	923	0.495	0.500	14852	0.470	0.499	12066	0.335	0.472
Innovators	870	0.428	0.495	471	0.397	0.490	6825	0.373	0.484	5751	0.329	0.470

### **3.12 Summary**

The purpose of this Chapter was to present the methodological approach of the study. In the first section emphasis was placed on the philosophical orientation of the study, followed by the research objective and question. Then the research design and data collection techniques were outlined together with details of the SAFE survey. In the next section reliability, replication and validity issues were outlined. Sample selection and criteria was then presented. Next, the method of analysis was presented including the methodologies used in previous studies, the specification methods and models chosen to address the research questions. Finally, summary demographic information was presented.

The next Chapter presents the empirical results for research question one.

# **Chapter Four: Findings - Research Question 1**

## **4.1 Introduction**

This Chapter presents the findings for research question one which seeks to analyse the sources of finance used by European family-owned SMEs compared to non-family SMEs. A total of eleven different sources of finance are investigated ranging from retained earnings, grants and subsidised bank loans, various sources of bank finance, other loans, trade credit, leasing and hire purchase, factoring, equity to other sources using probit regression. The Chapter is organised as follows. Section 4.2 displays the descriptive statistics for the responses pertaining to RQ1 prior to econometric testing. Section 4.3 contains the results for family-owned SMEs in contrast to solely owned SMEs. These results are examined using nine models. Model 1 has just one variable which is family ownership compared with the base being non-family firms; Model 2 controls for firm age with the base being the youngest firms, 0-5 years; Model 3 controls for firm size in terms of employee numbers with the base being micro firms (less than 10 employees); Model 4 introduces sector controls, with base set as the industrial cohort; Models 5 and 6 control for exporters and innovation, base represents non-exporters and non-innovators respectively; Models 7 and 8 control for proxies of trading distress and financial distress and finally, in Model 9 macroeconomic controls are introduced, represented by countries corporate tax rates, inflation and GDP growth.

Section 4.4 documents the results for family-owned SMEs in contrast to professionally managed SMEs employing the nine same models outlined above. Next, section 4.5 provides a comparison of the likely use of the various sources of finance for family-owned SMEs and all other SMEs. Section 4.6 introduces a family firm subsample to test for intra-family firm differences. This is followed by section 4.7 which offers an alternative specification where the

macroeconomic controls are replaced with single country dummies. Section 4.8 outlines the various robustness tests undertaken. The final section summarises the overall findings for research question one.

The findings for research question two then follow in Chapter 5.

## **4.2 Descriptive Statistics: Sources of Finance Used**

Tables 27 and 28 (overleaf) provide an overview of the responses to SAFE question 4, stratified by ownership type and country.

Bank credit lines and loans combined have the highest usage by SMEs in the overall sample of circa 61%. Family-owned SMEs are shown to use both forms of bank finance (64.5%) more than solely owned firms (56.1%) and professionally owned SMEs (59.3%). SMEs in Ireland (71.9%), Italy (70.4%) and Belgium (67.9%) are found to use more bank finance (both forms) in contrast to those in Slovakia (54.6%), the Netherlands (53.3%) and notably Greece (30.6%).

Leasing and hire purchase are the next most popular source of finance with professionally owned firms favouring this source (27.1%) more than solely owned firms (19.3%) and family-owned SMEs (21.9%). German (37.2%), Finnish (33.0%) and Austrian SMEs (29.9%) use leasing and hire purchase more than all other countries in the sample and particularly in contrast to Greek (9.6%), Italian (9.8%) and Spanish (14.3%) firms.

Trade credit is widely used by SMEs (19.0%) and family firms are shown to use this source (21.9%) more than professionally owned SMEs (20.6%) and sole owners (14.8%). SMEs in Ireland (50.5%), in Greece (33.3%) and in Spain (24.5%) report that they use this source more than SMEs in other countries and especially more than German (8.5%), French 8.9%) and Austrian (12.1%) firms.

Reliance on retained earnings is favoured more by professional owners (19%) compared to family-owned firms (17.8%) and solely owned SMEs (12%). Irish (30.4%), Austrian (19.8%) and French (19.7%) firms are found to use more retained earnings compared to other SMEs in the overall sample and considerably more than Greek and Portuguese SMEs (7.0% each) and Dutch firms at 10.6%.

Approximately 9.1% of SMEs use grants and subsidised bank loans. Family-owned SMEs use more of this particular source (10.6%) in contrast to professionally owned firms (9.2%) and solely owned SMEs (7.2%). There are significant differences in the use of grants and subsidised bank loans across the countries in the sample, ranging from 17.5% for Italian firms to 1.7% for Dutch SMEs. Moreover, Spanish (10.2%) and French (9.1%) SMEs report that they use this source more than Slovakian firms (2.9%).

The reported use of other loans, typically from family and friends, varies across firm ownership and across countries. Overall, SMEs use of other loans is 8.8%, with professionally owned firms at 11.6% compared to family-owned SMEs at 8.7% and sole owners at 7.6%. German SMEs report the highest use of this source at 11.6% followed by Irish, Dutch and Slovakian firms (10.2% each) in contrast to the lower use of other loans by French, Italian and Greek SMEs.

Professionally owned SMEs (9.5%) are shown to use factoring more than family-owned SMEs (7.6%) and solely owned firms (5.1%). French and Finnish SMEs report higher use of factoring at 12.9% and 12.3% respectively compared to Austrian firms at 3.6%. Slovakian firms (4.1%) and Dutch firms (4.4%) appear to use factoring much less.

The reported use of debt securities, equity capital and other sources of finance is small with little variation across firm ownership and countries.

In summary, family-owned SMEs report higher use of bank credit lines, bank loans, trade credit and grants and subsidised loans in contrast to professionally owned firms and solely owned SMEs.

Table 27 –Descriptives – sources of finance used

	Full Sample		Family Firms		Sole Owners		Pro Owners	
	Responses (N)	Used (%)						
<b>Ret. Earnings</b>	57,367	15.87	26,467	17.84	21,353	12.03	9,547	18.96
<b>Grants*</b>	57,657	9.07	26,608	10.58	21,470	7.16	9,579	9.16
<b>Credit Lines</b>	58,463	39.58	26,981	41.86	21,780	38.36	9,702	35.98
<b>Bank Loans</b>	58,149	20.36	26,830	22.88	21,652	17.73	9,667	19.29
<b>Trade Credit</b>	57,963	19.04	26,737	21.86	21,574	14.84	9,652	20.63
<b>Other Loans</b>	57,796	8.76	26,624	8.68	21,588	7.60	9,584	11.60
<b>Debt Sec.</b>	57,226	1.40	26,332	1.68	21,367	1.17	9,527	1.14
<b>Equity Capital</b>	57,182	1.80	26,318	1.68	21,333	1.48	9,531	2.84
<b>LHP</b>	58,253	21.79	26,840	21.90	21,716	19.30	9,697	27.07
<b>Factoring</b>	57,380	6.99	26,405	7.57	21,401	5.13	9,574	9.54
<b>Other Sources</b>	56,714	1.57	26,080	1.45	21,233	1.39	9,401	2.28
	<b>Austria</b>		<b>Belgium</b>		<b>Germany</b>		<b>Spain</b>	
	Responses (N)	Used (%)						
<b>Ret. Earnings</b>	3,506	19.85	3,413	11.43	7,557	17.72	7,391	15.15
<b>Grants*</b>	3,500	8.69	3,406	6.14	7,565	8.76	7,500	10.16
<b>Credit Lines</b>	3,543	43.38	3,480	40.09	7,619	39.91	7,587	34.07
<b>Bank Loans</b>	3,514	18.07	3,477	27.81	7,588	17.99	7,571	23.51
<b>Trade Credit</b>	3,507	12.09	3,460	13.79	7,540	8.49	7,544	24.51
<b>Other Loans</b>	3,516	8.73	3,447	9.14	7,586	11.63	7,452	8.60
<b>Debt Sec.</b>	3,501	0.11	3,425	0.23	7,558	0.12	7,338	0.07
<b>Equity Capital</b>	3,493	1.17	3,410	1.67	7,533	2.51	7,348	1.08
<b>LHP</b>	3,540	29.89	3,491	19.11	7,641	37.22	7,519	14.30
<b>Factoring</b>	3,489	3.55	3,421	5.50	7,553	3.96	7,401	8.42
<b>Other Sources</b>	3,494	1.97	3,384	1.83	7,502	2.07	7,312	2.50

\*Grants denote grants and subsidised bank loans

Table 28 –Descriptives – sources of finance used (continued)

	Finland		France		Greece		Ireland	
	Responses (N)	Used (%)	Responses (N)	Used (%)	Responses (N)	Used (%)	Responses (N)	Used (%)
<b>Ret. Earnings</b>	2,644	18.19	7,619	19.74	3,673	7.05	2,667	30.37
<b>Grants*</b>	2,604	6.68	7,684	9.07	3,702	7.81	2,661	8.61
<b>Credit Lines</b>	2,662	47.97	7,775	35.87	3,704	15.50	2,715	55.80
<b>Bank Loans</b>	2,661	18.87	7,755	27.07	3,697	15.07	2,689	16.07
<b>Trade Credit</b>	2,638	20.85	7,695	8.88	3,688	33.30	2,689	50.54
<b>Other Loans</b>	2,651	12.56	7,694	5.82	3,702	7.54	2,666	10.17
<b>Debt Sec.</b>	2,628	0.53	7,653	2.29	3,680	12.20	2,637	1.10
<b>Equity Capital</b>	2,625	2.17	7,627	2.16	3,662	2.68	2,637	1.82
<b>LHP</b>	2,673	32.96	7,775	25.56	3,703	9.56	2,707	25.08
<b>Factoring</b>	2,657	12.27	7,710	12.94	3,640	6.43	2,653	7.58
<b>Other Sources</b>	2,601	1.11	7,552	1.42	3,627	0.63	2,634	1.44
	<b>Italy</b>		<b>Netherlands</b>		<b>Portugal</b>		<b>Slovakia</b>	
	Responses (N)	Used (%)	Responses (N)	Used (%)	Responses (N)	Used (%)	Responses (N)	Used (%)
<b>Ret. Earnings</b>	8,137	17.54	4,646	10.61	3,496	6.98	2,618	12.95
<b>Grants*</b>	8,227	17.61	4,643	1.66	3,553	8.50	2,612	2.83
<b>Credit Lines</b>	8,297	45.93	4,804	42.40	3,625	40.28	2,652	42.16
<b>Bank Loans</b>	8,228	24.49	4,739	10.93	3,582	17.92	2,648	12.42
<b>Trade Credit</b>	8,243	22.50	4,753	17.86	3,576	20.22	2,630	15.17
<b>Other Loans</b>	8,184	6.18	4,719	10.24	3,541	9.23	2,638	10.31
<b>Debt Sec.</b>	8,046	0.92	4,652	0.28	3,470	0.46	2,638	0.19
<b>Equity Capital</b>	8,056	0.36	4,704	2.53	3,460	0.23	2,627	5.25
<b>LHP</b>	8,207	9.81	4,741	24.32	3,601	16.02	2,655	23.13
<b>Factoring</b>	8,067	5.29	4,652	4.36	3,501	8.03	2,636	4.06
<b>Other Sources</b>	7,991	0.41	4,648	2.75	3,363	0.95	2,606	1.15

\*Grants denote grants and subsidised bank loans

## **4.3 Sources of Finance used: Family-owned SMEs V Solely owned SMEs**

### **4.3.1 Retained Earnings**

The significance of retained earnings for family-owned SMEs compared to solely owned SMEs is documented in Table 29 overleaf. The probit coefficient for family ownership remains statistically significant at the one per cent level in each model with the magnitude of the likelihood ranging from 6.3 per cent (model 1) to 3.8 per cent (model 6) at the one per cent level. The strength of the effect is greatest in model 1 when the only indicator considered in the probit regression is the family ownership dummy. The introduction of the age variable in model 2 sees the magnitude of the ownership effect reduce marginally. A more significant reduction is evident in model 3 with the inclusion of the firm size control, reducing the effect of the ownership variable. As sector, exporter and innovator and trading distress proxies are introduced in models 4 to 7 there is a moderate decline in the ownership variable coefficient. However, the introduction of proxies for firm level financial distress and macroeconomic factors in models 8 and 9 sees the coefficient of family ownership increase again. The statistical significance of the ownership dummy throughout suggests that family-owned SMEs are more likely to use retained earnings vis a vis SME sole owner.

More mature SMEs i.e. those aged over 10 years old, are 6.23 per cent more likely to use retained earnings compared to their younger counterparts (the base firms i.e. aged 0-5 years) whilst those firms aged 5-10 years are 4.09 per cent more likely to have used retained earnings than the younger firms. Family-owned SMEs over 10 years of age are found somewhat more likely to use retained earnings (Table 53 – family-owned SMEs sample), albeit the evidence is not as strong as indicated above for all SMEs. Furthermore, both small and especially medium sized firms are more likely to use retained earnings than micro firms. Firms in the industrial sector (base) are more likely to use retained earnings compared to firms operating in all other

sectors. Specifically, firms in the services sector are 2.28 per cent less likely to use retained earnings, construction firms are 1.83 per cent less likely to use retained earnings, and trade firms are 2.19 per cent less likely to use retained earnings. Exporters are also shown to be more likely to use retained earnings in contrast to non-exporters and statistically so at the one per cent level (models 5 - 9).

Firms deemed as innovative in contrast to non-innovators are also more likely to use retained earnings. The magnitude of the innovator effect ranges from 2 per cent to 2.3 per cent and is significant at the one per cent level in all models. The introduction of the innovator dummy in model 6 lowers the likelihood of family ownership coefficient to 3.76 per cent versus 4.03 in model 5 (sample size in model 6 is 21,921 compared to 47,378 in model 5). As expected, financially distressed firms (model 8) are less likely to use retained earnings. More favourable macroeconomic conditions are found to increase a firm's likely usage of retained earnings. The introduction of the macroeconomic control variables in model 9 results in the family ownership coefficient increasing to just over 4 per cent versus 3.87 per cent in model 8.

Table 29 - Retained Earnings – Family-owned SMEs v solely owned SMEs

	Retained Earnings								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0629*** (17.40)	0.0607*** (16.76)	0.0435*** (11.96)	0.0424*** (11.62)	0.0403*** (10.97)	0.0376*** (7.27)	0.0375*** (7.26)	0.0387*** (7.52)	0.0416*** (8.05)
5-10 Years		0.0409*** (5.21)	0.0406*** (4.79)	0.0408*** (4.80)	0.0369*** (4.26)	0.0230** (1.98)	0.0233** (2.02)	0.0199* (1.72)	0.0207* (1.79)
>10 Years		0.0623*** (9.63)	0.0426*** (6.04)	0.0421*** (5.95)	0.0391*** (5.39)	0.0370*** (3.79)	0.0377*** (3.88)	0.0353*** (3.59)	0.0354*** (3.61)
Small			0.0612*** (14.92)	0.0591*** (14.31)	0.0571*** (13.65)	0.0597*** (10.09)	0.0588*** (9.91)	0.0521*** (8.77)	0.0502*** (8.43)
Medium				0.1477*** (26.63)	0.1414*** (24.88)	0.1340*** (23.30)	0.1287*** (15.95)	0.1269*** (15.64)	0.1136*** (14.12)
Construction					-0.0183*** (-2.59)	-0.0003 (-0.04)	0.0076 (0.73)	0.0079 (0.76)	0.0112 (1.07)
Trade						-0.0109* (-1.88)	-0.0072 (-0.89)	-0.0070 (-0.86)	-0.0084 (-1.04)
Services							-0.0099 (-1.32)	-0.0103 (-1.37)	-0.0104 (-1.39)
Exporters						0.0340*** (8.66)	0.0276*** (4.97)	0.0269*** (4.83)	0.0260*** (4.68)
Innovators							0.0207*** (3.79)	0.0201*** (3.67)	0.0207*** (3.80)
Trading Distress								-0.0023* (-1.85)	0.0039*** (2.86)
Financial Distress									-0.0191*** (-11.17)
Corp Tax Rate									0.0065*** (8.18)
Inflation Rate									0.0105* (1.85)
GDP Growth Rate									0.0083*** (5.79)
Observations	47820	47820	47820	47820	47378	21921	21921	21921	21921

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In summary, Table 29 shows how family-owned SMEs have a greater likelihood of using retained earnings and consistently so in contrast to solely owned SMEs and this likelihood remains at the one percent level throughout. Having controlled for a range of firm level and macroeconomic variables sees the magnitude of the ownership effect marginally diminish yet, the significance is constant at one percent, even when the sample size in models 6 to 9 is considerably smaller. This is due to the smaller number of respondents to the innovator variable of 21,921 (models 6 – 9) compared to 47,820 (models 1 – 4) and 47,378 (model 5). In addition, retained earnings is more likely to be used by older and larger firms, by exporters, innovators and by trading distressed firms. More favourable macroeconomic conditions are associated with the use of retained earnings also.

#### **4.3.2 Grants and Subsidised Bank Loans**

Table 30 overleaf reports the probit regression results for grants and subsidised bank loans in a similar format to Table 29 for retained earnings. Family-owned SMEs are found to be more likely to use grants and subsidised bank loans compared to sole owners in all models, having controlled for firm characteristics, and consistently so. The probit coefficients range from 3.7 per cent (model 1) to 1.7 per cent (model 9) and is significant at the one per cent level. Unsurprisingly and just as in Table 29, this effect is strongest in model 1 when the only indicator considered in the probit regression is the family ownership dummy. In the case of grants and subsidised bank loans each additional control variable sees a reduction in the ownership coefficient. The most notable impacts are in model 3 with the inclusion of firm size, and in model 6 with the introduction of firm innovation. Yet, the statistical significance of the firm ownership effect on the likelihood of using grants and subsidised bank loans remains at the one per cent level throughout.

Firm age appears to have no noticeable impact in contrast to firm size which is shown to be important across all models at the one per cent significance level. The assertion from model 3 is that small SMEs (i.e., 10-49 employees) are 4.7 per cent more likely to use grants and subsidised bank loans compared to micro firms, with the magnitude even greater for medium firms (6.8 per cent). This firm size relationship is observed in all subsequent equations and the magnitude is relatively consistent. The introduction of sector in model 4 reduces the significance of family ownership. Industrial firms (base level) do appear more likely to use the grants and subsidised loans in contrast to all other sectors.

Exporters are shown to be more likely to use grants and subsidised bank loans compared with non-export firms and this holds true in models 5 to 9 inclusive. In a similar vein, SMEs classed as innovative are more likely to rely on grants and subsidised bank loans when compared with non-innovators, and consistently so (models 6 to 9).

Table 30 - Grants and Subsidised Bank Loans – Family-owned SMEs v solely owned SMEs

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0368*** (12.46)	0.0357*** (12.06)	0.0272*** (9.13)	0.0244*** (8.19)	0.0227*** (7.53)	0.0188*** (4.43)	0.0188*** (4.44)	0.0180*** (4.26)	0.0174*** (4.08)
5-10 Years		-0.0004 (-0.06)	-0.0025 (-0.34)	-0.0028 (-0.38)	-0.0019 (-0.25)	0.0114 (1.17)	0.0112 (1.14)	0.0128 (1.31)	0.0134 (1.38)
>10 Years		0.0178*** (3.01)	0.0061 (0.96)	0.0045 (0.71)	0.0056 (0.86)	0.0134 (1.63)	0.0130 (1.57)	0.0138* (1.69)	0.0135* (1.65)
Small			0.0471*** (13.58)	0.0424*** (12.11)	0.0402*** (11.36)	0.0366*** (7.40)	0.0371*** (7.49)	0.0399*** (8.01)	0.0412*** (8.23)
Medium			0.0684*** (15.59)	0.0556*** (12.69)	0.0494*** (11.25)	0.0529*** (8.44)	0.0539*** (8.52)	0.0592*** (9.15)	0.0618*** (9.42)
Construction				-0.0481*** (-7.97)	-0.0360*** (-5.74)	-0.0324*** (-3.67)	-0.0325*** (-3.68)	-0.0336*** (-3.83)	-0.0311*** (-3.56)
Trade				-0.0427*** (-8.23)	-0.0345*** (-6.66)	-0.0332*** (-4.64)	-0.0333*** (-4.66)	-0.0326*** (-4.56)	-0.0294*** (-4.14)
Services				-0.0524*** (-10.96)	-0.0428*** (-8.88)	-0.0387*** (-5.78)	-0.0386*** (-5.76)	-0.0386*** (-5.77)	-0.0360*** (-5.45)
Exporters					0.0243*** (7.53)	0.0186*** (4.07)	0.0191*** (4.17)	0.0197*** (4.30)	0.0209*** (4.58)
Innovators						0.0350*** (8.01)	0.0354*** (8.07)	0.0350*** (7.99)	0.0357*** (8.17)
Trading Distress							0.0014 (1.34)	-0.0014 (-1.29)	-0.0022** (-1.96)
Financial Distress								0.0085*** (6.06)	0.0077*** (5.48)
Corp Tax Rate									0.0047*** (6.77)
Inflation Rate									-0.0132*** (-2.85)
GDP Growth Rate									-0.0002 (-0.14)
Observations	48078	48078	48078	48078	47603	22033	22033	22033	22033

t statistics in parentheses  
\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Just as in Table 29 earlier the introduction of the innovator dummy (model 6) reduces the family ownership coefficient and the sample size to less than half of that used in models 1 - 5.

Trading distress has little impact on the likely use of grants and subsidised bank loans. On the other hand, financially distressed firms are more likely to have used grants and subsidised bank loans in the previous 6 months (model 8). Finally, firms in countries with higher tax rates are more likely to use grants and subsidised bank loans, whereas high levels of inflation lessen the likelihood of firms using grants and subsidised bank loans.

In summary, Table 30 shows how family-owned firms are more likely to use grants and subsidised bank loans compared with sole-owner SMEs. The likelihood remains significant at

the one per cent level throughout despite a drop in the magnitude of the ownership coefficient following the introduction of the control variables for firm size and firm innovation. The youngest and notably the smallest (micro sized) SMEs appear less likely to use this particular source. In addition, and as expected larger SMEs and those exporting, deemed innovative and financially distressed firms are more likely to use grants and subsidised bank loans.

#### **4.3.3 Bank Credit Lines**

Just as with the two previous sources of finance, the results for bank credit lines are presented in Table 31 overleaf. Family-owned SMEs are shown to be always more likely to use bank credit lines compared to solely owned firms. The range of the likelihood is between 3.4 per cent (model 1) to 1.1 per cent (model 5). The effect is statistically significant, however, in all equations. The statistical significance and coefficient are greatest in model 1 when the only dummy used is firm ownership. The statistically significant at the one per cent level is constant in models 1 to 4 when controlling for ownership, firm age, firm size and sector. When the exporter variable is introduced in model 5 the magnitude and significance of the family ownership coefficient reduces somewhat. However, the inclusion of macroeconomic controls in model 9, sees an increase in the significance and the magnitude of the family ownership coefficient.

Older SMEs are shown to be more likely to use bank credit lines at the one per cent level in all equations, and this is especially true in the case of those aged over 10 years. The magnitude range for older firms is from 6.2 per cent to 8.9 per cent. As firms grow, they appear more likely to rely on bank credit lines. Small and medium firms are 7.0 per cent and 11.7 per cent respectively more likely to use bank credit lines compared to micro firms. This effect persists in all subsequent equations.

Table 31 - Bank Credit Lines – Family-owned SMEs v solely owned SMEs

	Bank Credit Lines								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0337*** (6.78)	0.0304*** (6.12)	0.0162*** (3.22)	0.0142*** (2.84)	0.0109** (2.16)	0.0180** (2.49)	0.0180** (2.49)	0.0163** (2.26)	0.0217*** (2.99)
5-10 Years		0.0550*** (4.67)	0.0524*** (4.40)	0.0525*** (4.40)	0.0469*** (3.89)	0.0508*** (3.10)	0.0508*** (3.10)	0.0554*** (3.39)	0.0568*** (3.49)
>10 Years		0.0894*** (8.95)	0.0711*** (7.00)	0.0665*** (6.53)	0.0620*** (6.00)	0.0698*** (5.01)	0.0699*** (5.02)	0.0730*** (5.27)	0.0747*** (5.39)
Small			0.0698*** (12.14)	0.0670*** (11.56)	0.0619*** (10.57)	0.0562*** (6.71)	0.0561*** (6.67)	0.0645*** (7.65)	0.0590*** (6.96)
Medium			0.1165*** (17.10)	0.1108*** (15.80)	0.1012*** (14.16)	0.0996*** (9.76)	0.0993*** (9.67)	0.1127*** (10.89)	0.1048*** (10.06)
Construction				0.0067 (0.68)	0.0290*** (2.87)	0.0521*** (3.60)	0.0522*** (3.60)	0.0493*** (3.42)	0.0489*** (3.39)
Trade				0.0030 (0.37)	0.0178** (2.17)	0.0214* (1.84)	0.0214* (1.85)	0.0234** (2.03)	0.0226* (1.95)
Services				-0.0542*** (-7.37)	-0.0374*** (-4.93)	-0.0283*** (-2.63)	-0.0283*** (-2.63)	-0.0278*** (-2.59)	0.0301*** (-2.81)
Exporters					0.0472*** (8.72)	0.0392*** (5.05)	0.0391*** (5.02)	0.0400*** (5.15)	0.0388*** (4.99)
Innovators						0.0292*** (3.79)	0.0291*** (3.77)	0.0285*** (3.71)	0.0306*** (3.97)
Trading Distress							-0.0004 (-0.21)	-0.0078*** (-4.10)	0.0079*** (-4.15)
Financial Distress								0.0223*** (9.29)	0.0240*** (9.94)
Corp Tax Rate									-0.0002 (-0.18)
Inflation Rate									0.0447*** (5.75)
GDP Growth Rate									0.0059*** (2.73)
Observations	48761	48761	48761	48761	48279	22315	22315	22315	22315

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Firms in the service sector are less likely to use bank credit lines compared with industrial firms (base level) and this is significant at the one per cent level. The introduction of the export and innovation dummies in models 5 and 6 respectively shows how exporters and innovators are more likely to use bank credit lines compared with their non-export and non-innovating counterparts. Notably, the introduction of the exporter dummy results in the ownership coefficient falling to 1.09 per cent from 1.42 per cent in model 4. Firms reporting signs of financial distress are 2.2 to 2.4 per cent more likely to have used bank credit lines in the

previous 6 months in contrast to those experiencing trading distress who are less likely to rely on such finance. Finally, more favourable macroeconomic conditions are shown to increase a firm's likelihood of using bank credit lines.

In summary, family-owned SMEs when compared with sole-owners are shown in all models to have a greater likelihood of using bank credit lines. The magnitude and significance are evident throughout even with the strong effects of firm size and firm exports. In addition, SMEs who are older, larger, export-oriented, innovative, and those experiencing financial distress are more likely to rely on shorter-term bank credit lines. As such, the youngest and smallest firms are again less likely to use this source.

#### **4.3.4 Bank Loans**

Table 32 overleaf displays the results for bank loans in a similar format to the earlier tables. Family-owned SMEs are more likely to have used bank loans in the previous 6 months compared to solely owned firms and the coefficient remains statistically significant at the one per cent level throughout. Just as in Tables 27 – 31 the magnitude of the effect is largest (5.3 per cent) when the only variable used in the probit regression is the family ownership dummy. The magnitude drops gradually then over subsequent models, especially with the introduction of firm size (model 3), exports (model 5) and firm innovation (model 6). These results mirror those reported earlier for retained earnings, grants and subsidised bank loans, and bank credit lines.

As depicted for short-term bank credit lines previously, older firms are again more likely to use bank loans in comparison with younger SMEs and significantly so at the one per cent level. Similarly, firm age is synonymous with bank loans usage and especially so for firms over 10 years. Just as with bank credit lines, larger firms are more likely to use bank loans compared to micro firms. The effect is especially profound for medium firms who are 15.6 to 16.7 per cent more likely to use bank loans and statistically so compared to micro firms.

Table 32 - Bank Loans – Family-owned SMEs v solely owned SMEs

	Model 1	Model 2	Model 3	Model 4	Bank Loans				
					Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0534*** (13.14)	0.0506*** (12.43)	0.0307*** (7.53)	0.0288*** (7.04)	0.0274*** (6.64)	0.0186*** (3.18)	0.0186*** (3.18)	0.0181*** (3.09)	0.0182*** (3.11)
5-10 Years		0.0182** (1.98)	0.0150 (1.54)	0.0153 (1.57)	0.0163* (1.65)	0.0294** (2.22)	0.0297** (2.25)	0.0311** (2.36)	0.0323** (2.46)
>10 Years		0.0571*** (7.30)	0.0327*** (3.94)	0.0302*** (3.62)	0.0315*** (3.73)	0.0365*** (3.27)	0.0371*** (3.33)	0.0379*** (3.41)	0.0379*** (3.43)
Small			0.0782*** (16.80)	0.0759*** (16.19)	0.0742*** (15.67)	0.0740*** (11.05)	0.0732*** (10.90)	0.0756*** (11.20)	0.0769*** (11.38)
Medium				0.1668*** (27.68)	0.1601*** (25.90)	0.1561*** (24.81)	0.1609*** (18.02)	0.1593*** (17.73)	0.1639*** (18.02)
Construction					-0.0229*** (-2.89)	-0.0135 (-1.63)	-0.0018 (-0.16)	-0.0017 (-0.14)	-0.0025 (-0.22)
Trade					-0.0025 (-0.37)	0.0040 (0.59)	0.0115 (1.22)	0.0116 (1.24)	0.0123 (1.31)
Services					-0.0430*** (-7.21)	-0.0361*** (-5.87)	-0.0241*** (-2.82)	-0.0244*** (-2.85)	-0.0243*** (-2.84)
Exporters						0.0187*** (4.24)	0.0099 (1.58)	0.0092 (1.46)	0.0095 (1.51)
Innovators							0.0249*** (4.03)	0.0244*** (3.94)	0.0242*** (3.91)
Trading Distress								-0.0021 (-1.48)	-0.0043*** (-2.79)
Financial Distress									0.0068*** (3.53)
Corp Tax Rate									0.0109*** (11.93)
Inflation Rate									-0.0223*** (-3.50)
GDP Growth Rate									0.0072*** (4.04)
Observations	48482	48482	48482	48482	48002	22180	22180	22180	22180

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Innovative firms, just as for bank credit lines, are found to have a greater likelihood of using bank loans compared with non-innovative firms. The magnitude of the innovator effect ranges from 2.4 per cent to 2.6 per cent and remains at one per cent statistical significance throughout. Those firms experiencing trading distress are shown to be less likely to use bank loans in contrast to financially distressed firms who appear more likely to have used this source. Just as in earlier tables a more favourable macroeconomic climate increases the likelihood of a firm using bank loans.

In sum, bank loans are shown to be an important source of finance for family-owned SMEs and statistically so throughout in contrast to solely owned SMEs. The introduction of firm size

and innovator variables reduces the family ownership coefficient somewhat, yet the statistical significance remains constant at the one per cent level. Furthermore, older and larger SMEs are more likely to use bank loans as are exporters, innovators and financially distressed firms. These results are consistent with those for bank credit lines and especially so for the youngest and smallest firms who are less likely to use bank loans. A more favourable macroeconomic environment increases the likelihood of an SME relying on this source.

#### **4.3.5 Trade Credit**

Table 33 overleaf shows the result of family-owned SMEs likely usage of trade credit compared to solely owned SMEs. Family-owned SMEs are found more likely to use trade credit compared with solely owned firms and consistently so at the one per cent in all models. The magnitude of the likelihood ranges from 6.6 per cent (model 1) to 3.6 per cent (model 9). Just as in the previous Tables (27 – 32) the effect is largest in model 1 of the probit regression with only the family ownership dummy. This initial magnitude of 6.6 per cent gradually drops over subsequent models. Notably, firm size, and macroeconomic controls have a curtailing influence on the ownership coefficient.

Firm age is not shown to have any major impact on the likelihood of using trade credit. Conversely, firm size has a pronounced influence on the likelihood of an SME using trade credit. Small and especially medium firms are both significantly more likely to use trade credit than micro firms. This relationship is evident throughout all subsequent equations with little variation in the magnitude whilst the statistical significance is constant at the one per cent level. Service sector and construction sector firms are less likely to use trade credit than industrial firms (base). As expected, those in the trade sector are more likely to have used trade credit in the previous six months when contrasted with industrial firms.

Table 33 – Trade Credit – Family-owned SMEs v solely owned SMEs

	Trade Credit								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0659*** (18.48)	0.0645*** (18.04)	0.0547*** (15.16)	0.0508*** (14.17)	0.0489*** (13.53)	0.0465*** (9.28)	0.0464*** (9.26)	0.0460*** (9.18)	0.0355*** (7.10)
5-10 Years		0.0042 (0.50)	0.0018 (0.21)	0.0015 (0.17)	-0.0002 (-0.02)	0.0098 (0.84)	0.0107 (0.92)	0.0116 (1.00)	0.0085 (0.73)
>10 Years		0.0265*** (3.69)	0.0132* (1.75)	0.0058 (0.76)	0.0038 (0.48)	0.0165* (1.66)	0.0181* (1.82)	0.0186* (1.89)	0.0151 (1.52)
Small		0.0392*** (9.49)	0.0347*** (8.38)	0.0308*** (7.35)	0.0343*** (5.85)	0.0325*** (5.52)	0.0339*** (5.74)	0.0424*** (7.21)	
Medium		0.0838*** (15.98)	0.0729*** (13.79)	0.0637*** (11.95)	0.0564*** (7.70)	0.0529*** (7.20)	0.0557*** (7.48)	0.0674*** (8.98)	
Construction			-0.0197*** (-2.65)	0.0005 (0.06)	0.0113 (1.05)	0.0116 (1.07)	0.0110 (1.01)	0.0075 (0.70)	
Trade			0.0147** (2.32)	0.0285*** (4.52)	0.0288*** (3.33)	0.0292*** (3.37)	0.0296*** (3.42)	0.0229*** (2.68)	
Services			-0.0887*** (-16.40)	-0.0738*** (-13.58)	-0.0619*** (-8.34)	-0.0625*** (-8.42)	-0.0624*** (-8.41)	-0.0628*** (-8.51)	
Exporters				0.0389*** (10.08)	0.0294*** (5.44)	0.0279*** (5.15)	0.0282*** (5.20)	0.0317*** (5.92)	
Innovators					0.0301*** (5.69)	0.0289*** (5.45)	0.0288*** (5.45)	0.0248*** (4.76)	
Trading Distress						-0.0046*** (-3.79)	-0.0060*** (-4.56)	-0.0030** (-2.28)	
Financial Distress							0.0045*** (2.69)	0.0024 (1.46)	
Corp Tax Rate								-0.0043*** (-6.05)	
Inflation Rate								-0.0853*** (-16.25)	
GDP Growth Rate								0.0040*** (3.13)	
Observations	48311	48311	48311	48311	47839	22083	22083	22083	22083

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Both exporters and innovators are more likely to use trade credit and consistently so across models 5 to 9. The magnitude of both is similar ranging from 2.5 per cent to 3.9 per cent and the statistical significance is one per cent throughout. The introduction of the exporter dummy in model 5, just as in Table 31 earlier, sees the magnitude of the family ownership coefficient reduce. There is some evidence that those firms experiencing trading distress are less likely to use trade credit whilst, financially distressed firms appear somewhat more likely to use trade credit. More favourable macro-economic conditions in terms of higher GDP growth, lower taxes and lower inflation sees a greater likelihood of SMEs using trade credit. The introduction

of the macroeconomic variables in model 9 reduces the family ownership coefficient by over one per cent compared to model 8.

In summary, family-owned firms are more likely to use trade credit when compared with sole-owners and the significance of this likelihood remains at the one per cent level throughout. Noticeably, larger firms, those exporting and to a lesser extent more innovative SMEs are more likely to use trade credit. Controlling for firm size, exporters and macro-economic conditions does reduce in the marginal effects of the ownership coefficient.

#### 4.3.6 Other Loans

Table 34 overleaf presents the results on the use of other loans by family-owned SMEs in contrast to sole owner SMEs. The SAFE survey describes other loans as a combination of loans from family and friends or a related enterprise or shareholders. There is some evidence that family-owned SMEs are more likely to use other loans compared to sole owners although not consistently so. The magnitude of the likelihood ranges between 1.5 per cent (model 2) to 1.1 per cent (model 5) at the one per cent level in the first five models. This effect is strongest (1.5 per cent) when the only variable considered in the probit regression are family ownership and dummy for firm age. The introduction of the innovator variable in model 6 results in the ownership coefficient becoming insignificant.

Older SMEs are less likely to use other loans and significantly so in contrast to younger firms. The marginal effect ranges from 3.5 per cent to 4.3 per cent. Larger firms and especially medium firms have a greater likelihood of other loan usage in comparison with micro firms.

Table 34 - Other Loans – Family-owned SMEs v solely owned SMEs

	Model 1	Model 2	Model 3	Model 4	Other Loans Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0136*** (4.90)	0.0146*** (5.23)	0.0121*** (4.29)	0.0125*** (4.41)	0.0114*** (4.01)	0.0065 (1.64)	0.0066* (1.66)	0.0062 (1.57)	0.0061 (1.52)
5-10 Years		-0.0346*** (-4.48)	-0.0360*** (-4.57)	-0.0356*** (-4.53)	-0.0361*** (-4.52)	-0.0414*** (-3.98)	-0.0422*** (-4.02)	-0.0410*** (-3.93)	-0.0415*** (-3.97)
>10 Years		-0.0379*** (-5.55)	-0.0422*** (-6.01)	-0.0417*** (-5.96)	-0.0430*** (-6.05)	-0.0387*** (-4.14)	-0.0400*** (-4.24)	-0.0389*** (-4.15)	-0.0393*** (-4.18)
Small			0.0065** (2.04)	0.0076** (2.34)	0.0067** (2.06)	0.0053 (1.18)	0.0063 (1.39)	0.0081* (1.79)	0.0078* (1.71)
Medium			0.0232*** (5.76)	0.0254*** (6.08)	0.0213*** (5.10)	0.0296*** (4.91)	0.0315*** (5.17)	0.0351*** (5.64)	0.0345*** (5.51)
Construction				-0.0010 (-0.20)	0.0058 (1.06)	0.0127* (1.66)	0.0124 (1.61)	0.0117 (1.54)	0.0107 (1.40)
Trade				0.0129*** (2.92)	0.0168*** (3.83)	0.0205*** (3.37)	0.0201*** (3.31)	0.0208*** (3.43)	0.0195*** (3.20)
Services				0.0073* (1.83)	0.0126*** (3.14)	0.0135** (2.46)	0.0137** (2.49)	0.0138** (2.52)	0.0130** (2.34)
Exporters					0.0170*** (5.58)	0.0078* (1.84)	0.0086** (2.02)	0.0088** (2.05)	0.0086** (2.01)
Innovators						0.0237*** (5.70)	0.0244*** (5.86)	0.0243*** (5.83)	0.0240*** (5.77)
Trading Distress							0.0026*** (2.77)	0.0008 (0.74)	0.0013 (1.24)
Financial Distress								0.0055*** (4.23)	0.0057*** (4.38)
Corp Tax Rate									-0.0016*** (-2.82)
Inflation Rate									0.0011 (0.26)
GDP Growth Rate									0.0016 (1.52)
Observations	48212	48212	48212	48212	47735	22096	22096	22096	22096

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

This magnitude increases with the addition of more variables, except when controlling for exporters. Industrial firms (base level) are found to be less likely to use other loans compared to firms in other sectors, especially those in trade and services.

Export-oriented firms although shown to have a greater likelihood of using other loans and significant at the one per cent level in model 5 only. Firms classed as innovators are shown to be more likely to rely on other loan usage compared with non-innovative firms. The magnitude of this likelihood is consistent at 2.4 per cent across models 6 – 9 and is statistically significant at the one per cent level. Just as in previous tables the introduction of the innovator variable reduces the significance of the ownership coefficient. Financially distressed firms are more

likely to have used other loans in the previous 6 months and the effect is significant at the one per cent level albeit the marginal effect is very small.

In summary, whilst there is some evidence to suggest that family-owned SMEs are more likely to use other loans when compared with sole-owner SMEs the evidence overall is not compelling, suggesting family-owned SMEs are not necessarily more likely to use other loans. Other firm characteristics seem to matter more as younger, larger; innovators and financially distressed firms are found more likely to use other loans.

#### **4.3.7     Debt Securities**

Table 35 overleaf shows some evidence that family-owned SMEs are more likely to use debt securities compared to sole owners. However, the marginal effects are very small throughout and only significant at the one per cent level having controlled for firm size, sector and exports. The significance drops to five per cent in all other models and becomes insignificant in model 9 with the introduction of the macroeconomic controls.

Firm age is not shown to influence the likelihood of using debt securities. Yet, there is some evidence to suggest that micro firms are more likely to rely on this source in contrast to their larger counterparts. Firm sector does not seem to matter nor does exporting.

Noticeably, innovators are found to have a greater likelihood of using debt securities compared with non-innovative firms at the one per cent level and remains consistent in models 6-9 inclusive albeit the marginal effects are small. Trading distress appears to matter in model 7 as do financially distressed firms (model 8) who are more likely to have used debt securities in the previous 6 months. However, the magnitude for both distressed firms is very small, albeit significant at the one per cent level. Finally, mixed evidence is found for the impact of macroeconomic variables on the likelihood of a firm using debt securities.

Table 35 – Debt Securities – Family-owned SMEs v solely owned SMEs

	Debt Securities								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0026** (2.52)	0.0025** (2.49)	0.0029*** (2.85)	0.0027*** (2.64)	0.0027*** (2.58)	0.0032** (2.32)	0.0032** (2.32)	0.0032** (2.29)	0.0014 (1.01)
5-10 Years	-0.0015 (-0.58)	-0.0013 (-0.53)	-0.0013 (-0.53)	-0.0019 (-0.76)	0.0034 (1.21)	0.0033 (1.12)	0.0036 (1.26)	0.0036 (1.32)	0.0039
>10 Years	-0.0003 (-0.13)	0.0003 (0.15)	-0.0001 (-0.05)	-0.0004 (-0.17)	0.0037 (1.63)	0.0033 (1.42)	0.0034 (1.50)	0.0034 (1.41)	0.0032
Small		-0.0031*** (-2.65)	-0.0032*** (-2.69)	-0.0036*** (-2.98)	-0.0015 (-0.93)	-0.0010 (-0.59)	-0.0002 (-0.12)	0.0017 (1.02)	
Medium			-0.0031** (-2.35)	-0.0033** (-2.43)	-0.0037*** (-2.69)	-0.0014 (-0.71)	-0.0003 (-0.16)	0.0010 (0.47)	0.0039* (1.67)
Construction				0.0005 (0.24)	0.0012 (0.54)	0.0034 (1.13)	0.0032 (1.08)	0.0029 (0.99)	0.0026 (0.89)
Trade					0.0019 (1.03)	0.0023 (1.27)	0.0039* (1.69)	0.0037 (1.59)	0.0030 (1.61)
Services					-0.0043*** (-2.74)	-0.0038** (-2.43)	-0.0017 (-0.89)	-0.0016 (-0.84)	-0.0017 (-0.87)
Exporters						0.0016 (1.44)	0.0005 (0.35)	0.0009 (0.59)	0.0011 (0.70)
Innovators							0.0042*** (2.87)	0.0045*** (3.03)	0.0043*** (2.90)
Trading Distress								0.0012*** (3.41)	0.0003 (0.83)
Financial Distress									0.0025*** (4.99)
Corp Tax Rate									0.0014*** (4.83)
Inflation Rate									-0.0146*** (-8.30)
Observations	47699	47699	47699	47699	47246	21893	21893	21893	21893

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In sum, whilst there is some evidence to suggest that family-owned firms are more likely to use debt securities in contrast to solely owned SMEs the magnitude is very small and significant mostly at the five per cent level. Firms classed as innovators and those experiencing financial distress appear more likely to use debt securities compared with non-innovators and non-financially distressed firms respectively, although the marginal effects are very small. In general, the likelihood of the usage of debt securities is insignificant across most of the models.

#### **4.3.8      Equity Capital**

Table 36 overleaf illustrates part evidence to suggest that family-owned SMEs are somewhat more likely to use equity capital usage in contrast to sole owners, but the magnitude of the likelihood is very small, and the statistical significance is present in models 1 and 2 only.

Some of the control variables seem to matter more than firm ownership. These include firm age, firm size, and exports and innovation to some extent. Older firms appear less likely to use equity capital especially those over 10 years. Small and medium sized firms on the other hand, are more likely to use equity capital compared to micro firms and significantly so at the one per cent level. The marginal effects are greater for medium sized firms. Firms classed as exporters and innovators are more likely to use equity capital albeit the magnitude is small, and the statistical significance is only at the five per cent level, except in model 5 when the statistical significance is one per cent.

Table 36 – Equity Capital – Family-owned SMEs v solely owned SMEs

	Model 1	Model 2	Model 3	Model 4	Equity Capital Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0025** (2.02)	0.0032** (2.54)	0.0013 (1.06)	0.0015 (1.19)	0.0012 (0.96)	0.0018 (0.94)	0.0019 (0.95)	0.0019 (0.98)	0.0025 (1.24)
5-10 Years		-0.0080** (-2.00)	-0.0096** (-2.17)	-0.0094** (-2.16)	-0.0089** (-2.04)	-0.0130** (-2.08)	-0.0132** (-2.09)	-0.0135** (-2.13)	-0.0133** (-2.10)
>10 Years		-0.0149*** (-4.23)	-0.0191*** (-4.88)	-0.0185*** (-4.79)	-0.0181*** (-4.65)	-0.0204*** (-3.61)	-0.0207*** (-3.64)	-0.0210*** (-3.66)	-0.0206*** (-3.63)
Small			0.0074*** (5.13)	0.0076*** (5.26)	0.0072*** (4.97)	0.0084*** (3.71)	0.0086*** (3.78)	0.0083*** (3.62)	0.0077*** (3.34)
Medium			0.0145*** (7.15)	0.0151*** (7.15)	0.0138*** (6.62)	0.0135*** (4.39)	0.0140*** (4.45)	0.0134*** (4.27)	0.0124*** (4.00)
Construction				-0.0007 (-0.33)	0.0014 (0.59)	0.0016 (0.42)	0.0016 (0.41)	0.0017 (0.45)	0.0014 (0.37)
Trade				0.0012 (0.63)	0.0023 (1.26)	-0.0005 (-0.16)	-0.0005 (-0.17)	-0.0005 (-0.18)	-0.0008 (-0.29)
Services				0.0036** (2.13)	0.0052*** (3.06)	0.0024 (0.87)	0.0024 (0.88)	0.0024 (0.88)	0.0019 (0.70)
Exporters					0.0050*** (3.69)	0.0048** (2.29)	0.0049** (2.35)	0.0049** (2.34)	0.0046** (2.18)
Innovators						0.0045** (2.23)	0.0047** (2.30)	0.0047** (2.30)	0.0047** (2.33)
Trading Distress							0.0005 (1.09)	0.0008 (1.58)	0.0008 (1.61)
Financial Distress								-0.0009 (-1.44)	-0.0007 (-1.07)
Corp Tax Rate									-0.0005* (-1.75)
Inflation Rate									0.0055*** (2.62)
GDP Growth Rate									0.0003 (0.67)
Observations	47651	47651	47651	47651	47204	21865	21865	21865	21865

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In summary, little variation is found between family-owned SMEs and sole-owner SMEs in the likely usage of equity capital. Of the control variables, firm age and firm size are found to influence the likelihood of an SME using equity finance. Older firms are depicted as being less likely to use this financing source whilst larger firms and to a lesser extent those exporting and classed as innovative appear more likely to use equity capital.

#### **4.3.9 Leasing and Hire-purchase**

The results from Table 37 overleaf indicate that family-owned SMEs are less likely to use leasing and hire-purchase compared with solely owned firms. In models 1 and 2 when only family ownership and the firm age control variables are included, family-owned firms are found more likely to use leasing and hire purchase and the magnitude of the greater likelihood in contrast to sole owner firms ranges from 2.2 per cent to 2.0 per cent and statistically so at the one per cent level. However, in all subsequent models' family firm ownership is negatively linked with the likelihood of using leasing and hire purchase at the one per cent confidence level. The marginal effects are, however, very small.

Firm age does not appear to matter although a positive coefficient suggests older firms are likely to use leasing and hire purchase. Noticeably, firm size matters as medium sized firms are 29 per cent and small firms are 17 per cent respectively more likely to use leasing and hire purchase in contrast to micro firms. This likelihood persists in all subsequent models at the one per cent confidence level. As expected, firms operating in the construction sector are shown to have the highest likelihood of using leasing and hire purchase.

Exporting firms are found to be more likely to use leasing and hire purchase and consistently so. The magnitude of the exporter effect ranges from 3.5 per cent to 2.9 per cent at the one per cent level. Firms experiencing either trading or financial distress are less likely to use leasing and hire purchase and significantly so. Finally, a more favourable macroeconomic environment is found to increase the likelihood of SMEs using leasing and hire purchase.

Table 37 – Leasing and Hire-Purchase – Family-owned SMEs v solely owned SMEs

	Leasing and Hire-Purchase								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0220*** (5.27)	0.0203*** (4.84)	-0.0166*** (-4.07)	-0.0159*** (-3.88)	-0.0175*** (-4.23)	-0.0271*** (-4.50)	-0.0273*** (-4.53)	-0.0264*** (-4.39)	-0.0144** (-2.41)
5-10 Years		0.0250** (2.57)	0.0206** (1.99)	0.0200* (1.94)	0.0172* (1.65)	0.0093 (0.64)	0.0106 (0.73)	0.0085 (0.58)	0.0134 (0.93)
>10 Years		0.0448*** (5.44)	-0.0014 (-0.16)	-0.0007 (-0.08)	-0.0041 (-0.46)	-0.0181 (-1.45)	-0.0158 (-1.27)	-0.0173 (-1.39)	-0.0127 (-1.04)
Small			0.1690*** (35.62)	0.1687*** (35.44)	0.1655*** (34.45)	0.1716*** (24.47)	0.1695*** (24.14)	0.1661*** (23.54)	0.1544*** (22.03)
Medium			0.2943*** (47.37)	0.2958*** (46.28)	0.2876*** (44.21)	0.2960*** (31.64)	0.2912*** (30.97)	0.2847*** (30.02)	0.2661*** (28.26)
Construction				0.0299*** (3.81)	0.0464*** (5.70)	0.0412*** (3.49)	0.0417*** (3.53)	0.0432*** (3.65)	0.0446*** (3.78)
Trade				-0.0146** (-2.38)	-0.0051 (-0.83)	-0.0021 (-0.24)	-0.0018 (-0.19)	-0.0027 (-0.30)	-0.0024 (-0.27)
Services				0.0157*** (2.75)	0.0270*** (4.64)	0.0270*** (3.19)	0.0262*** (3.10)	0.0260*** (3.08)	0.0223*** (2.65)
Exporters					0.0320*** (7.28)	0.0352*** (5.48)	0.0330*** (5.14)	0.0326*** (5.08)	0.0290*** (4.54)
Innovators						-0.0013 (-0.20)	-0.0030 (-0.47)	-0.0027 (-0.43)	0.0021 (0.32)
Trading Distress							-0.0065*** (-4.49)	-0.0034** (-2.14)	-0.0053*** (-3.37)
Financial Distress								-0.0097*** (-4.88)	-0.0062*** (-3.10)
Corp Tax Rate									0.0020** (2.24)
Inflation Rate									0.1099*** (17.03)
GDP Growth Rate									0.0071*** (4.17)
Observations	48556	48556	48556	48556	48072	22243	22243	22243	22243

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In sum, family-owned SMEs appear somewhat less likely to have used leasing and hire purchase in contrast to solely owned SMEs. A number of the control variables appear to matter more, notably, larger firms, those in the construction sector and exporters appear more likely to use leasing and hire purchase.

#### **4.3.10 Factoring**

Table 38 overleaf shows that family owners are more likely to use factoring in contrast to sole owner SMEs and the magnitude of the likelihood ranges from 2.1 per cent to 0.7 per cent. The statistical significance is at the one per cent level for firm ownership, firm age, firm size and sector (models 1 to 4), dropping to five per cent in models 5- 8 and to ten per cent in the last model.

As firms grow the likelihood of using factoring increases. Notably, medium firms are 8.8 per cent more likely to use factoring compared to micro firms (model 2). Firms operating in the industrial sector are shown to have the highest likelihood of using factoring compared with firms in other sectors and consistently so.

Similarly, both exporters and innovators display a greater likelihood of using factoring compared with non-export and non-innovative firms at the one per cent level. The effect is more pronounced for exporters who are circa 2.0 per cent more likely to use factoring as illustrated in models 5 – 9. Trading distress see firms less likely to use factoring in contrast to financially distressed firms who are more likely to use it. More favourable macroeconomic conditions in terms of higher taxes and lower inflation levels are found to increase the likelihood of a firm using factoring.

Table 38 – Factoring – Family-owned SMEs v solely owned SMEs

	Model 1	Model 2	Model 3	Model 4	Factoring Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0205*** (8.84)	0.0199*** (8.55)	0.0094*** (4.02)	0.0068*** (2.91)	0.0058** (2.45)	0.0080** (2.33)	0.0080** (2.33)	0.0074** (2.16)	0.0064* (1.85)
5-10 Years		-0.0042 (-0.78)	-0.0076 (-1.19)	-0.0074 (-1.14)	-0.0091 (-1.38)	-0.0072 (-0.80)	-0.0070 (-0.78)	-0.0054 (-0.61)	-0.0058 (-0.65)
>10 Years		0.0070 (1.48)	-0.0085 (-1.52)	-0.0101* (-1.79)	-0.0119** (-2.05)	-0.0087 (-1.13)	-0.0084 (-1.09)	-0.0073 (-0.95)	-0.0080 (-1.04)
Small		0.0445*** (16.91)	0.0413*** (15.66)	0.0398*** (14.93)	0.0400*** (10.39)	0.0398*** (10.32)	0.0415*** (10.70)	0.0427*** (10.94)	
Medium		0.0882*** (22.56)	0.0762*** (19.92)	0.0701*** (18.46)	0.0727*** (13.25)	0.0721*** (13.10)	0.0763*** (13.48)	0.0788*** (13.66)	
Construction			-0.0312*** (-6.41)	-0.0189*** (-3.70)	-0.0196*** (-2.65)	-0.0195*** (-2.64)	-0.0203*** (-2.78)	-0.0194*** (-2.65)	
Trade			-0.0335*** (-8.19)	-0.0261*** (-6.52)	-0.0259*** (-4.51)	-0.0259*** (-4.51)	-0.0253*** (-4.40)	-0.0241*** (-4.22)	
Services			-0.0453*** (-12.20)	-0.0363*** (-9.80)	-0.0361*** (-6.82)	-0.0361*** (-6.83)	-0.0358*** (-6.78)	-0.0347*** (-6.61)	
Exporters				0.0202*** (7.93)	0.0188*** (5.10)	0.0186*** (5.03)	0.0192*** (5.18)	0.0201*** (5.43)	
Innovators					0.0162*** (4.62)	0.0161*** (4.57)	0.0159*** (4.53)	0.0160*** (4.55)	
Trading Distress						-0.0007 (-0.80)	-0.0027*** (-0.80)	-0.0026*** (-2.98)	
Financial Distress							0.0062*** (5.53)	0.0057*** (5.10)	
Corp Tax Rate								0.0015*** (2.93)	
Inflation Rate									-0.0139*** (-3.77)
GDP Growth Rate									0.0007 (0.67)
Observations	47806	47806	47806	47806	47358	21956	21956	21956	21956

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In summary, family-owned SMEs appear somewhat more likely to use factoring in contrast to solely owned SMEs, statistically significant initially at the one per cent level but falling to ten per cent in the last model having controlled for macroeconomic conditions. Medium sized firms appear more likely to use factoring as are those firms in the industrial sector, those classed as exporters, as innovators or as financially distressed.

#### **4.3.11 Other Sources**

Table 39 overleaf displays the results for other sources. The evidence suggests that firm ownership does not appear to influence the likelihood of an SME using other sources of finance, which include subordinated debt instruments, participating loans, peer-to-peer lending, and crowdfunding.

Notably, older firms are 1.4 per cent less likely to use other sources compared with the youngest cohort (model 2). The magnitude of this likelihood ranges from 1.6 per cent to 1.9 per cent in all other models. The evidence shows how SME firms are more likely to rely on other sources as they grow from micro firms to small and medium firms albeit the magnitude is small. Service sector firms are more likely to use other sources in contrast to those in the industrial sector.

Exporters are more likely to use other sources as are innovative firms who are shown to have a 1.0 per cent greater likelihood. Firms who display signs of financial distress are more likely to have used other sources.

Table 39 – Other Sources – Family-owned SMEs v solely owned SMEs

	Model 1	Model 2	Model 3	Model 4	Other Sources Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0008 (0.64)	0.0013 (1.05)	0.0003 (0.21)	0.0005 (0.40)	-0.0000 (-0.02)	-0.0009 (-0.42)	-0.0009 (-0.43)	-0.0011 (-0.50)	-0.0000 (-0.01)
5-10 Years		-0.0095** (-2.42)	-0.0105** (-2.50)	-0.0104** (-2.51)	-0.0094** (-2.25)	-0.0165*** (-2.68)	-0.0164*** (-2.67)	-0.0159*** (-2.60)	-0.0148** (-2.46)
>10 Years		-0.0144*** (-4.12)	-0.0170*** (-4.52)	-0.0166*** (-4.45)	-0.0160*** (-4.29)	-0.0191*** (-3.39)	-0.0190*** (-3.38)	-0.0186*** (-3.34)	-0.0172*** (-3.16)
Small			0.0072*** (4.80)	0.0074*** (4.93)	0.0076*** (5.03)	0.0118*** (4.70)	0.0117*** (4.67)	0.0124*** (4.88)	0.0110*** (4.38)
Medium			0.0085*** (4.52)	0.0093*** (4.74)	0.0084*** (4.33)	0.0108*** (3.51)	0.0108*** (3.46)	0.0118*** (3.70)	0.0101*** (3.24)
Construction				0.0036 (1.53)	0.0052** (2.12)	0.0102** (2.45)	0.0102** (2.45)	0.0099** (2.40)	0.0099** (2.37)
Trade				0.0011 (0.60)	0.0021 (1.20)	0.0032 (1.15)	0.0032 (1.15)	0.0033 (1.18)	0.0031 (1.10)
Services				0.0053*** (3.08)	0.0061*** (3.60)	0.0092*** (3.45)	0.0092*** (3.45)	0.0092*** (3.43)	0.0086*** (3.22)
Exporters					0.0043*** (3.17)	0.0048** (2.19)	0.0048** (2.17)	0.0049** (2.21)	0.0043** (1.96)
Innovators						0.0100*** (4.66)	0.0100*** (4.64)	0.0100*** (4.62)	0.0100*** (4.65)
Trading Distress							-0.0001 (-0.24)	-0.0007 (-1.29)	-0.0008 (-1.49)
Financial Distress								0.0017** (2.51)	0.0021*** (3.03)
Corp Tax Rate									-0.0004 (-1.27)
Inflation Rate									0.0105*** (4.70)
GDP Growth Rate									0.0002 (0.42)
Observations	47313	47313	47313	47313	46862	21630	21630	21630	21630

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In sum, when comparing family-owned SMEs and solely owned SMEs, the ownership of a firm has no observed impact on the likely usage of other sources. Most firm level control variables matter, just as in Tables 36 and 37, albeit the marginal effects are small.

The next section provides the findings of the comparison between family-owned SMEs and professionally owned SMEs.

## **4.4 Sources of Finance used: Family-owned SMEs V Professionally owned SMEs**

### **4.4.1 Retained Earnings**

Table 40 overleaf shows the likelihood of family-owned SMEs using retained earnings versus professionally owned SMEs having controlled for a range of firm level and macroeconomic variables. By and large family firms appear more likely to use retained earnings in contrast to their professionally owned counterparts. Firm ownership and firm age show a negative and insignificant likelihood (models 1 and 2). Noticeably, the introduction of firm size control (model 3) sees the effect on firm ownership become both statistically and economically significant. Results from model 3 to 9 show how family-owned firms are more likely to have used retained earnings compared with professionally owned SMEs. The magnitude of the likelihood is 2.5 per cent in model 3 and with the addition of more variables sees this magnitude lessen somewhat. The statistical significance of the ownership dummy is constant at the one per cent level in models 3 to 9.

The assertion is that older SMEs (i.e., those aged over 10 years) are more likely to use retained earnings compared to the youngest cohort. Equally, medium firms are far more likely to use retained earnings compared to micro firms at the one per cent level. In a similar vein, small firms are also more likely to use retained earnings than micro firms at the one per cent level. This firm size effect is constant throughout. Exporters appear to have a greater likelihood of using retained earnings in contrast to non-exporters (Model 5) but the marginal effect and significance reduce somewhat when more control variables are added (models 6 to 9). Innovators are also more likely to use retained earnings than those deemed non-innovative, and the marginal effects are stronger and more consistent than those reported for exporters. The introduction of the innovator variable in model 6, just as in Table 29 earlier, sees a drop in the family ownership coefficient and the sample size reduced to 16,692 versus 35,683 in model 5.

Table 40 – Retained Earnings – Family-owned SMEs v professionally managed SMEs

	Retained Earnings								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	-0.0055 (-1.02)	-0.0064 (-1.19)	0.0247*** (4.80)	0.0228*** (4.42)	0.0226*** (4.33)	0.0194*** (2.64)	0.0198*** (2.70)	0.0167** (2.28)	0.0192*** (2.64)
5-10 Years		0.0401 *** (3.70)	0.0388 *** (3.27)	0.0392 *** (3.30)	0.0345 *** (2.85)	0.0367 ** (2.32)	0.0371 ** (2.35)	0.0299 * (1.88)	0.0310 * (1.95)
>10 Years		0.0697*** (7.70)	0.0431*** (4.31)	0.0424*** (4.22)	0.0384*** (3.74)	0.0452*** (3.37)	0.0461*** (3.45)	0.0409*** (3.01)	0.0413*** (3.05)
Small			0.0726*** (13.77)	0.0701*** (13.17)	0.0685*** (12.66)	0.0699*** (9.28)	0.0689*** (9.12)	0.0612*** (8.04)	0.0591*** (7.71)
Medium				0.1466*** (24.52)	0.1395*** (22.50)	0.1340*** (21.16)	0.1325*** (14.94)	0.1303*** (14.59)	0.1134*** (12.71)
Construction					-0.0192** (-2.11)	-0.0055 (-0.58)	-0.0019 (-0.14)	-0.0016 (-0.12)	0.0032 (0.24)
Trade						-0.0158** (-2.20)	-0.0080 (-1.10)	-0.0042 (-0.42)	-0.0043 (-0.42)
Services							-0.0202*** (-4.79)	-0.0202** (-3.06)	-0.0207** (-2.21)
Exporters							0.0270*** (5.33)	0.0189*** (2.65)	0.0181** (2.53)
Innovators								0.0211*** (3.04)	0.0203*** (2.92)
Trading Distress									-0.0032** (-1.98)
Financial Distress									0.0054*** (3.14)
Corp Tax Rate									0.0047*** (2.68)
Inflation Rate									-0.0284*** (-13.05)
GDP Growth Rate									0.0091*** (5.06)
Observations	36014	36014	36014	36014	35683	16692	16692	16692	16692

t statistics in parentheses  
\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Unsurprisingly, financially distressed firms are less likely to use retained earnings in contrast to those experiencing trading distress. More favourable macroeconomic conditions in terms of corporate tax rates and GDP growth are associated with greater use of retained earnings.

In summary, there is some evidence to suggest that family-owned SMEs are more likely to use retained earnings when compared with professionally owned SMEs. Notably, the ownership coefficients are significant in models 3 to 9 at the one per cent level. Whilst some of the control variables matter more it is noticeable that firm size is found to have the strongest impact on the likelihood of an SME using retained earnings.

In addition, retained earnings appears to be more prevalent amongst older, those who innovate, trading distressed firms and to a lesser extent amongst exporters.

#### **4.4.2 Grants and Subsidised Bank Loans**

Table 41 overleaf presents the results for likely usage of grants and subsidised bank loans by family-owned SMEs in contrast to professionally managed SMEs. The evidence shows how family-owned SMEs are more likely to use grants and subsidised bank loans compared to professionally owned firms. The magnitude of the likelihood ranges between 1.8 per cent (model 2) and 3.3 per cent (model 3) and the statistical significance remains at the one per cent level throughout. This coefficient for the family firm dummy is strongest with the addition of the firm size control in model 3. The magnitude drops in the subsequent 4 models having controlled for firm sector, exports, innovation, and trading distress respectively. The inclusion of financial distress and macroeconomic controls in model 8 and 9 heightens the observed family effect.

Firm age is not found to have a strong impact on the likelihood of an SME using grants and subsidised bank loans unlike firm size. Small and medium firms are more likely to use grants and subsidised bank loans in contrast to micro firms. Firms in the industrial sector are more likely to use grants and subsidised bank loans compared with firms in other sectors.

Exporters and especially innovators are more likely to use grants and subsidised bank loans compared with non-exporters and non-innovators, reported at the one per cent level and consistently so in all models. Just as in Table 30 earlier, the introduction of the innovation dummy reduces the ownership coefficient to 2.3 per cent and the sample size to 16,774 versus 35,838 in model 5. Financially distressed firms are more likely to have used grants and subsidised bank loans, but the marginal effects are small.

Table 41 – Grants and Subsidised Loans – Family-owned SMEs v professionally managed SMEs

	Model 1	Model 2	Model 3	Grants and Subsidised Bank Loans				
	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9		
Family Firms	0.0186*** (4.56)	0.0181*** (4.44)	0.0325*** (8.19)	0.0303*** (7.56)	0.0296*** (7.33)	0.0230*** (4.01)	0.0229*** (4.00)	0.0239*** (4.20)
5-10 Years		0.0027 (0.30)	-0.0002 (-0.02)	0.0002 (0.02)	0.0015 (0.15)	0.0220* (1.75)	0.0220* (1.74)	0.0238* (1.90)
>10 Years		0.0235*** (3.01)	0.0081 (0.94)	0.0075 (0.87)	0.0090 (1.03)	0.0263** (2.48)	0.0262** (2.46)	0.0275*** (2.62)
Small			0.0487*** (11.34)	0.0434*** (9.88)	0.0405*** (9.05)	0.0362*** (5.81)	0.0364*** (5.82)	0.0386*** (6.21)
Medium			0.0719*** (15.08)	0.0569*** (11.66)	0.0497*** (10.01)	0.0489*** (7.03)	0.0492*** (7.02)	0.0549*** (7.72)
Construction				-0.0528*** (-7.17)	-0.0397*** (-5.14)	-0.0428*** (-4.04)	-0.0428*** (-4.05)	-0.0442*** (-4.21)
Trade				-0.0496*** (-8.18)	-0.0404*** (-6.68)	-0.0364*** (-4.35)	-0.0364*** (-4.35)	-0.0360*** (-4.31)
Services				-0.0548*** (-10.01)	-0.0436*** (-7.81)	-0.0375*** (-4.82)	-0.0374*** (-4.81)	-0.0374*** (-4.83)
Exporters					0.0280*** (6.88)	0.0262*** (4.57)	0.0264*** (4.58)	0.0271*** (4.72)
Innovators					0.0332*** (6.10)	0.0333*** (6.11)	0.0327*** (5.99)	0.0338*** (6.21)
Trading Distress						0.0005 (0.37)	-0.0026* (-1.87)	-0.0034** (-2.44)
Financial Distress							0.0099*** (5.68)	0.0091*** (5.24)
Corp Tax Rate								0.0053*** (6.20)
Inflation Rate								-0.0151*** (-2.66)
GDP Growth Rate								-0.0003 (-0.16)
Observations	36187	36187	36187	36187	35838	16774	16774	16774

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

More favourable macroeconomic conditions, in terms of higher taxes and lower inflation, increase the likelihood of an SME using grants and subsidised bank loans. Notably, the introduction of the macroeconomic variables increases the family ownership coefficient.

In sum, family-owned firms are shown to be more likely to use grants and subsidised bank loans in contrast to professionally owned SMEs. Notably, firm size positively impacts the family firm coefficient whilst firms classed as innovative reduces the ownership coefficient. Most firm level variables and macroeconomic controls appear to matter as older, larger; exporters, innovators and financially distressed firms are deemed more like to have used grants and subsidised loans in the last six months.

#### **4.4.3 Bank Credit Lines**

The importance of bank credit lines is presented in Table 42 overleaf. The results show how family-owned SMEs are more likely and consistently so to use bank credit lines compared to professionally owned firms. The statistical significance remains at one per cent in all models. The likelihood ranges from 8.3 per cent (model 2) to 10.6 per cent (model 3). In general, the family ownership coefficient increases as additional control variables are introduced.

Noticeably, older firms have a greater likelihood of using bank credit lines in contrast with younger firms. The magnitude varies from 7.4 per cent (model 2) to 4.2 per cent (model 5). Firm size also matters as medium sized firms appear more likely to rely on bank credit lines compared with smaller firms at the one per cent level and consistently so. Services sector firms are less likely to use bank credit lines compared with industrial firms (base).

Exporting SMEs are more likely to use bank credit lines compared with non-export-oriented firms at the one per cent level. Similarly, innovators also have a greater likelihood of using bank credit lines in contrast to non-innovative firms (model 6), yet the statistical significance and marginal effects are stronger for exporters. Financial distress sees firms more likely to use bank credit lines at the one per cent level models 8 and 9. The macro-economic variables offer little explanatory power in terms of a firm's likelihood of using short-term bank credit lines.

Table 42 – Bank Credit Lines – Family-owned SMEs v Professionally managed SMEs

	Bank Credit Lines								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0838*** (12.90)	0.0829*** (12.77)	0.1060*** (16.17)	0.0992*** (15.02)	0.0990*** (14.90)	0.0993*** (10.44)	0.0989*** (10.38)	0.1011*** (10.65)	0.1007*** (10.61)
5-10 Years		0.0414*** (2.76)	0.0383** (2.51)	0.0392** (2.56)	0.0354** (2.29)	0.0502** (2.41)	0.0495** (2.37)	0.0552*** (2.66)	0.0575*** (2.78)
>10 Years		0.0740*** (5.78)	0.0515*** (3.93)	0.0468*** (3.56)	0.0416*** (3.13)	0.0556*** (3.11)	0.0542*** (3.03)	0.0583*** (3.27)	0.0623*** (3.51)
Small			0.0748*** (10.66)	0.0697*** (9.87)	0.0627*** (8.75)	0.0538*** (5.29)	0.0553*** (5.43)	0.0615*** (6.04)	0.0543*** (5.30)
Medium			0.1083*** (14.71)	0.0999*** (13.07)	0.0867*** (11.07)	0.0799*** (7.16)	0.0826*** (7.34)	0.0944*** (8.35)	0.0840*** (7.34)
Construction				0.0035 (0.31)	0.0298** (2.50)	0.0468*** (2.76)	0.0466*** (2.75)	0.0434** (2.56)	0.0419** (2.47)
Trade				0.0148 (1.63)	0.0301*** (3.28)	0.0263** (2.02)	0.0263** (2.02)	0.0279** (2.14)	0.0260** (2.00)
Services				-0.0592*** (-7.40)	-0.0390*** (-4.71)	-0.0322*** (-2.73)	-0.0315*** (-2.67)	-0.0314*** (-2.67)	-0.0349*** (-2.95)
Exporters					0.0567*** (8.96)	0.0439*** (4.83)	0.0450*** (4.95)	0.0460*** (5.07)	0.0437*** (4.81)
Innovators						0.0233*** (2.60)	0.0243*** (2.71)	0.0241*** (2.68)	0.0249*** (2.77)
Trading Distress							0.0039* (1.93)	-0.0027 (-1.22)	-0.0031 (-1.37)
Financial Distress								0.0211*** (7.50)	0.0231*** (8.17)
Corp Tax Rate									-0.0020 (-1.64)
Inflation Rate									0.0547*** (6.13)
GDP Growth Rate									0.0036 (1.43)
Observations	36683	36683	36683	36683	36322	16978	16978	16978	16978

t statistics in parentheses  
\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In sum, just as in Table 31 earlier (family firms compared to solely owned SMEs) family-owned SMEs are shown to have a greater likelihood of using bank credit lines when compared with professionally owned firms and consistently so. The likelihood is notably stronger here as older and larger SMEs are found more likely to use bank credit lines as are exporters, innovators and financially distressed firms. The introduction of firm size and financial distress controls have a positive effect on the family ownership coefficient.

#### **4.4.4 Bank Loans**

Table 43 overleaf reports the results for bank loans. Family-owned SMEs are more likely to have used longer-term bank loans in the previous 6 months in contrast to professionally owned SMEs. The magnitude of the likelihood ranges from 3.9 per cent (model 1) to 6.4 per cent (model 9) and remains statistically significant at the one per cent level throughout. The introduction of the firm size variable in model 3 sees the magnitude increase significantly to 7 per cent.

Older firms are synonymous with the greater likelihood of using bank loans in comparison with younger SMEs and the significance is constant at one per cent in all models. Notably, firm size matters as small and especially medium sized firms are 8.93 per cent and 16.0 per cent respectively more likely to use bank loans compared to micro firms (base) at the one per cent level. The magnitude has little variation in all models. Firms in the services sector appear the least likely to use bank loans in contrast to firms in other sectors and consistently so.

The likelihood of bank loan usage by exporters is only significant in model 5 and disappears following the introduction of the innovator control. Noticeably, innovative firms are found to have a greater likelihood of using bank loans (model 6) and the magnitude of this effect ranges from 2.8 per cent to 2.5 per cent and the statistical significance remains at one per cent in all models. Just as in Table 32 earlier when comparing family-owned SMEs with sole owners, the introduction of the innovator dummy reduces the ownership coefficient and the sample size in contrast to previous models. Financially distressed firms are more likely to use bank loans in contrast to those suffering trading distress. Predictably, more favourable growth rates and stronger tax shelters in countries sees SMEs having a greater likelihood of using bank loans.

Table 43 – Bank Loans – Family-owned SMEs v professionally managed SMEs

	Model 1	Model 2	Model 3	Model 4	Bank Loans				
					Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0389*** (7.14)	0.0378*** (6.93)	0.0699*** (13.28)	0.0659*** (12.40)	0.0660*** (12.36)	0.0585*** (7.75)	0.0589*** (7.81)	0.0600*** (7.97)	0.0641*** (8.60)
5-10 Years		0.0272** (2.33)	0.0246* (1.95)	0.0255** (2.01)	0.0285** (2.24)	0.0300* (1.76)	0.0305* (1.79)	0.0323* (1.90)	0.0327* (1.93)
>10 Years		0.0764*** (7.70)	0.0468*** (4.35)	0.0444*** (4.10)	0.0477*** (4.38)	0.0427*** (2.93)	0.0436*** (3.01)	0.0448*** (3.10)	0.0434*** (3.01)
Small			0.0893*** (15.77)	0.0855*** (14.95)	0.0837*** (14.47)	0.0801*** (9.92)	0.0791*** (9.76)	0.0811*** (10.02)	0.0826*** (10.21)
Medium				0.1597*** (25.41)	0.1507*** (23.15)	0.1474*** (22.12)	0.1432*** (15.33)	0.1411*** (15.00)	0.1460*** (15.37)
Construction					-0.0286*** (-2.99)	-0.0211** (-2.10)	-0.0276** (-1.99)	-0.0274** (-1.98)	-0.0287** (-2.07)
Trade					-0.0001 (-0.01)	0.0052 (0.66)	0.0115 (1.05)	0.0114 (1.03)	0.0119 (1.08)
Services					-0.0492*** (-7.34)	-0.0425*** (-6.10)	-0.0405*** (-4.14)	-0.0410*** (-4.20)	-0.0411*** (-4.20)
Exporters						0.0172*** (3.21)	0.0080 (1.06)	0.0071 (0.94)	0.0076 (1.00)
Innovators							0.0260*** (3.53)	0.0252*** (3.41)	0.0249*** (3.37)
Trading Distress								-0.0032* (-1.90)	-0.0059*** (-3.18)
Financial Distress									0.0086*** (3.71)
Corp Tax Rate									0.0108*** (9.99)
Inflation Rate									-0.0193** (-2.57)
GDP Growth Rate									0.0070*** (3.32)
Observations	36497	36497	36497	36497	36143	16903	16903	16903	16903

t statistics in parentheses  
\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In summary, family-owned SMEs are more likely to use bank loans and consistently so in comparison with professionally owned firms. This result mirrors those presented earlier in Table 32, albeit the likelihood is greater here. The likelihood of a family firm using bank loans is strongest in model 3 when firm size is introduced. It is noticeable that all firm level controls together with the macroeconomic variables impact the likelihood of an SME using bank loans. The assertion is that older, medium sized, innovators and financially distressed (somewhat) SMEs are more likely to have used bank loans over the past six months.

#### **4.4.5 Trade Credit**

There is partial evidence from Table 44 overleaf that family-owned SMEs are more likely to use trade credit compared with professionally owned firms. The introduction of size in model 3 sees the family ownership likelihood becoming significant at one per cent whilst the introduction of innovation in model 6 drops the coefficient and significance level.

Firm age has little or no impact on a firm's likely usage, yet firm size matters as medium and small firms are shown 9.1 per cent and 5.8 per cent respectively more likely to use trade credit at the one per cent level (model 3) when compared to micro firms. The significance of firm size continues in all models, yet the magnitude lessens as more controls are added. Service sector firms are 10.7 per cent less likely to use trade credit in contrast to industrial firms (base). The introduction of the sector variables (model 4) sees the family ownership coefficient drop to 1.6 per cent from 2.7 per cent in model 3.

Exporters are more likely to use trade credit (models 5-9) and significantly so, likewise innovators are also more likely to use trade credit at the one per cent level (model 6). The magnitude is not as strong for innovators as it is for exporters. Firms who display signs of trading distress are less likely to use trade credit at the one per cent level whilst financially distressed firms too albeit at a lower significance level have a greater likelihood of using trade credit. The marginal effects for both forms of distress are small, however. More favourable growth rates and lower taxes sees firms more likely to use trade credit.

Table 44 – Trade Credit – Family-owned SMEs v professionally managed SMEs

	Trade Credit								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0078 (1.52)	0.0072 (1.40)	0.0270*** (5.27)	0.0157*** (3.02)	0.0160*** (3.06)	0.0144** (1.98)	0.0154** (2.12)	0.0161** (2.22)	0.0121* (1.67)
5-10 Years		-0.0066 (-0.56)	-0.0102 (-0.82)	-0.0089 (-0.71)	-0.0119 (-0.93)	-0.0053 (-0.32)	-0.0038 (-0.23)	-0.0023 (-0.14)	-0.0038 (-0.24)
>10 Years		0.0176* (1.73)	-0.0024 (-0.22)	-0.0106 (-0.97)	-0.0143 (-1.28)	-0.0031 (-0.21)	-0.0002 (-0.01)	0.0009 (0.06)	-0.0025 (-0.18)
Small			0.0580*** (10.77)	0.0496*** (9.15)	0.0443*** (8.03)	0.0392*** (5.11)	0.0363*** (4.70)	0.0378*** (4.90)	0.0465*** (6.13)
Medium			0.0913*** (15.59)	0.0749*** (12.47)	0.0634*** (10.34)	0.0453*** (5.37)	0.0401*** (4.73)	0.0434*** (5.07)	0.0562*** (6.59)
Construction				-0.0234** (-2.46)	0.0020 (0.20)	0.0092 (0.67)	0.0096 (0.69)	0.0084 (0.61)	0.0036 (0.27)
Trade				0.0215*** (2.77)	0.0364*** (4.71)	0.0339*** (3.20)	0.0336*** (3.16)	0.0342*** (3.21)	0.0264** (2.52)
Services				-0.1067*** (-16.87)	-0.0882*** (-13.72)	-0.0737*** (-8.29)	-0.0750*** (-8.43)	-0.0749*** (-8.43)	-0.0761*** (-8.63)
Exporters					0.0495*** (10.03)	0.0384*** (5.57)	0.0363*** (5.26)	0.0367*** (5.32)	0.0401*** (5.90)
Innovators						0.0292*** (4.36)	0.0270*** (4.03)	0.0269*** (4.02)	0.0238*** (3.61)
Trading Distress							-0.0075*** (-4.84)	-0.0094*** (-5.60)	-0.0055*** (-3.31)
Financial Distress								0.0062*** (2.94)	0.0041** (1.96)
Corp Tax Rate									-0.0048*** (-5.34)
Inflation Rate									-0.0936*** (-14.30)
GDP Growth Rate									0.0056*** (3.47)
Observations	36389	36389	36389	36389	36043	16846	16846	16846	16846

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In summary, family-owned SMEs appear somewhat more likely to use trade credit compared to professionally owned firms, however, the likelihood is less significant here than in Table 33 when family firms compared to sole owners. The family effect, however, is only significant at the one per cent level when the firm size variable is introduced in model 3 and this level of significance prevails in models 3 to 5. Larger firms, exporters, innovators and those not in trading distress are deemed more likely to have used trade credit of late.

#### **4.4.6 Other Loans**

Table 45 overleaf presents the results on the use of other loans by family-owned SMEs in contrast to professionally managed SMEs. The results show how family-owned SMEs are less likely to use other loans in contrast to professionally owned SMEs. The magnitude of the likelihood ranges between 2.7 per cent to 2.0 per cent consistently at the one per cent level throughout. As in earlier tables, the effect is strongest (2.7 per cent) in model 1 when the only indicator is firm ownership.

As firms age the likelihood of SMEs using other loans declines and this effect continues in all subsequent models. Medium firms are shown to have a 2.3 per cent greater likelihood of other loan usage in comparison with micro firms (model 3). The magnitude is in the range of 2.7 per cent to 1.8 per cent across the 9 models and statistically significant at the one per cent level.

Export-oriented firms are shown more likely to use other loans at one per cent (model 5) but the evidence is not consistently significant at this level. Greater support is shown for the innovator dummy as those firms are found to be 2.4 per cent more likely to use other loans compared with non-innovative firms. Firms undergoing financial distress appear more likely to use other loans whilst significant at the one per cent level the marginal effect is small. Macroeconomic conditions are not found to impact the likelihood of an SME using other loans.

Table 45 – Other Loans – Family-owned SMEs v professionally managed SMEs

	Model 1	Model 2	Model 3	Model 4	Other Loans Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	-0.0269*** (-6.33)	-0.0266*** (-6.27)	-0.0211*** (-4.90)	-0.0213*** (-4.92)	-0.0209*** (-4.81)	-0.0203*** (-3.37)	-0.0206*** (-3.41)	-0.0195*** (-3.23)	-0.0206*** (-3.41)
5-10 Years		-0.0495*** (-4.64)	-0.0519*** (-4.74)	-0.0514*** (-4.69)	-0.0524*** (-4.72)	-0.0549*** (-3.80)	-0.0554*** (-3.83)	-0.0532*** (-3.70)	-0.0529*** (-3.69)
>10 Years			-0.0513*** (-5.37)	-0.0575*** (-5.83)	-0.0576*** (-5.84)	-0.0590*** (-5.90)	-0.0551*** (-4.20)	-0.0559*** (-4.25)	-0.0539*** (-4.14)
Small				0.0115*** (2.71)	0.0116*** (2.73)	0.0101** (2.32)	0.0072 (1.23)	0.0078 (1.32)	0.0095 (1.63)
Medium					0.0228*** (5.02)	0.0230*** (4.88)	0.0184*** (3.83)	0.0219*** (3.28)	0.0229*** (3.40)
Construction						-0.0099 (-1.47)	-0.0018 (-0.26)	-0.0056 (-0.58)	-0.0057 (-0.59)
Trade						0.0090 (1.63)	0.0135** (2.45)	0.0060 (0.80)	0.0067 (0.80)
Services						-0.0014 (-0.29)	0.0053 (1.08)	0.0036 (0.53)	0.0038 (0.55)
Exporters							0.0199*** (5.16)	0.0092* (1.72)	0.0096* (1.79)
Innovators								0.0247*** (4.72)	0.0242*** (4.78)
Trading Distress								0.0015 (1.29)	-0.0008 (-0.60)
Financial Distress									0.0073*** (4.47)
Corp Tax Rate									-0.0022** (-3.08)
Inflation Rate									0.0052 (1.00)
GDP Growth Rate									0.0016 (1.22)
Observations	36208	36208	36208	36208	35851	16802	16802	16802	16802

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In sum, SME ownership appears relevant in their likely usage of other loans as family-owned firms are deemed less likely to use these compared with professionally owned firms even when the sample size reduces from 36,208 to 16,802 in model 6, whilst the likelihood is stronger here than the comparison of family firms with solely owned firms in Table 34. Of the control variables it is firm age (younger), firm size (larger), innovation and financial distress that are found to have the strongest influence on the likelihood of an SME using other loans.

#### **4.4.7 Debt Securities**

Table 46 overleaf illustrates how there is no difference in the likely usage of debt securities by family-owned SMEs and professionally owned firms.

There is some evidence to suggest that larger firms and those in the services sector are less likely to use debt securities, but not consistently so.

Firms who experience trading and financial distress are more likely to use debt securities, but the marginal effect is low. More favourable macroeconomic conditions, in terms higher taxes and lower inflation levels, increase the likelihood of an SME using debt securities.

In summary, firm ownership does not appear to determine the likely usage of debt securities by European SMEs. While firm size, firm sector and the macroeconomic variables have some relevance, the likelihood of usage is insignificant across most models.

Table 46 – Debt Securities – Family-owned SMEs v professionally managed SMEs

	Model 1	Model 2	Model 3	Model 4	Debt Securities				
					Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	0.0019 (1.39)	0.0019 (1.40)	0.0011 (0.73)	0.0002 (0.15)	0.0002 (0.11)	0.0021 (1.10)	0.0019 (0.99)	0.0019 (1.00)	0.0015 (0.79)
5-10 Years		-0.0025 (-0.68)	-0.0022 (-0.65)	-0.0022 (-0.61)	-0.0024 (-0.66)	0.0042 (1.03)	0.0039 (0.95)	0.0042 (1.03)	0.0040 (0.92)
>10 Years		-0.0035 (-1.09)	-0.0025 (-0.80)	-0.0031 (-0.98)	-0.0033 (-1.02)	0.0023 (0.73)	0.0020 (0.59)	0.0022 (0.66)	0.0013 (0.39)
Small			-0.0042*** (-2.73)	-0.0048*** (-2.99)	-0.0046*** (-2.90)	-0.0009 (-0.44)	-0.0004 (-0.19)	0.0000 (0.00)	0.0020 (0.95)
Medium				-0.0039** (-2.44)	-0.0047*** (-2.79)	-0.0044** (-2.52)	-0.0027 (-1.19)	-0.0018 (-0.78)	-0.0010 (-0.45)
Construction					0.0005 (0.19)	-0.0003 (-0.09)	0.0012 (0.29)	0.0011 (0.28)	0.0008 (0.22)
Trade					0.0018 (0.81)	0.0015 (0.62)	0.0020 (0.63)	0.0019 (0.62)	0.0020 (0.64)
Services					-0.0066*** (-3.61)	-0.0070*** (-3.63)	-0.0067*** (-2.60)	-0.0065** (-2.55)	-0.0065** (-2.57)
Exporters						-0.0013 (-0.91)	-0.0023 (-1.22)	-0.0020 (-1.06)	-0.0019 (-1.03)
Innovators							0.0031* (1.70)	0.0033* (1.84)	0.0032* (1.76)
Trading Distress								0.0011*** (2.68)	0.0006 (1.37)
Financial Distress									0.0015** (2.53)
Corp Tax Rate									0.0011*** (3.57)
Inflation Rate									-0.0137*** (-6.71)
Observations	35859	35859	35859	35859	35523	16655	16655	16655	16655

t statistics in parentheses  
\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

#### 4.4.8 Equity Capital

Table 47 overleaf depicts how family-owned firms are less likely to use equity capital in contrast to professional owners. The magnitude of the likelihood ranges from 1.5 per cent to 0.7 per cent across the 9 models and is statistically significant at the one per cent level when controls for firm age, firm size, firm sector and export activity are introduced in models 1 to 5. The addition of the innovator dummy in model 6 sees a drop in the magnitude and in the statistical significance and in all subsequent models.

Older SMEs appear much less likely to use equity capital in contrast to young firms and consistently so throughout. As firms grow the likelihood of equity capital usage increases and continually so at the one per cent level. Small firms are 1.3 per cent and medium firms are 1.7

per cent more likely to use equity capital compared to micro firms in model 3 which continues in all subsequent models with little variation in magnitude.

Innovators are more likely to use equity capital, evident in all models albeit at the five per cent level. The introduction of the innovation variable (model 6) lessens the ownership coefficient and reduces the sample size to 16,631 versus 35,515 in model 5.

*Table 47 – Equity Capital – Family-owned SMEs v professionally managed SMEs*

	Model 1	Model 2	Model 3	Model 4	Equity Capital Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	-0.0148*** (-6.65)	-0.0145*** (-6.55)	-0.0102*** (-4.84)	-0.0099*** (-4.74)	-0.0099*** (-4.69)	-0.0071** (-2.29)	-0.0069** (-2.25)	-0.0071** (-2.31)	-0.0073** (-2.34)
5-10 Years		-0.0141** (-2.50)	-0.0178*** (-2.76)	-0.0176*** (-2.75)	-0.0154** (-2.42)	-0.0154* (-1.73)	-0.0152* (-1.71)	-0.0158* (-1.76)	-0.0153* (-1.72)
>10 Years		-0.0178*** (-3.51)	-0.0253*** (-4.33)	-0.0251*** (-4.31)	-0.0234*** (-4.03)	-0.0248*** (-3.08)	-0.0245*** (-3.06)	-0.0252*** (-3.10)	-0.0246*** (-3.06)
Small			0.0127*** (6.52)	0.0130*** (6.66)	0.0133*** (6.76)	0.0154*** (5.15)	0.0153*** (5.10)	0.0150*** (4.96)	0.0143*** (4.69)
Medium			0.0170*** (7.91)	0.0179*** (7.96)	0.0177*** (7.81)	0.0165*** (4.95)	0.0162*** (4.84)	0.0154*** (4.59)	0.0143*** (4.28)
Construction				0.0004 (0.12)	0.0007 (0.21)	0.0026 (0.51)	0.0027 (0.53)	0.0030 (0.58)	0.0029 (0.55)
Trade				0.0033 (1.33)	0.0036 (1.44)	0.0014 (0.37)	0.0014 (0.36)	0.0013 (0.35)	0.0011 (0.29)
Services				0.0035* (1.65)	0.0040* (1.80)	0.0032 (0.94)	0.0032 (0.93)	0.0032 (0.95)	0.0028 (0.81)
Exporters					0.0017 (0.94)	0.0017 (0.61)	0.0016 (0.58)	0.0015 (0.56)	0.0013 (0.46)
Innovators						0.0064** (2.38)	0.0062** (2.30)	0.0062** (2.32)	0.0063** (2.36)
Trading Distress							-0.0006 (-0.94)	-0.0001 (-0.15)	-0.0002 (-0.23)
Financial Distress								-0.0016* (-1.86)	-0.0014 (-1.59)
Corp Tax Rate									-0.0003 (-0.92)
Inflation Rate									0.0063** (2.33)
GDP Growth Rate									0.0003 (0.38)
Observations	35849	35849	35849	35849	35515	16631	16631	16631	16631

*t* statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In summary, family-owned SMEs appear less likely to use equity capital when compared with professionally owned firms and statistically so. Younger SMEs (more pronounced here than shown earlier in Table 36 comparison of family firms and sole owners), larger firms and

innovators appear more likely to use equity capital, albeit the marginal effect of the innovator dummy is small.

#### **4.4.9 Leasing and Hire-purchase**

Table 48 overleaf illustrates how family-owned firms are found to be less likely to use leasing and hire-purchase compared with professional owners (models 1 and 2) but, following the introduction of firm size, the coefficient changes to positive at the one per cent level. The likelihood of family-owned SMEs using leasing and hire purchase continues in models 3 to 5 but then drops to ten per cent significance in models 6 – 9.

The results are mixed for firm age as initially older firms are depicted to be 3.1 per cent more likely to use leasing and hire purchase at the one per cent level but only in model 2. However, in all subsequent models such firms appear less likely to use leasing and hire purchase. In contrast, firm size depicts more consistency and suggests that medium sized firms are 28 per cent and small firms are 18 per cent respectively more likely to use leasing and hire purchase compared with micro firms and consistently so at one per cent confidence level. As expected, and just as in Table 37 earlier when contrasting family-owned SMEs with sole owners, firms operating in the construction sector have the highest likelihood of using leasing and hire purchase and significantly so. Service sector firms are also more likely to use leasing and hire purchase albeit the marginal effects are weaker.

Exporters are on average up 3.0 per cent more likely to use leasing and hire purchase and significantly so at the one per cent level. The introduction of the innovator dummy in model 6 sees the family ownership coefficient reduce by almost one per cent and the sample size to 16,924 from 36,174 in model 5. Firms who are deemed to suffer either trading distress (model 7) or financial distress (model 8) are less likely to use leasing and hire purchase, although the evidence for financial distress is more compelling. Finally, more favourable macroeconomic conditions see firms more likely to use leasing and hire purchase.

Table 48 – Leasing and Hire Purchase – Family-owned SMEs v professionally managed SMEs

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
	Leasing and Hire-Purchase								
Family Firms	-0.0369*** (-6.22)	-0.0378*** (-6.37)	0.0221*** (4.04)	0.0234*** (4.28)	0.0239*** (4.34)	0.0146* (1.82)	0.0152* (1.89)	0.0140* (1.73)	0.0140* (1.76)
5-10 Years		-0.0084 (-0.65)	-0.0193 (-1.38)	-0.0202 (-1.44)	-0.0240* (-1.69)	-0.0160 (-0.82)	-0.0152 (-0.78)	-0.0184 (-0.94)	-0.0127 (-0.67)
>10 Years		0.0310*** (2.75)	-0.0318*** (-2.61)	-0.0309** (-2.54)	-0.0360*** (-2.91)	-0.0431** (-2.55)	-0.0417** (-2.47)	-0.0442*** (-2.61)	-0.0362** (-2.19)
Small			0.1746*** (31.20)	0.1753*** (31.34)	0.1725*** (30.45)	0.1816*** (22.22)	0.1806*** (22.04)	0.1785*** (21.70)	0.1664*** (20.19)
Medium			0.2797*** (44.70)	0.2839*** (43.89)	0.2746*** (41.52)	0.2833*** (29.82)	0.2805*** (29.35)	0.2749*** (28.48)	0.2540*** (26.27)
Construction				0.0335*** (3.48)	0.0524*** (5.24)	0.0475*** (3.30)	0.0478*** (3.32)	0.0494*** (3.43)	0.0493*** (3.44)
Trade				-0.0040 (-0.56)	0.0055 (0.76)	0.0032 (0.30)	0.0029 (0.28)	0.0022 (0.21)	0.0004 (0.04)
Services				0.0223*** (3.47)	0.0355*** (5.35)	0.0318*** (3.30)	0.0311*** (3.22)	0.0310*** (3.22)	0.0257*** (2.69)
Exporters					0.0366*** (6.82)	0.0348*** (4.47)	0.0335*** (4.30)	0.0329*** (4.22)	0.0282*** (3.65)
Innovators						0.0027 (0.35)	0.0013 (0.17)	0.0014 (0.18)	0.0032 (0.41)
Trading Distress							-0.0047*** (-2.66)	-0.0015 (-0.80)	-0.0036* (-1.90)
Financial Distress								-0.0105*** (-4.32)	-0.0065*** (-2.71)
Corp Tax Rate									-0.0015 (-1.44)
Inflation Rate									0.1223*** (16.09)
GDP Growth Rate									0.0044** (2.15)
Observations	36537	36537	36537	36537	36173	16924	16924	16924	16924

t statistics in parentheses  
\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In sum, there is some evidence to suggest that family-owned SMEs are more likely to use leasing and hire purchase compared with professionally owned firms. Initially, family-owned SMEs are found less likely to use leasing and hire purchase, but this relationship turns positive in model 3 and the statistical significance of this likelihood drops to ten per cent from model 6 onwards. Instead, firm age (younger), firm size (larger), being an exporter and financially stronger appear to matter more in explaining an SME's leasing and hire purchase usage.

#### **4.4.10 Factoring**

In Table 49 overleaf, just as with leasing and hire purchase, there is rather mixed evidence of the likelihood of a family firm using factoring in contrast to professional owners. Initially, the likelihood is negative and statistically significant at the one per cent level but only in models 1 and 2. In all subsequent models' firm ownership is insignificant.

Larger firms are 9.4 per cent more likely to use factoring compared to micro firms as illustrated in model 2 and the significance continues at the one per cent level throughout. Industrial sector firms (base) have the highest likelihood of using factoring whereas service sector firms are the least likely to employ factoring.

The introduction of the exporter dummy in model 5 sees a firm having a 2.5 per cent greater likelihood of using factoring compared with non-export firms at the one per cent level. There is some evidence that those experiencing trading distress are less likely to use factoring in contrast to financially distressed firms who appear more likely to use factoring (model 8).

Table 49 – Factoring – Family-owned SMEs v professionally managed SMEs

	Model 1	Model 2	Model 3	Model 4	Factoring Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	-0.0169*** (-4.62)	-0.0173*** (-4.71)	0.0036 (1.07)	0.0003 (0.08)	0.0001 (0.03)	0.0025 (0.50)	0.0026 (0.54)	0.0036 (0.73)	0.0041 (0.83)
5-10 Years		0.0031 (0.42)	0.0006 (0.07)	0.0014 (0.16)	-0.0008 (-0.08)	0.0013 (0.10)	0.0016 (0.13)	0.0042 (0.34)	0.0038 (0.30)
>10 Years		0.0154** (2.41)	-0.0037 (-0.48)	-0.0050 (-0.64)	-0.0067 (-0.84)	-0.0076 (-0.70)	-0.0072 (-0.67)	-0.0051 (-0.48)	-0.0063 (-0.59)
Small			0.0501*** (15.39)	0.0470*** (14.17)	0.0453*** (13.37)	0.0453*** (9.27)	0.0450*** (9.20)	0.0462*** (9.52)	0.0478*** (9.84)
Medium			0.0937*** (23.20)	0.0801*** (19.86)	0.0739*** (18.16)	0.0745*** (12.71)	0.0739*** (12.55)	0.0780*** (13.02)	0.0814*** (13.36)
Construction				-0.0314*** (-4.91)	-0.0166** (-2.43)	-0.0194** (-1.97)	-0.0193** (-1.96)	-0.0207** (-2.13)	-0.0200** (-2.06)
Trade				-0.0358*** (-7.07)	-0.0282*** (-5.65)	-0.0302*** (-4.20)	-0.0303*** (-4.22)	-0.0296*** (-4.12)	-0.0285*** (-3.98)
Services				-0.0552*** (-12.59)	-0.0449*** (-10.10)	-0.0458*** (-7.11)	-0.0459*** (-7.13)	-0.0458*** (-7.12)	-0.0446*** (-6.96)
Exporters					0.0247*** (7.28)	0.0259*** (5.28)	0.0256*** (5.21)	0.0264*** (5.36)	0.0275*** (5.58)
Innovators						0.0090* (1.93)	0.0087* (1.87)	0.0086* (1.85)	0.0087* (1.87)
Trading Distress							-0.0011 (-0.98)	-0.0036*** (-3.06)	-0.0034*** (-2.85)
Financial Distress								0.0083*** (5.63)	0.0077*** (5.24)
Corp Tax Rate									0.0013** (2.04)
Inflation Rate									-0.0197*** (-4.16)
GDP Growth Rate									0.0005 (0.38)
Observations	35979	35979	35979	35979	35649	16705	16705	16705	16705

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In summary, there is no evidence to suggest that ownership matters in the likelihood of a firm using factoring. Instead, firm size (larger) matters more as does exporting and financial distress in influencing the likely usage of factoring in contrast to firm ownership.

#### **4.4.11 Other Sources**

Table 50 overleaf illustrates how family-owned firms are less likely to use other sources of finance compared with professionally owned SMEs (other sources of finance include subordinated debt instruments, participating loans, peer-to-peer lending, and crowdfunding). The effect is statistically significant at the one per cent level in all models. The marginal effects are small yet generally increase as more variables are introduced.

There is some evidence that older SMEs are less likely to use other sources in contrast with the younger cohort, but the statistical significance is just at the five per cent. Firm size is deemed to have a greater impact especially small and medium sized firms who are more likely to use other sources compared with micro firms. The size effect is significant at the one per cent level in models 3 - 8 and with the introduction of the macroeconomic control dummies in model 9 the significance of firm size drops to five per cent.

Innovative SMEs more so than exporters are shown to be more likely to use other sources compared with non-exporting firms and non-innovators. Firms who display signs of financial distress are more likely to have used other sources, but just as with the exporter and innovators variables the marginal effects are small.

Table 50 – Other Sources – Family-owned SMEs v professionally managed SMEs

	Model 1	Model 2	Model 3	Model 4	Other Sources Model 5	Model 6	Model 7	Model 8	Model 9
Family Firms	-0.0078*** (-3.93)	-0.0077*** (-3.89)	-0.0055*** (-2.81)	-0.0054*** (-2.77)	-0.0060*** (-3.03)	-0.0107*** (-3.21)	-0.0107*** (-3.21)	-0.0103*** (-3.11)	-0.0103*** (-3.10)
5-10 Years		-0.0053 (-1.06)	-0.0064 (-1.18)	-0.0064 (-1.20)	-0.0053 (-0.99)	-0.0111 (-1.34)	-0.0110 (-1.34)	-0.0101 (-1.23)	-0.0091 (-1.15)
>10 Years		-0.0097** (-2.22)	-0.0126*** (-2.65)	-0.0126*** (-2.65)	-0.0120** (-2.51)	-0.0166** (-2.25)	-0.0166** (-2.24)	-0.0159** (-2.18)	-0.0143** (-2.03)
Small			0.0061*** (3.22)	0.0062*** (3.32)	0.0063*** (3.30)	0.0098*** (3.11)	0.0098*** (3.09)	0.0104*** (3.30)	0.0087*** (2.74)
Medium			0.0089*** (4.34)	0.0096*** (4.46)	0.0083*** (3.90)	0.0096*** (2.81)	0.0095*** (2.76)	0.0109*** (3.10)	0.0085*** (2.45)
Construction				0.0036 (1.13)	0.0058* (1.71)	0.0082 (1.43)	0.0082 (1.43)	0.0079 (1.40)	0.0077 (1.35)
Trade				0.0013 (0.54)	0.0026 (1.10)	0.0011 (0.29)	0.0011 (0.29)	0.0012 (0.32)	0.0009 (0.23)
Services				0.0025 (1.21)	0.0038* (1.81)	0.0036 (1.03)	0.0035 (1.02)	0.0034 (1.00)	0.0026 (0.75)
Exporters					0.0054*** (3.12)	0.0065** (2.27)	0.0065** (2.26)	0.0065** (2.28)	0.0058** (2.02)
Innovators						0.0086*** (3.14)	0.0086*** (3.12)	0.0086*** (3.12)	0.0084*** (3.08)
Trading Distress							-0.0001 (-0.20)	-0.0009 (-1.23)	-0.0010 (-1.48)
Financial Distress								0.0023*** (2.62)	0.0027*** (3.05)
Corp Tax Rate									-0.0006* (-1.68)
Inflation Rate									0.0136*** (4.83)
GDP Growth									0.0000 (0.03)
Observations	35481	35481	35481	35481	35154	16428	16428	16428	16428

t statistics in parentheses  
\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

In summary, family owners appear less likely to use other sources in contrast to professionally owned SMEs. Indeed, the likelihood is much more pronounced here than shown in Table 39 earlier (family firms versus solely owned firms). Firm size, innovation and financial distress are found to impact the likelihood of a European SME using other sources, albeit the marginal effects are small.

The next section, 4.5, provides the results of family-owned SMEs in contrast to all other SMEs (sole owners and professional owners).

## **4.5 Sources of Finance used: Family-owned SMEs V all other SMEs**

This section provides details of the likelihood of the use of the various sources of finance by family-owned SMEs in contrast to all other SMEs in the sample (Table 51 overleaf). All other SMEs comprises of solely owned firms and professionally owned SMEs. This likelihood of source usage is assessed using the same firm level variables and macroeconomic controls employed for research question one.

### **4.5.1 Firm Ownership**

Family-owned SMEs are more likely to use retained earnings, grants and subsidised bank loans, bank loans, trade credit and especially bank credit lines in contrast to all other SMEs and statistically so at the one per cent level. It appears that family-owned SMEs are more likely to use factoring in contrast to other SMEs, albeit the marginal effects are small, and the statistical significance is at the ten per cent level. No evidence is found that firm ownership impacts the likely use of other loans, debt securities, equity capital, leasing and hire purchase and other sources of finance by family-owned SMEs when compared to all other SMEs.

In summary, family-owned SMEs are shown to be more likely to use the more traditional sources of finance in contrast to all other SMEs in the sample. The evidence is more powerful for both forms of bank finance and retained earnings.

### **4.5.2 Firm level variables**

The age of an SME is shown to determine the likely use of retained earnings, bank credit lines, other loans, equity capital and to a lesser extent bank loans, other sources of finance and grants and subsidised bank loans. Notably, more mature firms (over 10 years old) appear more likely to use bank credit lines and retained earnings in contrast to younger SMEs and particularly so when compared to the youngest cohort. Just as with the earlier findings of research question

one, firm size is found to be more significant in explaining the likelihood of an SME using the various sources of finance. Medium sized firms are shown much more likely to use most of the sources including, retained earnings, grants and subsidised bank loans, bank credit lines and loans, trade credit, other loans, equity capital, leasing and hire purchase, factoring and other sources in contrast to micro-SMEs. This evidence is statistically significant at the one per cent level. By and large firms in the industrial sector appear more likely to use the various sources of finance in contrast to those in other sectors.

Those firms who are exporters and innovators, just as with the earlier results reported in Tables 29-50, are shown to use a more diverse range of sources in contrast to those firms who do not export or innovate. Little evidence is found to support the likely use of the various sources by those firms suffering trading distress. On the other hand, financially distressed SMEs appear more likely to use bank credit lines, bank loans, grants and subsidised bank loans, other loans, trade credit, factoring and other sources of finance. The evidence is statistically significant albeit the marginal effects are small.

In sum, the youngest and especially so the smallest SMEs appear statistically less likely to use the sources of finance in contrast to their more mature and bigger counterparts. Exporters and innovators are found to rely on more of the sources.

#### **4.5.3      Macroeconomic controls**

The three macroeconomic controls are not found to be a significant factor in influencing the likelihood of an SME using the various sources of finance. The notable exception being that more favourable macroeconomic conditions appear to impact the likely use of bank loans by firms, albeit the marginal effects are small.

The next section, 4.6, provides greater detail of the likelihood of using the various sources of finance by family-owned SMEs only.

Table 51 - Sources of Finance - Family Owned v All Other SME

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0355*** (7.36)	0.0206*** (5.26)	0.0465*** (7.08)	0.0331*** (6.22)	0.0286*** (6.22)	-0.0017 (-0.46)	0.0016 (1.26)	-0.0006 (-0.33)	-0.0050 (-0.91)	0.0060* (1.86)	-0.0030 (-1.54)
5-10 Years	0.0288*** (2.66)	0.0152* (1.70)	0.0544*** (3.64)	0.0293** (2.42)	0.0097 (0.89)	-0.0415*** (-4.17)	0.0041 (1.57)	-0.0169*** (-2.77)	0.0099 (0.73)	0.0012 (0.14)	-0.0104* (-1.82)
>10 Years	0.0387*** (4.24)	0.0152** (2.01)	0.0718*** (5.63)	0.0382*** (3.74)	0.0120 (1.29)	-0.0423*** (-4.75)	0.0037* (1.81)	-0.0236*** (-4.28)	-0.0132 (-1.14)	-0.0063 (-0.88)	-0.0154*** (-3.05)
Small	0.0548*** (9.86)	0.0419*** (9.10)	0.0507*** (6.50)	0.0759*** (12.26)	0.0455*** (8.36)	0.0091 ** (2.11)	0.0015 (1.01)	0.0093*** (4.16)	0.1530*** (23.61)	0.0424 *** (11.74)	0.0104 *** (4.39)
Medium	0.1069*** (15.51)	0.0568*** (10.28)	0.0721*** (8.07)	0.1390*** (18.29)	0.0655*** (10.17)	0.0353*** (6.50)	0.0017 (0.95)	0.0123*** (4.56)	0.2446*** (30.81)	0.0781*** (16.04)	0.0116*** (4.14)
Construction	0.0068 (0.68)	-0.0267*** (-3.32)	0.0496*** (3.72)	0.0040 (0.37)	0.0063 (0.63)	0.0030 (0.41)	0.0016 (0.60)	0.0013 (0.35)	0.0482*** (4.33)	-0.0235*** (-3.37)	0.0070* (1.71)
Trade	-0.0101 (-1.34)	-0.0255*** (-3.98)	0.0267** (2.54)	0.0169** (1.98)	0.0237*** (3.01)	0.0142** (2.43)	0.0020 (0.90)	-0.0003 (-0.11)	0.0044 (0.52)	-0.0261*** (-4.82)	0.0016 (0.56)
Services	-0.0166** (-2.40)	-0.0309*** (-5.23)	-0.0319*** (-3.32)	-0.0253*** (-3.31)	-0.0639*** (-9.51)	0.0082 (1.56)	-0.0032* (-1.75)	0.0023 (0.86)	0.0231*** (3.01)	-0.0385*** (-7.84)	0.0060** (2.25)
Exporters	0.0232*** (4.47)	0.0203*** (4.80)	0.0367*** (5.17)	0.0128** (2.22)	0.0362*** (7.32)	0.0109*** (2.69)	0.0000 (0.00)	0.0043** (2.13)	0.0299*** (5.01)	0.0218*** (6.20)	0.0059*** (2.74)
Innovators	0.0245*** (4.81)	0.0345*** (8.53)	0.0303*** (4.31)	0.0252*** (4.46)	0.0236*** (4.87)	0.0246*** (6.26)	0.0033** (2.51)	0.0056*** (2.81)	0.0038 (0.65)	0.0129*** (3.86)	0.0093*** (4.45)
Trading Distress	0.0035*** (2.75)	-0.0025** (-2.37)	-0.0056*** (-3.18)	-0.0064*** (-4.56)	-0.0038*** (-3.11)	-0.0001 (-0.10)	0.0003 (0.82)	0.0002 (0.50)	-0.0045*** (-3.05)	-0.0030*** (-3.56)	-0.0010* (-1.83)
Financial Distress	-0.0210*** (-13.11)	0.0078*** (6.01)	0.0229*** (10.35)	0.0072*** (4.08)	0.0034** (2.18)	0.0076*** (6.09)	0.0015*** (3.52)	-0.0008 (-1.27)	-0.0070*** (-3.77)	0.0062*** (5.85)	0.0026*** (3.90)
Corp Tax Rate	0.0062*** (8.35)	0.0048*** (7.48)	-0.0015 (-1.56)	0.0106*** (12.65)	-0.0047*** (-7.17)	-0.0017*** (-3.13)	0.0012*** (4.83)	-0.0006** (-2.09)	0.0002 (0.23)	0.0019*** (3.78)	-0.0004 (-1.52)
Inflation Rate	0.0104* (1.95)	-0.0129*** (-2.99)	0.0461*** (6.46)	-0.0207*** (-3.54)	-0.0893*** (-18.29)	0.0005 (0.13)	-0.0130*** (-8.34)	0.0056*** (2.77)	0.1173*** (19.48)	-0.0164*** (-4.68)	0.0129*** (5.92)
GDPGrowthRate	0.0084*** (6.20)	0.0000 (0.01)	0.0046** (2.29)	0.0073*** (4.40)	0.0042*** (3.51)	0.0017* (1.69)	0.0003 (0.54)	0.0059*** (3.62)	0.0009 (0.85)	0.0009 (0.43)	0.0002
Observations	26243	26369	26689	26552	26447	26424	26206	26171	26617	26284	25885

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## **4.6 Sources of Finance used: Family-owned SME Subsample**

This section concentrates exclusively on the likely use of the various sources of finance by family-owned SMEs (Table 52, see page 220). The likelihood is analysed against the firm level variables and macroeconomic controls used throughout the tests for research question one.

### **4.6.1 Retained Earnings**

There is some evidence to suggest that those family-owned SMEs aged over ten years are more likely to rely on this source. Firm size matters more in that small and especially medium-sized family firms are more likely to use retained earnings in contrast to micro firms, and statistically so at the one per cent level. Family firms who are deemed exporters and innovators are more likely to use this source compared to their cohorts who do not export or innovate. Family firms who are experiencing financial distress are statistically less likely to use retained earnings.

### **4.6.2 Grants and Subsidised Bank Loans**

More mature family-owned SMEs, over ten years of age, are somewhat more likely to use grants and subsidised bank loans. The size of a family firm appears to determine the likelihood of this cohort using this source as small and medium family firms are more likely to use grants and subsidised bank loans compared to those classed as micro-sized. Those family firms who are domiciled in the industrial sector are more likely to use this source and statistically so at the one per cent level in contrast to other sectors. Financially distressed family have a greater likelihood of using grants and subsidised bank loans.

### **4.6.3 Bank Credit Lines**

Firm age and size are found to impact the likely use of bank credit lines by family-owned SMEs. Those family firms over ten years of age, small and more so medium-sized are more likely to use bank credit lines in contrast to the youngest and smallest firms. Family-owned exporters and innovators have a greater likelihood of relying on bank credit lines and

statistically so compared to non-exporting and non-innovative family firms. Financially distressed family firms are more likely to rely on this source, whilst those deemed to suffer trading distress appear somewhat less likely to use bank credit lines.

#### **4.6.4 Bank Loans**

There is partial evidence found that older family firms are more likely to use bank loans in contrast to the youngest firms. The evidence for firm size is much more pronounced in that small and more so medium-sized family-owned SMEs are much more likely to use this source compared to micro firms. Services firms are statistically less likely to use bank credit lines than those in the industrial sector. Innovators also have a greater likelihood of using bank loans. More favourable macroeconomic conditions, notably corporate tax rate and strong GDP growth, impact the likely use of this source by family-owned SMEs, albeit the magnitude of this likelihood is small.

#### **4.6.5 Trade Credit**

Firm size appears to matter in the likely use of trade credit by family-owned SMEs. Small firms and especially the medium-sized cohort are more likely to use this source than micro family firms. Those firms who export and those who are classed as innovators are found more likely to use trade credit and statistically so at the one per cent level. Firms experiencing trading distress are less likely to rely on this source. The magnitude of this effect is small.

#### **4.6.6 Other Loans**

Older family firms are shown less likely to use other loans in contrast to the youngest cohort. The significance of this likelihood is at the one per cent level. On the other hand, medium-sized firms are more likely to rely on this source than micro family firms. Innovative firms have a greater likelihood of using other loans compared to their counterparts who do not innovate.

#### **4.6.7      Debt Securities**

There is little evidence found that the firm level variables or the macroeconomic controls impact the likelihood of a family-owned SME using debt securities. There is partial evidence shown that innovators and those suffering financial distress are more likely to use this source. The statistical significance is at the ten per cent level and the magnitude is small.

#### **4.6.8      Equity Capital**

The evidence of the likely use of equity capital by family-owned SMEs is scarce. The exception shows how small and medium-sized firms are found more likely to use this equity capital in contrast to micro firms.

#### **4.6.9      Leasing and Hire-purchase**

There is partial evidence found that older family-owned SMEs are less likely to use leasing and hire purchase compared to the youngest firms. The evidence for firm size is much stronger in that small firms and most notably medium-sized family firms are more likely to use this source and statistically so at the one per cent level. Those in the construction sector are also found more likely to use leasing and hire purchase, whilst there is some evidence to suggest that services sector family firms use this source. Export-oriented firms have a greater likelihood of using leasing and hire purchase. The macroeconomic conditions do not appear to impact the likely use of this source by family firms.

#### **4.6.10     Factoring**

Family-owned SMEs who are classed as small and medium sized are more likely to use factoring and the statistical significance of this likelihood is at the one per cent level. Industrial sector firms are more likely to rely on this source in contrast to those in the trade and services sector. Exporters are shown more likely to use factoring compared to their non-export counterparts. Financially distressed family firms are also more likely to use factoring, albeit the magnitude of this likelihood is small.

#### **4.6.11 Other Sources**

As with equity capital earlier, the evidence of the likelihood of a family-owned SME using other sources of finance is scarce. There is some evidence found to suggest that the youngest family firms are more likely to use other sources in contrast to older firms. Firms who are small and medium-sized are more likely to use this source and statistically so at the one per cent level, albeit the magnitude is small. Innovators are shown more likely to rely on other sources.

#### **4.6.12 Summary**

The age of a family-owned SME was not found to be as important a determinant of the likelihood of using the various sources of finance (Table 53 overleaf) in contrast to firm size, which appeared far more influential. Notably, medium sized family firms were more likely to use all eleven sources more so than small firms and especially so in contrast to micro family-owned firms. Family firms in the industrial sector, exporters, innovators and the financially distressed cohort had a greater likelihood of relying on more sources of finance. Family firms who experienced trading distress appeared less likely to use any of the former sources in contrast to their non-stressed cohorts. The macroeconomic conditions do not appear to matter as much as the firm level variables in determining the likely use of the sources of finance by family-owned SMEs.

The next section (4.7) presents the findings of an alternative model (9) using single country dummies in place of the macroeconomic controls.

Table 52 – Family Firm Subsample (excl. ownership)

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
5-10 years	0.0157 (0.83)	0.0228 (1.52)	0.0602** (2.44)	0.0381* (1.88)	-0.0109 (-0.57)	-0.0561*** (-3.42)	0.0034 (0.61)	-0.0052 (-0.52)	-0.0145 (-0.65)	-0.0112 (-0.76)	-0.0181** (-1.96)
10+ years	0.0350** (2.16)	0.0264** (2.09)	0.0642*** (3.03)	0.0442** (2.57)	-0.0023 (-0.14)	-0.0513*** (-3.42)	-0.0005 (-0.10)	-0.0173** (-2.00)	-0.0437** (-2.26)	-0.0111 (-0.86)	-0.0188** (-2.20)
Small	0.0576*** (6.68)	0.0372*** (5.19)	0.0536*** (4.57)	0.0782*** (8.33)	0.0475*** (5.49)	0.0120* (1.87)	0.0024 (1.02)	0.0147*** (4.61)	0.1687*** (18.14)	0.0506*** (9.11)	0.0114*** (3.38)
Medium	0.1314*** (11.96)	0.0640*** (7.21)	0.1015*** (7.44)	0.1738*** (14.60)	0.0674*** (6.50)	0.0334*** (4.14)	0.0052 (1.60)	0.0199*** (4.82)	0.2773*** (23.58)	0.0849*** (11.33)	0.0107*** (2.69)
Construction	0.0198 (1.32)	-0.0518*** (-4.30)	0.0443** (2.29)	-0.0310** (-1.98)	0.0037 (0.24)	-0.0000 (-0.00)	0.0018 (0.43)	0.0031 (0.57)	0.0462*** (2.92)	-0.0118 (-1.09)	0.0115* (1.92)
Trade	0.0046 (0.40)	-0.0401*** (-4.06)	0.0213 (1.40)	0.0209 (1.64)	0.0249** (2.05)	0.0094 (1.13)	0.0030 (0.86)	0.0006 (0.15)	-0.0108 (-0.93)	-0.0259*** (-3.25)	0.0023 (0.59)
Services	-0.0057 (-0.55)	-0.0439*** (-4.73)	-0.0344** (-2.44)	-0.0336*** (-2.92)	-0.0775*** (-7.41)	0.0086 (1.12)	-0.0042 (-1.47)	0.0030 (0.80)	0.0267** (2.43)	-0.0393*** (-5.42)	0.0061* (1.67)
Exporters	0.0260*** (3.18)	0.0320*** (4.77)	0.0458*** (4.31)	0.0076 (0.86)	0.0343*** (4.32)	0.0060 (1.00)	-0.0004 (-0.20)	0.0013 (0.43)	0.0246*** (2.81)	0.0268*** (4.83)	0.0036 (1.17)
Innovators	0.0211*** (2.65)	0.0361*** (5.67)	0.0238** (2.26)	0.0311*** (3.60)	0.0263*** (3.41)	0.0232*** (4.00)	0.0036* (1.69)	0.0050* (1.74)	-0.0003 (-0.03)	0.0133** (2.56)	0.0095*** (3.22)
Trading Distress	0.0039* (1.93)	-0.0032* (-1.92)	-0.0056** (-2.12)	-0.0054** (-2.48)	-0.0051*** (-2.60)	0.0019 (1.31)	0.0006 (1.15)	0.0006 (0.79)	-0.0045** (-2.10)	-0.0027** (-2.07)	-0.0009 (-1.21)
Financial Distress	-0.0254*** (-10.15)	0.0094*** (4.61)	0.0239*** (7.24)	0.0048* (1.76)	0.0031 (1.27)	0.0048*** (2.61)	0.0013* (1.83)	-0.0011 (-1.22)	-0.0051* (-1.90)	0.0073*** (4.41)	0.0020** (2.09)
Corp Tax Rate	0.0071*** (6.19)	0.0053*** (5.29)	-0.0002 (-0.11)	0.0112*** (8.85)	-0.0039*** (-3.71)	-0.0021*** (-2.65)	0.0015*** (3.56)	-0.0001 (-0.16)	0.0010 (0.87)	0.0006 (0.81)	-0.0005 (-1.36)
Inflation Rate	0.0088 (1.09)	-0.0160** (-2.44)	0.0622*** (6.04)	-0.0178** (-2.05)	-0.0907*** (-12.04)	0.0047 (0.81)	-0.0168*** (-6.66)	0.0048* (1.66)	0.1124*** (13.24)	-0.0166*** (-3.18)	0.0088*** (3.00)
GDPGrowthRate	0.0091*** (4.48)	-0.0007 (-0.31)	0.0060** (2.11)	0.0070*** (2.92)	0.0056*** (3.04)	0.0012 (0.87)	0.0003 (0.47)	0.0062*** (2.85)	0.0001 (0.08)	-0.0001 (-0.14)	
Observations	12370	12438	12604	12531	12482	12474	12342	12325	12550	12377	12173

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## **4.7 Sources of Finance used: Single Country Dummies (Model 9)**

The twelve countries in the overall sample are tested individually for the likelihood of using each source of finance as an alternative test to the macroeconomic controls used throughout the tests for research question one. The base country is Germany.

As the only changes made to the two tables below (Tables 53 and 54 overleaf, see pages 225 - 228) relate to the use of the single country dummies, the earlier findings reported above remain valid in respect of firm ownership and all firm level variables and as such are not restated here.

### **4.7.1 Retained Earnings**

SMEs in Ireland, France and Italy are found to be the only ones who are more likely to use retained earnings and statistically so at the one per cent level in contrast to German firms. Austrian firms are also somewhat more likely rely on this source. Notably, those SMEs in Portugal, the Netherlands, Greece and Belgium appear statistically less likely to use retained earnings compared to firms in Germany (base).

### **4.7.2 Grants & Subsidised Bank Loans**

Italian and less so Spanish firms are found in the only two countries more likely to use grants and subsidised bank loans in contrast to German SMEs. On the other hand, SMEs in the Netherlands and Slovakia appear less likely to use this source at the one per cent statistical level.

### **4.7.3 Bank Credit Lines**

The evidence suggests that Irish, Italian and Dutch SMEs are statistically more likely to use bank credit lines compared to the base country (Germany). There is partial evidence to suggest that firms in Portugal, Slovakia, Finland and France are also more likely to use this source. In

particular, Greek SMEs are less likely to use bank credit lines in contrast to their counterparts in Germany, as are those firms in Spain albeit the evidence is weak.

#### **4.7.4 Bank Loans**

SMEs in Belgium, France, Italy and Spain appear more likely to use bank loans in contrast to those domiciled in Germany. On the other hand, Slovakian and Dutch are shown less likely to rely on this source and statistically so at the one per cent level, whilst firms in Greece and Ireland are somewhat less likely to use bank loans compared to German SMEs.

#### **4.7.5 Trade Credit**

SMEs in all countries in the sample are shown more likely to use trade credit in comparison with German firms. The magnitude and statistical significance of this is strongest in Greece, Spain, Italy, Finland and Portugal. Notably, four of the five PIIGS nations appear more likely to rely on trade credit in contrast to the base country (Germany). Moreover, Irish firms are also more likely to use this source and the statistical significance is at the one per cent level.

#### **4.7.6 Other Loans**

German SMEs are more likely to use other loans in contrast to firms in Italy, France, Greece and Portugal and to a lesser extent Spanish, Portuguese, Slovakian and Austrian firms.

#### **4.7.7 Debt Securities**

The country of domicile does not appear to matter in determining the likelihood of an SME using debt securities for most of the countries in the sample. Yet, Greek, French and Italian firms are shown more likely to use this source in contrast to German SMEs.

#### **4.7.8 Equity Capital**

There is evidence to suggest that Slovakian SMEs are more likely to use equity capital and statistically so at the one per cent level in contrast to German firms. Slovakia is the only country where evidence of this greater likelihood is found. Portuguese, Italian and Spanish firms are

less likely to use this source at the one per cent level, whilst there is partial evidence to show how French and Dutch SMEs are less likely to use equity capital than German firms (base).

#### **4.7.9 Leasing and Hire Purchase**

All countries in the sample are shown less likely to use leasing and hire purchase than German SMEs. This likelihood is, however, strongest in Greece, Italy, Portugal and Spain. Notably, the latter constitute four of the PIIGS countries, whilst Irish firms, the fifth PIIGS nation, are also less likely to use this source at the one per cent level in contrast to the base country (Germany).

#### **4.7.10 Factoring**

Evidence of the likelihood of an SME using factoring is found in seven countries. Specifically, French, Finnish, Spanish, Portuguese, Greek, Irish and Italian SMEs are shown more likely to use this source in contrast to those firms located in Germany. The statistical evidence is at the one per cent level.

#### **4.7.11 Other Sources**

Firms in five countries are shown less likely to use other sources in contrast to German SMEs. The statistical significance is at the one per cent level for Italian, Greek and French firms albeit the strength of the magnitude is small. There is partial evidence to show how Slovakian and Finnish firms are also less likely to rely on this source.

#### **4.7.12 Summary**

Italian SMEs were found to use a more diverse range of sources compared to those in Germany and to all other countries in the sample. Italian firms appeared more likely to use retained earnings, grants and subsidised bank loans, bank credit lines and loans, trade credit and factoring. This cohort did not appear to favour the use of equity capital, other loans, leasing and hire purchase or other sources of finance. German SMEs were more likely to rely on leasing and hire purchase, other loans and other sources of finance, whilst they were shown less likely to use trade credit. Firms domiciled in the PIIGS countries appeared more likely to use shorter-

term sources such as trade credit and factoring. These firms were less likely to rely on leasing and hire purchase in contrast to German SMEs.

Table 53 – Single Country Summary Family-Owned SMEs & Sole Owners

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0408*** (7.73)	0.0074* (1.69)	0.0170** (2.29)	0.0099 (1.64)	0.0161*** (3.14)	0.0138*** (3.36)	0.0004 (0.31)	0.0061*** (3.09)	0.0147** (2.42)	0.0030 (0.84)	0.0011 (0.52)
5-10 Years	0.0217* (1.89)	0.0112 (1.13)	0.0471*** (2.89)	0.0300** (2.27)	0.0056 (0.47)	-0.0385*** (-3.75)	0.0043* (1.65)	-0.0129** (-2.17)	0.0224 (1.60)	-0.0057 (-0.64)	-0.0148** (-2.47)
>10 Years	0.0354*** (3.63)	0.0088 (1.05)	0.0650*** (4.68)	0.0349*** (3.14)	0.0095 (0.94)	-0.0363*** (-3.95)	0.0045** (2.30)	-0.0182*** (-3.42)	-0.0026 (-0.22)	-0.0101 (-1.31)	-0.0174*** (-3.21)
Small	0.0509*** (8.52)	0.0467*** (9.31)	0.0643*** (7.55)	0.0822*** (12.10)	0.0537*** (9.11)	0.0002 (0.05)	0.0024 (1.44)	0.0068*** (2.98)	0.1316*** (18.83)	0.0449*** (11.40)	0.0103*** (4.08)
Medium	0.1132*** (13.80)	0.0753*** (10.90)	0.1152*** (10.94)	0.1783*** (19.06)	0.0905*** (11.50)	0.0217*** (3.52)	0.0047** (2.00)	0.0094*** (3.22)	0.2221*** (23.79)	0.0827*** (13.98)	0.0082*** (2.71)
Construction	0.0159 (1.54)	-0.0267*** (-3.17)	0.0516*** (3.61)	-0.0005 (-0.05)	0.0060 (0.58)	0.0108 (1.39)	0.0025 (0.86)	0.0016 (0.42)	0.0474*** (4.02)	-0.0241*** (-3.36)	0.0093** (2.16)
Trade	-0.0005 (-0.07)	-0.0217*** (-3.15)	0.0320*** (2.79)	0.0213** (2.29)	0.0278*** (3.29)	0.0170*** (2.76)	0.0014 (0.62)	-0.0011 (-0.40)	-0.0077 (-0.86)	-0.0243*** (-4.19)	0.0018 (0.62)
Services	-0.0062 (-0.84)	-0.0274*** (-4.27)	-0.0216** (-2.03)	-0.0194** (-2.29)	-0.0577*** (-7.91)	0.0104* (1.86)	-0.0018 (-0.92)	0.0022 (0.79)	0.0142* (1.70)	-0.0368*** (-6.96)	0.0070** (2.52)
Exporters	0.0313*** (5.65)	0.0202*** (4.45)	0.0406*** (5.25)	0.0138** (2.20)	0.0270*** (5.08)	0.0079* (1.84)	0.0001 (0.08)	0.0049** (2.36)	0.0372*** (5.90)	0.0232*** (6.27)	0.0049** (2.23)
Innovators	0.0204*** (3.75)	0.0319*** (7.36)	0.0269*** (3.50)	0.0234*** (3.79)	0.0195*** (3.75)	0.0272*** (6.53)	0.0036** (2.56)	0.0060*** (2.97)	0.0098 (1.57)	0.0154*** (4.41)	0.0112*** (5.17)
Trading Distress	0.0017 (1.25)	-0.0025** (-2.18)	-0.0073*** (-3.86)	-0.0067*** (-4.38)	-0.0043*** (-3.32)	0.0022** (2.09)	-0.0004 (-1.05)	0.0008 (1.56)	-0.0040** (-2.55)	-0.0032*** (-3.60)	-0.0002 (-0.29)
Financial Distress	-0.0205*** (-11.91)	0.0056*** (3.97)	0.0227*** (9.39)	0.0036* (1.87)	-0.0007 (-0.43)	0.0081*** (6.13)	0.0015*** (3.28)	-0.0004 (-0.62)	-0.0018 (-0.90)	0.0044*** (3.97)	0.0025*** (3.63)

Continued Overleaf.

Table 53  
Continued

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Austria	0.0272*	-0.0078	0.0479**	0.0077	0.0370***	-0.0210*	-0.0009	-0.0093*	-0.0608***	-0.0046	-0.0022
	(1.78)	(-0.72)	(2.25)	(0.49)	(2.90)	(-1.70)	(-0.77)	(-1.78)	(-3.26)	(-0.67)	(-0.33)
Belgium	-0.0402***	-0.0159	0.0269	0.1097***	0.0377***	-0.0034	0.0027	-0.0040	-0.1650***	0.0088	-0.0002
	(-3.07)	(-1.44)	(1.23)	(5.70)	(2.80)	(-0.25)	(0.91)	(-0.63)	(-9.76)	(0.98)	(-0.03)
Spain	-0.0067	0.0196***	-0.0355***	0.0648***	0.1481***	-0.0233***	-0.0012*	-0.0140***	-0.1758***	0.0510***	0.0038
	(-0.81)	(2.75)	(-3.00)	(6.58)	(16.47)	(-3.22)	(-1.66)	(-4.70)	(-17.77)	(8.24)	(0.90)
Finland	0.0230	-0.0221	0.0140	0.0178	0.1218***	-0.0008	0.0012	-0.0045	-0.0620**	0.0568***	-0.0119*
	(1.08)	(-1.61)	(0.47)	(0.79)	(5.29)	(-0.04)	(0.39)	(-0.55)	(-2.39)	(3.47)	(-1.67)
France	0.0728***	0.0067	0.0072	0.1063***	0.0151**	-0.0497***	0.0141***	-0.0020	-0.0658***	0.0776***	-0.0094***
	(8.09)	(1.04)	(0.63)	(10.94)	(2.37)	(-7.93)	(5.67)	(-0.56)	(-6.29)	(12.05)	(-2.78)
Greece	-0.0493***	-0.0113	-0.2210***	-0.0252*	0.2073***	-0.0475***	0.1028***	0.0019	-0.2327***	0.0378***	-0.0171***
	(-3.97)	(-1.07)	(-14.00)	(-1.72)	(11.69)	(-4.81)	(8.12)	(0.28)	(-16.51)	(3.53)	(-3.98)
Ireland	0.1167***	-0.0070	0.1858***	-0.0260	0.3524***	-0.0132	0.0097	-0.0074	-0.1028***	0.0365**	-0.0097
	(4.32)	(-0.43)	(5.84)	(-1.22)	(11.45)	(-0.69)	(1.42)	(-0.90)	(-3.92)	(2.34)	(-1.15)
Italy	0.0404***	0.0801***	0.0855***	0.0694***	0.1170***	-0.0595***	0.0056***	-0.0200***	-0.2239***	0.0125***	-0.0217***
	(4.91)	(10.77)	(7.60)	(7.70)	(15.38)	(-10.15)	(3.60)	(-8.21)	(-25.79)	(2.87)	(-8.37)
Netherlands	-0.0601***	-0.0603***	0.0701***	-0.0552***	0.0563***	0.0116	0.0021	-0.0068	-0.1308***	0.0055	0.0078
	(-6.67)	(-11.18)	(4.23)	(-5.28)	(5.34)	(1.04)	(1.01)	(-1.49)	(-9.71)	(0.87)	(1.26)
Portugal	-0.0882***	0.0047	0.0347*	-0.0086	0.1002***	-0.0325***	0.0001	-0.0215***	-0.1851***	0.0403***	-0.0057
	(-9.67)	(0.44)	(1.78)	(-0.60)	(7.13)	(-3.10)	(0.07)	(-7.92)	(-12.68)	(4.11)	(-0.97)
Slovakia	-0.0261	-0.0507***	0.0123	-0.0683***	0.0366**	-0.0232	0.0006	0.1031***	-0.1181***	-0.0061	-0.0145**
	(-1.42)	(-5.16)	(0.44)	(-3.97)	(2.09)	(-1.43)	(0.23)	(5.37)	(-4.98)	(-0.65)	(-2.24)
Observations	21921	22033	22315	22180	22083	22096	21893	21865	22243	21956	21630

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Table 54 – Single Country Summary Family-Owned SMEs & Professional Owners

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0205*** (2.82)	0.0219*** (3.81)	0.1030*** (10.92)	0.0673*** (9.05)	0.0052 (0.71)	-0.0221*** (-3.64)	0.0012 (0.61)	-0.0068** (-2.23)	0.0189** (2.42)	0.0095** (2.00)	-0.0107*** (-3.22)
5-10 Years	0.0314** (1.96)	0.0231* (1.78)	0.0477** (2.30)	0.0308* (1.80)	-0.0057 (-0.35)	-0.0482*** (-3.45)	0.0043 (1.12)	-0.0144* (-1.71)	-0.0033 (-0.18)	0.0020 (0.16)	-0.0087 (-1.11)
>10 Years	0.0395*** (2.90)	0.0212* (1.95)	0.0504*** (2.84)	0.0394*** (2.70)	-0.0078 (-0.55)	-0.0472*** (-3.75)	0.0027 (0.87)	-0.0220*** (-2.91)	-0.0229 (-1.43)	-0.0098 (-0.90)	-0.0136** (-1.96)
Small	0.0590*** (7.71)	0.0440*** (7.19)	0.0639*** (6.26)	0.0862*** (10.70)	0.0564*** (7.58)	0.0013 (0.21)	0.0028 (1.38)	0.0129*** (4.14)	0.1456*** (17.37)	0.0491*** (10.20)	0.0079** (2.43)
Medium	0.1139*** (12.44)	0.0691*** (9.30)	0.1029*** (8.94)	0.1594*** (16.35)	0.0777*** (8.93)	0.0138** (1.99)	0.0018 (0.79)	0.0108*** (3.29)	0.2136*** (21.90)	0.0856*** (13.80)	0.0072** (2.07)
Construction	0.0106 (0.80)	-0.0359*** (-3.53)	0.0460*** (2.76)	-0.0252* (-1.86)	0.0003 (0.03)	-0.0089 (-0.91)	0.0005 (0.13)	0.0034 (0.62)	0.0528*** (3.68)	-0.0248*** (-2.65)	0.0072 (1.23)
Trade	0.0034 (0.34)	-0.0251*** (-3.09)	0.0395*** (3.07)	0.0222** (2.03)	0.0307*** (2.97)	0.0017 (0.22)	-0.0008 (-0.27)	-0.0000 (-0.01)	-0.0057 (-0.55)	-0.0276*** (-3.86)	-0.0004 (-0.10)
Services	-0.0124 (-1.38)	-0.0252*** (-3.35)	-0.0218* (-1.86)	-0.0327*** (-3.38)	-0.0699*** (-7.99)	-0.0019 (-0.28)	-0.0074*** (-2.82)	0.0016 (0.48)	0.0124 (1.30)	-0.0445*** (-6.97)	0.0012 (0.33)
Exporters	0.0212*** (2.99)	0.0280*** (4.90)	0.0458*** (5.08)	0.0121 (1.60)	0.0350*** (5.18)	0.0081 (1.52)	-0.0024 (-1.28)	0.0015 (0.54)	0.0351*** (4.61)	0.0304*** (6.23)	0.0063** (2.20)
Innovators	0.0207*** (2.99)	0.0298*** (5.48)	0.0170* (1.91)	0.0252*** (3.43)	0.0178*** (2.71)	0.0270*** (5.21)	0.0020 (1.14)	0.0080*** (2.99)	0.0127* (1.68)	0.0090* (1.96)	0.0102*** (3.70)
Trading Distress	0.0039** (2.25)	-0.0032** (-2.31)	-0.0019 (-0.87)	-0.0079*** (-4.28)	-0.0057*** (-3.42)	0.0005 (0.40)	-0.0001 (-0.20)	-0.0002 (-0.29)	-0.0033* (-1.75)	-0.0040*** (-3.47)	-0.0005 (-0.65)
Financial Distress	-0.0291*** (-13.26)	0.0068*** (3.91)	0.0201*** (7.10)	0.0060** (2.57)	0.0006 (0.31)	0.0100*** (5.99)	0.0005 (0.93)	-0.0009 (-0.98)	-0.0003 (-0.11)	0.0061*** (4.17)	0.0033*** (3.62)

Continued Overleaf.

Table 54  
Continued

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Austria	0.0242	-0.0067	0.0422	0.0089	0.0481***	-0.0072	-0.0014	-0.0080	-0.0574**	0.0041	0.0010
	(1.16)	(-0.45)	(1.56)	(0.43)	(2.75)	(-0.40)	(-0.70)	(-0.88)	(-2.30)	(0.42)	(0.10)
Belgium	-0.0416**	-0.0139	0.0401	0.0832***	0.0536***	-0.0164	0.0048	-0.0240***	-0.1539***	0.0204*	-0.0121
	(-2.47)	(-1.01)	(1.62)	(3.85)	(3.22)	(-1.02)	(1.09)	(-3.83)	(-7.22)	(1.81)	(-1.57)
Spain	-0.0046	0.0158*	-0.0198	0.0666***	0.1738***	-0.0224**	-0.0020*	-0.0214***	-0.2016***	0.0713***	0.0010
	(-0.43)	(1.85)	(-1.45)	(5.83)	(16.35)	(-2.45)	(-1.85)	(-4.87)	(-16.64)	(9.50)	(0.18)
Finland	0.0118	-0.0220	0.1047***	-0.0020	0.0895***	-0.0074	0.0051	-0.0204**	-0.0275	0.0679***	-0.0164*
	(0.46)	(-1.28)	(3.02)	(-0.08)	(3.56)	(-0.34)	(0.87)	(-2.33)	(-0.86)	(3.48)	(-1.82)
France	0.0477***	0.0095	0.0243*	0.1097***	0.0097	-0.0597***	0.0129***	-0.0144***	-0.1037***	0.0986***	-0.0133***
	(4.27)	(1.13)	(1.75)	(9.21)	(1.22)	(-7.36)	(4.31)	(-3.07)	(-8.01)	(12.15)	(-2.91)
Greece	-0.0694***	-0.0108	-0.1969***	-0.0248	0.1940***	-0.0556***	0.1003***	0.0033	-0.2508***	0.0524***	-0.0218***
	(-4.52)	(-0.83)	(-11.03)	(-1.46)	(9.71)	(-4.54)	(7.16)	(0.33)	(-14.11)	(3.91)	(-3.75)
Ireland	0.1188***	-0.0144	0.2083***	-0.0484**	0.3810***	-0.0161	0.0093	-0.0149	-0.1139***	0.0526***	-0.0139
	(3.62)	(-0.73)	(5.63)	(-2.03)	(10.56)	(-0.68)	(1.12)	(-1.36)	(-3.55)	(2.62)	(-1.29)
Italy	0.0452***	0.0754***	0.1228***	0.0684***	0.1331***	-0.0640***	0.0042**	-0.0301***	-0.2575***	0.0246***	-0.0256***
	(4.38)	(8.55)	(9.41)	(6.48)	(14.67)	(-8.39)	(2.30)	(-8.07)	(-23.77)	(4.54)	(-6.80)
Netherlands	-0.0588***	-0.0728***	0.1019***	-0.0558***	0.0813***	0.0123	0.0005	-0.0148**	-0.0995***	0.0122	0.0009
	(-4.55)	(-10.54)	(4.99)	(-4.17)	(5.68)	(0.87)	(0.21)	(-2.39)	(-5.44)	(1.47)	(0.11)
Portugal	-0.1031***	-0.0024	0.0791***	-0.0026	0.1307***	-0.0348***	0.0006	-0.0346***	-0.1972***	0.0640***	-0.0085
	(-8.58)	(-0.19)	(3.68)	(-0.16)	(7.80)	(-2.71)	(0.24)	(-9.12)	(-11.18)	(5.26)	(-1.16)
Slovakia	-0.0200	-0.0635***	0.0736**	-0.0637***	0.0302	-0.0413**	0.0010	0.0687***	-0.1288***	0.0020	-0.0187**
	(-0.75)	(-5.06)	(1.99)	(-2.71)	(1.32)	(-1.99)	(0.23)	(3.01)	(-3.98)	(0.15)	(-2.02)
Observations	16692	16774	16978	16903	16846	16802	16655	16631	16924	16705	16428

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## **4.8 Robustness Testing RQ1**

This section presents the rationale and detail of the various robustness tests conducted for research question one (Table 55 overleaf). A series of robustness tests are a prerequisite of this study for a number of reasons, primarily to check or increase the validity of the results, and secondly, the sample is very large as are the number of proxies employed for each variable. In order to check the reliability of the probit regressions alternative variables and methodology form part of the robustness checks.

These include, firstly replacement of the three macroeconomic controls (corporate tax rate, inflation rate and GDP growth rate) with the components of the institutional environment to test the likelihood of family firms using the various sources of finance sources compared to sole owners and professionally managed firms. Then, secondly, the three macroeconomic variables are replaced with non-PIIGS sample followed by a PIIGS sample, to conduct tests of family-owned SMEs in contrast to solely owned firms and separately to professionally owned SMEs. The third check substitutes the macroeconomic controls with single country dummies in order to complete the same ownership comparisons. The fourth test sees OLS being used in place of probit regression to analyse firm ownerships and the variables employed to test the likelihood of family-owned SMEs using the range of sources in contrast to sole owners and professionally managed firms. OLS is regularly employed as an econometrics tool in SME finance (Ennew & Binks, 1995; Chittenden et al, 1996; Hall et al, 2004; Mac an Bhaird & Lucey, 2010; Lappalainen & Niskanen, 2013), and may be conspicuous in its absence if ignored. However, as a type of linear probability method (LPM) it is not strictly ideal for tests of a binary outcome. While this method offers rather similar results to probit or logit, it does have the additional issue of creating predictions outside of the range of 0 to 1, and may not provide the most suitable estimates (Wooldridge, 2010).

In the fifth robustness test, due to the low level of responses to the innovator question, this variable is removed, and the tests are repeated in the same way as displayed earlier for research question one. The following check uses the six different survey waves to check for likely variances in usage over time comparing the three ownership groups. The seventh test is a comparison between family-owned SMEs and all other firms (sole owners and professionally managed firms combined). Finally, the last test concentrates on mature firms (those over 10 years of age). These robustness tests are summarised in Table 55 overleaf.

Table 55 – RQ1 Robustness Testing

<b>Appendix</b>	<b>Test</b>	<b>Sample</b>	<b>Changes</b>
<b>A</b>	Institutional Setting	Family-owned SMEs Solely owned SMEs	Replacement of corporate tax rate, inflation rate and GDP growth rate with 7 elements of institutional environment.
<b>B</b>	Institutional Setting	Family-owned SMEs Professionally managed SMEs	Replacement of corporate tax rate, inflation rate and GDP growth rate with 7 elements of institutional environment.
<b>C</b>	PIIGS Subsample	Family-owned SMEs Solely owned SMEs	Replacement of corporate tax rate, inflation rate & GDP growth rate with PIIGs sample
<b>D</b>	PIIGS Subsample	Family-owned SMEs Professionally managed SMEs	Replacement of corporate tax rate, inflation rate & GDP growth rate with PIIGs sample
<b>E</b>	Non-PIIGS Subsample	Family-owned SMEs Solely owned SMEs	Replacement of corporate tax rate, inflation rate and GDP growth rate with non-PIIGs sample
<b>F</b>	Non-PIIGS Subsample	Family-owned SMEs Professionally managed SMEs	Replacement of corporate tax rate, inflation rate and GDP growth rate with non-PIIGs sample
<b>G</b>	PIIGS Dummy	Family-owned SMEs Solely owned SMEs and Family-owned SMEs Professionally managed SMEs	Replacement of corporate tax rate, inflation rate and GDP growth rate with PIIGs sample
<b>H</b>	Ordinary Least Squares	Family-owned SMEs Solely owned SMEs and Family-owned SMEs Prof. managed SMEs	Use of OLS instead of probit regression
<b>I</b>	Innovation Dummy	Family-owned SMEs Solely owned SMEs and Family-owned SMEs Prof. managed SMEs	Exclusion of the innovation variable
<b>J</b>	Wave Dummy	Family-owned SMEs Solely owned SMEs and Family-owned SMEs Prof. managed SMEs	Wave dummies introduced
<b>K</b>	Mature Firms Subsample	Family-owned SMEs Solely owned SMEs and Family-owned SMEs Professionally managed SMEs	Subsample of the oldest age category of firms (10+ years)

The results of each of these eleven robustness tests are provided in (appendices A to K). Consensus exists as to the importance of the institutional setting in which small firms are based (Beck et al., 2005; Masiak et al., 2017). A pan-European study necessitates consideration of the implications of differing institutional settings across nations (Hall et al., 2004; Beck et al., 2008b; Canton et al., 2013; Jõeveer, 2013; Holton et al., 2014; Mc Namara et al., 2017). The institutional setting of a country affects operations and the availability of finance for SME firms (Hernández-Cánovas & Koëter-Kant, 2010). The institutional environment has been found to be important in family firm research (Ampenberger et al., 2013) as such firms are more reliant on bank finance, particularly family-owned SMEs. Schmid (2013) recommends that the institutional environment should not be ignored in studies of family firm finance due to the level of creditor monitoring. The first robustness test replaces the macroeconomic indicators employed earlier to analyse research question one in Tables 29 to 50 (corporate tax rate, GDP growth rate, and inflation rate) with proxies for the lending infrastructure deemed to capture the institutional environment. First developed by Berger & Udell (2006) the components of the lending infrastructure include information environment, legal environment, judicial environment, bankruptcy environment, social environment, tax environment, and the regulatory environment. Using a series of proxies for this infrastructure, Mc Namara et al., (2017) empirically assessed its impact on European SME firm leverage and found a number of components proved influential determinants of SME leverage. Similar proxies to those used by Mc Namara et al. (2017) have been used here in place of the macroeconomic variables, and details of each proxy and source are set out in Table 56 below. The results are tabulated in Appendix A (family-owned SMEs versus solely owned SMEs) and in appendix B (family-owned SMEs versus professionally managed SMEs).

*Table 56 – The Lending Infrastructure Variables*

<b>Institutional environment:</b>	<b>Proxy:</b>	<b>Source:</b>
Information environment	Credit Depth of Information Index	(World Bank, 2019)
Legal environment	Legal Right Index	(World Bank, 2019)
Judicial environment	Cost to Enforce Contracts	(World Bank, 2019)
Bankruptcy environment	Rate of Insolvency Resolution	(World Bank, 2019)
Social environment	Trust in General Population	(Edelman, 2020)
Tax environment	Corporate Tax Rate	(KPMG, 2020)
Regulatory environment	Capital Regulatory Index	(Barth, et al., 2013)

The results of the first test are broadly similar to those illustrated earlier for family-owned SMEs compared to solely owned firms for the likely use of retained earnings, bank loans, trade credit, debt securities and other sources. The family ownership coefficient and statistical significance is lower in this test for grants and subsidised bank loans, whilst bank credit lines, leasing and hire purchase and factoring change to an insignificant relationship compared to the earlier results of the probit regressions. On the other hand, family-owned firms appear more likely to use other loans and equity capital in contrast to sole owners than that shown earlier (Appendix A).

The results of the institutional environment tests for family-owned SMEs in contrast to professionally managed firms (Appendix B) are also quite similar with a few exceptions. The magnitude of likelihood of a family-owned firm using trade credit reduces and becomes statistically insignificant whilst both the magnitude and statistical significance increase for leasing and hire purchase. In summary, whilst there are some differences in the results reported

earlier, these differences are not considered to meaningfully change the overall findings as illustrated.

The second robustness test, comprises of 5 checks (Appendices C – G), is based around the sample which consists of firms from across twelve European countries. Family-owned firms are more prominent in some countries than in others.

In particular they are more prevalent in much of Southern Europe and in the so-called ‘PIIGS’ or the distressed nations of the sovereign debt crisis which include Portugal, Italy, Ireland, Greece and Spain. (Demographic table 23 earlier illustrates how family-owned SMEs represent circa 57 per cent (total sample 25,939) of the PIIGS countries compared to a representation of circa 37 percent (total sample 32,407) for the same cohort in the non-PIIGS nations). The non-PIIGS/non-distressed sample includes Austria, Belgium, Germany, France, Finland, Netherlands, and Slovakia, representing the remaining countries in the overall sample. Tables 29 to 50 are replicated using both of these subsamples with the results for the PIIGS illustrated in appendices C and D and the results for the non-PIIGS outlined in appendices E and F. This involves a direct comparison of the preferences of more family based and weaker countries and less family based and economically stronger countries. A dummy variable representing the distressed economies is given a value of 1 if the firm operates in the PIIGS group and a value of 0 for firms in the other countries in the sample. These replace the macroeconomic variables used in Tables 29 to 50 namely, corporate tax rate, GDP growth rate, and the inflation rate experienced by each country.

In the PIIGS subsample there is a decrease in the family ownership coefficients, notably, for grants and subsidised bank loans, bank credit lines and loans, and leasing usage when family-owned SMEs are contrasted with sole owner firms (Appendix C). In comparison, when comparing family firms with professionally managed firms the results display minor decreases

in the magnitude and statistical significance for retained earnings and trade credit whilst the magnitude increases for other loans and for leasing and hire-purchase (Appendix D).

The results of the non-PIIGS subsample show how family firms are no more likely to use grants & subsidised bank loans, credit lines, factoring, leasing and hire-purchase than sole owners (Appendix E). Family-owned firms are found much more likely to use bank loans, other loans, and equity capital than solely owned SMEs in the non-PIIGS countries (when compared to the probit regressions). The findings for family firms in contrast to professional owners for the non-PIIGS subsample (Appendix F) are broadly similar to those reported earlier in Tables 29 to 50. Minor differences are noted for the use of retained earnings, trade credit, other loans, equity capital, and leasing and hire-purchase.

As an alternative test under this category, the entire sample is tested with a dummy variable equals to 1 if the firm is operating in Greece, Ireland, Italy, Portugal, and Spain, otherwise equal to 0. The results including this ‘distressed country’ dummy is displayed in appendix G and show little variation on those reported earlier in Tables 29 to 50.

The third robustness test relates to the methodology with an alternative analysis conducted using a weighted ordinary least squares (OLS) regression in place of the probit regression. A dichotomous variable probit or logit analysis is expected to give a more efficient though not dissimilar result (Noreen, 1988). The results illustrated in appendix H are very similar to the empirical results of the probit methodology as presented earlier in Tables 29 to 50.

The fourth robustness test relates to the sample. More specifically, several firm level determinants are used in Tables 29 to 50, including a proxy for innovation. Respondents are asked if they have launched a new or significantly improved product or service to the market in the previous year. Approximately 35% of all firms in the sample can be classed as innovative (Tables 20 - 23), with family-owned SMEs and professionally managed firms marginally higher at 36% respectively, whereas sole owner innovation is 33%. However, as this question

is not asked of each firm, which results in the sample falling by circa 46% when the innovator dummy is introduced in Tables 29 - 50 earlier. Given this limitation the results are reported with the omission of the innovator variable and these can be seen in appendix I. By and large, there is little, or no change found between the earlier samples (Tables 29 – 50) and in this test with the omission of the innovation variable.

The next check (appendix J) analyses firm ownership and the variables employed earlier across the wave periods of the final sample which include the innovation responses. These are waves 11, 13 and 15. Wave 11 is set as the base. No differences are found in these checks in contrast to those conducted earlier in Tables 29 to 50.

The final robustness check relates to mature SMEs (10 years and over) as presented in appendix K. Once, again the results are very similar to the probit tests displayed earlier in Tables 29 to 50.

In summary, the results of the various robustness tests, illustrated in Appendices A –K present no material differences to those outlined for research question one in Tables 29 to 50.

The next section outlines a summary of the findings for research question one.

## **4.9 Summary Research Question 1**

Family-owned SMEs were shown to use a variety of sources of finance, some internal and some external sources. There are some differences compared to solely owned SMEs. More specifically, family-owned firms appeared more likely to have used grants and subsidised bank loans, as well as bank credit lines and loans, and especially retained earnings and trade credit compared to sole owners. The marginal effects were greater for each of these five sources when the only variable considered in the probit regression is the family ownership dummy. Notably, firm size and in general firm innovation reduced the family ownership coefficients whilst the statistical significance was constant at the one per cent level except for bank credit lines. The statistical significance of bank credit lines dropped to five per cent with the introduction of the exporter variable but returned to one per cent when controlling for the macroeconomic conditions. Moreover, there was some evidence to suggest that family firms were more likely to use factoring, other loans and debt securities in contrast to solely owned SMEs. However, the marginal effects were small, and the statistical significance was not constant throughout. Family-owned SMEs were found less likely to have used leasing and hire purchase in comparison to solely owned firms. Finally, there was no evidence to suggest that family-owned SMEs differed to sole owners in terms of using either equity capital or other sources.

Compared to professionally managed SMEs, family-owned firms were statistically more likely to use a number of different sources of finance. Differences emerged in terms of the following: retained earnings, grants and subsidised bank loans, bank credit lines/loans, other loans, equity capital and other sources. In particular, family-owned SMEs appeared much more likely to use bank credit lines, bank loans as well as grants and subsidised bank loans compared to professionally owned SMEs, the ownership coefficients were consistent whilst the statistical significance was at the one per cent level throughout. In addition, there was some evidence to suggest that family-owned SMEs were generally more likely to rely on retained earnings when

compared to professional owners, albeit the statistical significance at the one per cent level did not hold in all models. In contrast family firms appeared less likely, and significantly so, to use other loans and other sources in contrast to professionally managed firms. Family-owned firms were seen somewhat less likely to use equity capital compared to professionally owned SMEs, whilst statistically significant the strength of this significance did not always hold at the one per cent level. Lastly, firm ownership did not appear to influence the likelihood of an SME using trade credit, leasing and hire purchase, debt securities or factoring.

A comparison of family-owned SMEs versus solely owned firms and family firms versus professionally managed SMEs revealed some similarities. Notably, family-owned firms' use of retained earnings was evident compared to sole owners and this held also when family firms were compared to professionally owned SMEs. The family ownership coefficients of this likelihood was constant and significant at the one per cent level in contrast to solely owned SMEs, whilst versus professional owners the coefficients were lower and the significance at the one per cent level did not hold in all models. Family-owned SMEs appeared more likely to use grants and subsidised bank loans especially compared to sole owners and more than professionally owned firms, statistically so at the one per cent level in contrast to both ownership types. Moreover, family firms were more likely to use bank credit lines and bank loans and statistically so in contrast to both other ownership types but especially compared to professional owned SMEs. Some differences existed, notably, family firms were more likely to use trade credit compared to solely owned SMEs and statistically so at the one per cent level, whilst in contrast to professionally managed firms the evidence was much weaker and the statistical significance was not found in all models. In terms of other loans and other sources it appeared that family firms were less likely to use these sources more than professional owners and statistically so, yet this evidence was not apparent when comparing family-owned SMEs with solely owned firms. Family-owned firms appeared somewhat more likely to use factoring

in contrast to sole owners but not so compared to professionally managed firms. Moreover, there was some evidence that family-owned firms had a somewhat greater likelihood of using leasing and hire purchase than professional owners although family owners were found somewhat less likely to favour this source versus sole owner SMEs. Finally, firm ownership did not appear to explain the likely usage of equity capital by family firms in contrast to sole owners yet there was some support that family-owned SMEs used less of this source than professionally managed firms.

To summarise, family-owned SMEs were shown to be more likely to use a range of sources unlike both of the other two ownership types. In particular, family-owned firms used retained earnings, grants and subsidised bank loans, bank credit lines and bank loans compared to all other SMEs. While the statistical evidence was not as strong, there was some evidence that family-owned SMEs were also more likely to use trade credit and factoring compared to sole owners although not so versus professionally managed firms. On the other hand, family owners were somewhat less likely to use other loans, equity capital and other sources in contrast professionally managed SMEs. Firm ownership did not appear to explain the likelihood of an SME using debt securities.

More mature SMEs, especially those over 10 years of age, were shown to be more likely to use retained earnings, bank credit lines and bank loans and statistically so at the one per cent level than younger firms. On the other hand, it appeared that the youngest firms (0 – 5 years) were more likely to favour other loans and equity capital, and to a lesser extent other sources than their older cohort. Firm age did not appear to matter in the likelihood of an SME using grants and subsidised bank loans, trade credit, leasing and hire purchase, factoring and debt securities.

Retained earnings, grants and subsidised bank loans, bank credit lines, bank loans, trade credit, leasing and hire purchase and factoring were more popular with small and medium sized firms

compared to micro firms and statistically so at the one per cent level. Moreover, the results illustrated how medium sized firms were much more likely to use these, especially retained earnings, bank loans and leasing and hire purchase than small and especially so micro firms. Medium sized firms also seemed to use other loans and equity capital more than micro firms, although the marginal effects were small. The assertion is that micro firms appeared to have limited options using far fewer sources in contrast to their small and medium sized counterparts.

Firms' sector was found to influence the likelihood of using financing sources. Notably, grants and subsidised bank loans were more popular with industrial SMEs than other sectors. Moreover, bank credit lines and loans, and trade credit were more likely to be used by industrial firms and statistically so in contrast to services SMEs. Construction sector firms used fewer sources and appeared to rely more on leasing and hire purchase compared to industrial SMEs. Firms in the trade sector also used significantly fewer sources, yet there was some evidence that this cohort used more trade credit than other sectors. As expected, due to their lack of tangible assets, services sector SMEs also relied on fewer financing sources. This cohort also appeared to use leasing and hire purchase more than industrial firms.

Exporters and innovators were found to have a greater tendency to use a wider range of sources in contrast to their non-exporting and non-innovative counterparts. SMEs who exported were more likely to rely on grants and subsidised bank loans, bank credit lines, trade credit, leasing and hire purchase and factoring than non-exporters and statistically so at the one per cent level. There was some evidence too that retained earnings and other sources were more popular with exporters than non-exporting SMEs. Firms deemed as innovators were found to be more likely to use retained earnings, grants and subsidised bank loans, bank credit lines and loans, trade credit, other loans and other sources at the one per cent significance level, albeit the marginal

effects for other sources were small. Moreover, there was partial evidence found that this cohort also favoured equity capital and factoring more than non-innovative SMEs.

There was some evidence also that firms experiencing trading distress were less likely to use bank loans, trade credit, leasing and hire purchase, albeit the marginal effects are small. Firms experiencing financial distress used a number of sources including grants and subsidised bank loans, bank loans, other loans, factoring, other sources and especially bank credit lines and the statistical significance was at the one per cent level. These same firms did not appear to use retained earnings or leasing and hire purchase compared to their unstressed peers.

In general, more favourable macroeconomic conditions increased the likelihood of a firm using a range of sources, especially retained earnings, grants and subsidised bank loans and bank loans. The assertion is that the sources of finance used by SMEs was driven more by firm level factors than macroeconomic conditions.

In summary, family-owned SMEs used a more traditional range of sources in contrast to all other SMEs. Firm age and especially firm size proved important determinants of the likelihood of an SME using financing sources. Moreover, industrial firms and those who export or innovate also used multiple sources to finance their business. A greater range of sources were much more popular with financially distressed SMEs than those experiencing trading distress. Whilst the macroeconomic environment influenced the likelihood of an SME using some finance sources, the evidence suggested that firm level determinants matter more. Figure 3 overleaf offers a summary of the main findings.

Figure 3 - RQ1 Summary

	Family-owned SMEs versus Solely Owned SMEs		Family-owned SMEs versus Professionally managed SMEs		Family-owned SMEs versus all Other SMEs <sup>39</sup>
Probability of using:	Model 1	Model 9	Model 1	Model 9	Model 9
Retained Earnings	0.0629***	0.0416***	-0.0055	0.0192**	0.0355***
Grants & Subsidised Loans	0.0368***	0.0174***	0.0186***	0.0259***	0.0206***
Bank Credit Lines	0.0337***	0.0217***	0.0838***	0.101***	0.0465***
Bank Loans	0.0534***	0.0182***	0.0389***	0.0641***	0.0331***
Trade Credit	0.0659***	0.0355***	0.0078	0.0121*	0.0286***
Other Loans	0.0136***	0.0061	-0.0269***	-0.0206***	-0.0017
Debt Securities	0.0026**	0.0014	0.0019	0.0015	0.0016
Equity Capital	0.0025**	0.0025	-0.0148***	-0.0073**	-0.0006
Leasing & Hire Purchase	0.0220***	-0.0144**	-0.0369***	0.0140*	-0.0050
Factoring	0.0205***	0.0064*	-0.0169***	0.0041	0.0060*
Other Sources	0.0008	-0.0000	-0.0078***	-0.0103***	-0.0030

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

<sup>39</sup> Extract from Chapter 4, section 4.5

## **Chapter Five: Findings - Research Question 2**

### **5.1 Introduction**

This Chapter presents the empirical results for research question two which seeks to test for evidence of credit constraint in access to finance for European family-owned SMEs compared to other SMEs. Credit constraint is assessed in terms of bank finance (bank credit lines and bank loans), trade credit and other sources of finance. These are chosen based firstly on the reliance of SMEs on bank credit. Secondly, trade credit is also found to be an important source of shorter-term finance for these firms and finally, other sources encompasses both debt and equity finance<sup>40</sup>.

These results are reported using seven models. Model 1 includes the applications for credit type; model 2 captures the likelihood of needing credit; model 3 captures discouragement from applying for credit; model 4 shows results for the successful receipt of full credit sought; model 5 captures strong rationing (firms fully rejected for credit); model 6 shows weak rationing (firms approved for some of the credit sought) and model 7 displays self-rationing where an SME rejects the amount of credit granted for cost reasons.

The Chapter is organised as follows. Firstly, Section 5.2 presents the results of the four credit types for family-owned SMEs in contrast to sole owner SMEs. The results are illustrated in the order of bank credit lines followed by bank loans, then trade credit and lastly, all other sources of finance. This is then followed by documentation of the results, in the same order, for family-owned SMEs compared to professionally owned SMEs in Section 5.3. Secondly, a summation

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<sup>40</sup> Other Sources of finance for RQ2 include other loans, leasing and hire purchase, factoring, grants, subordinated debt, participating loans, peer to peer lending, crowdfunding, equity capital and debt securities (SAFE questionnaire, ECB, 2014).

of both these preceding two sections is then presented. Finally, just as under research question one robustness testing is conducted and outlined. The discussion then follows in Chapter 6.

## **5.2 Family-owned SMEs V Solely owned SMEs**

### **5.2.1 Applications and Outcomes for Bank Credit Lines**

Table 57 overleaf presents the results of the likelihood of applications and outcomes of bank credit lines for a family-owned SME in contrast to solely owned SMEs. Family-owned firms appear 3.5 per cent more likely to apply for short term bank credit lines compared to sole owners (model 1) and significantly so at the one per cent level. In terms of firm characteristics, firm size is found to influence the likelihood of an application in that small firms are 3.8 per cent and medium firms 6.9 per cent more likely to apply for bank credit lines compared to micro firms. In addition, export-oriented SMEs are somewhat more likely to have made a recent application for a bank credit line and especially innovators who are 6.5 per cent more likely to apply than their non-innovative counterparts. Financial distress increases the likelihood of a firm making a bank credit line application by 3.5 per cent. More favourable macro-economic conditions in terms of higher GDP growth appear to increase the likelihood of a firm applying for short-term bank credit lines.

Model 2 illustrates how family firms are 3.2 per cent more likely to need bank credit lines in contrast to sole owners. Firm age notably those firms in the 5-10-year category appear 5.9 per cent more likelihood to require short-term credit lines compared with the youngest cohort. Innovators are again more likely to need bank credit lines and significantly so. Trading and financial distress appears to increase the likelihood of a firm needing bank credit lines, albeit the magnitude is small in the case of trading distress.

Model 3 depicts the results for firm discouragement for bank credit lines. Firm ownership does not appear to influence the likelihood of discouragement. Instead firm size is shown to matter

as small (4.6 per cent) and medium firms (9.1 per cent) are less likely to be discouraged from applying for bank credit lines in contrast to micro firms. Trading distress and more especially financial distress increase the likelihood of a firm being discouraged from applying for short-term bank credit lines. More favourable macroeconomic conditions reduce the likelihood of being a discouraged borrower.

The results in Model 4 outline the likelihood of an SME receiving the full amount of credit lines sought from a bank. The sample size for this model and all subsequent models has reduced to 3,846 from 12,688 in models 1 to 3. Family-owned SMEs are more likely to receive all funds sought from a bank in contrast to sole owner SMEs, albeit the statistical significance is at the ten per cent confidence level. In terms of the control variables firm age and firm size are important. Notably, older firms (over 10 years) are 12.4 per cent whilst medium sized SMEs are 8.9% more likely to receive all bank credit lines monies requested, and significantly so. Innovators are 5.5 per cent less likely to be approved for the full credit line amount as are financially distressed firms at 5.0 per cent.

The likelihood of a firm being strongly rationed for bank credit lines is shown in Model 5. Strong rationing means that a firm's application for bank credit is rejected outright. Firm ownership and most of the control variables depict insignificant results of likely strong rationing. There is some evidence that SMEs over ten years of age are less likely to be strongly rationed. Medium-sized firms are 5.2 per cent less likely to be strongly rationed by a bank for short-term finance in contrast with smaller firms and significantly so. Unsurprisingly, financial distress increases the likelihood of strong rationing for bank credit lines. Macro-economic conditions do not appear to influence strong rationing.

Table 57 – Bank Credit Lines – Family-owned SMEs v solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full Model 4	Strong Rationed Model 5	Weak Rationed Model 6	Self Rationed Model 7
	Model 1	Model 2	Model 3				
Family Firms	0.0347*** (3.71)	-0.0322*** (-3.41)	-0.0019 (-0.21)	0.0296* (1.79)	-0.0063 (-0.61)	-0.0246* (-1.67)	0.0011 (0.19)
5-10 Years	0.0399* (1.76)	-0.0594*** (-2.65)	0.0198 (0.94)	0.1110*** (2.73)	-0.0351 (-1.25)	-0.0513 (-1.44)	-0.0207 (-1.29)
>10 Years	-0.0134 (-0.69)	-0.0104 (-0.53)	0.0219 (1.21)	0.1243*** (3.41)	-0.0566** (-2.24)	-0.0430 (-1.34)	-0.0209 (-1.41)
Small	0.0383*** (3.54)	0.0076 (0.69)	-0.0456*** (-4.30)	0.0101 (0.52)	-0.0131 (-1.05)	0.0009 (0.05)	0.0035 (0.49)
Medium	0.0693*** (5.24)	0.0199 (1.53)	-0.0907*** (-7.39)	0.0889*** (4.06)	-0.0524*** (-4.11)	-0.0310 (-1.61)	-0.0114 (-1.63)
Construction	0.0073 (0.40)	-0.0177 (-0.99)	0.0115 (0.66)	-0.0271 (-0.87)	0.0143 (0.67)	0.0056 (0.21)	0.0054 (0.48)
Trade	-0.0119 (-0.81)	0.0223 (1.52)	-0.0104 (-0.74)	0.0016 (0.06)	-0.0008 (-0.05)	-0.0017 (-0.08)	0.0007 (0.08)
Services	-0.0379*** (-2.73)	0.0164 (1.18)	0.0211 (1.56)	0.0292 (1.23)	-0.0297* (-1.90)	-0.0014 (-0.07)	0.0018 (0.21)
Exporters	0.0241** (2.40)	-0.0092 (-0.91)	-0.0159 (-1.64)	-0.0260 (-1.49)	-0.0044 (-0.40)	0.0441*** (2.89)	-0.0157** (-2.38)
Innovators	0.0652*** (6.72)	-0.0673*** (-6.80)	0.0003 (0.03)	-0.0545*** (-3.27)	0.0039 (0.37)	0.0426*** (2.92)	0.0067 (1.12)
Trading Distress	-0.0010 (-0.40)	-0.0075*** (-3.09)	0.0079*** (3.39)	-0.0070* (-1.70)	0.0024 (0.90)	0.0025 (0.70)	0.0015 (0.98)
Financial Distress	0.0350*** (12.26)	-0.0573*** (-20.12)	0.0208*** (7.44)	-0.0498*** (-10.68)	0.0176*** (5.65)	0.0272*** (6.45)	0.0052*** (2.93)
Corp Tax Rate	0.0113*** (8.27)	-0.0042*** (-3.23)	-0.0063*** (-4.95)	0.0031 (1.23)	-0.0010 (-0.61)	-0.0010 (-0.42)	-0.0016* (-1.77)
Inflation Rate	-0.0523*** (-4.92)	0.0983*** (9.21)	-0.0463*** (-4.52)	0.0310 (1.64)	0.0080 (0.68)	-0.0400** (-2.40)	0.0017 (0.25)
GDP Growth Rate	0.0057** (2.11)	0.0038 (1.47)	-0.0090*** (-3.47)	0.0165** (2.50)	-0.0057 (-1.33)	-0.0092 (-1.54)	-0.0028 (-0.96)
Observations	12688	12688	12688	3846	3846	3846	3846

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Model 6 illustrates the likelihood of a firm being weak rationed by a bank which means part of the credit applied for has been granted. Family firms are somewhat less likely to experience weak bank rationing in contrast to solely owned SMEs although the significance is at the ten per cent level. Similar to the results for strong rationing (model 5) most of the control variables are insignificant predictors of the likelihood of weak rationing for bank credit lines. Exporters and innovative firms are 4.4 per cent and 4.3 per cent respectively more likely to experience weak rationing and significantly so. Just as in the case of strong rationing financially distressed firms have a 2.7 per cent greater likelihood of weak rationing for bank credit lines

Finally, model 7 depicts the likelihood of a firm deciding to self-ration for bank credit lines primarily for cost reasons. Exporters are shown to be less likely to self-ration whilst financially distressed firms, albeit they are more likely to need bank credit lines (model 2), are found more likely to self-ration yet the magnitude of the likelihood is small.

In sum, family-owned SMEs appear more likely to apply for and to need short-term bank credit lines in contrast to sole-owners. Indeed, family firms are also more likely to receive all the credit sought. There is little evidence of family owners being discouraged or being rationed in any form compared with sole owners. In terms of the control variables firm size, firm innovation and financial distress appear to impact the likelihood of an SME applying (models 1 – 3) and the outcomes (models 4 – 7). Micro firms are shown less likely to apply for or receive the full amount of a bank credit line sought, whilst the same cohort are also more likely to be discouraged and rationed. Older and medium sized firms fare better as they are shown to have the greatest likelihood of full bank approval. Innovators who appear to have the biggest appetite for credit albeit they are much more likely not to be granted everything whilst there is some evidence of some weak rationing by a bank. Financially distressed firms fare worse, as this cohort appears to need credit with evidence of some discouragement and rationing in all forms. More favourable macroeconomic conditions are shown to influence the likelihood of applying for and receiving the full amount of credit sought.

### **5.2.2 Applications and Outcomes for Bank Loans**

Table 58 overleaf reports the results for bank loans in a similar format to Table 57 earlier for bank credit lines. Just as for bank credit lines, family-owned SMEs are shown more likely to apply for bank loans (2.6 per cent) and significantly so in contrast to their sole owner counterparts (model 1). In terms of the control variables, in a similar way to bank credit lines, medium sized firms and small firms are more likely to apply for bank loans compared to micro firms, the magnitude is more pronounced at 16.6 per cent for medium sized firms and both are statistically significant at the one per cent level. Exporters and firms classed as innovators are also more likely to have made recent bank loan applications, the marginal effects are greater for innovative firms at 5.5 per cent versus 2.3 per cent for exporters. Trading distress reduces the likelihood of an application whereas financial distress increases the likelihood of a firm applying for a bank loan. Just as with bank credit lines, a more favourable macroeconomic environment boosts the likelihood of a firm applying for a bank loan.

Model 2 illustrates the need for a bank loan and shows how family-owned firms are more likely to need such finance, albeit the statistical significance is at the five per cent level. SMEs aged 5-10 years are 5.4 per cent more likely to need a bank loan as do larger firms. Noticeably, as for bank credit lines, innovators are more likely to need bank loans in a similar way to their need for short-term credit lines (in this case the likelihood is 5.8 per cent). Both trading and financial distress especially increase the likelihood of a borrower requiring a bank loan, yet the marginal effect (4.9 per cent) is greater for financially distressed firms. The macroeconomic environment again positively influences the likelihood of a firm's needs for a bank loan.

The findings in model 3 provides no evidence of a family-owned business being discouraged from applying for a bank loan. SMEs aged 5 - 10 years old appear somewhat more likely to be discouraged. Unsurprisingly, medium-sized firms are 13.5 per cent and small firms are 7.2 per cent less likely to be discouraged and statistically so at the one per cent level compared to micro

firms. Exporters are deemed less likely to experience borrower discouragement. Both trading and particularly financial distress increases the likelihood of firms being discouraged from applying for a bank loan. A more favourable macroeconomic environment appears to reduce the likelihood of discouragement.

There is some evidence in model 4 to show how family firms are more likely to receive their application in full in contrast to sole owners, yet these results are statistically insignificant. Once again, the sample size reduces significantly, in this case to 4,012 versus 14,734 in the previous three models. As expected, older firms and notably, medium sized SMEs are more likely to receive all of the credit sought. The opposite is shown in respect of innovators who are less likely to receive full bank support. There is some evidence to show how firms experiencing trading distress are less likely to get the full allocation sought. Financially distressed firms, in a similar way to bank credit lines earlier, are 4.2 per cent less likely to be granted the full bank loan sought and statistically so at the one per cent level. The macroeconomic conditions are associated with a firm's likelihood of being approved for the full amount of a bank loan sought.

Firm ownership does not appear to impact the likelihood of a family firm being strongly rationed for a bank loan as illustrated in model 5. On the other hand, and just as in Table 57 earlier for bank credit lines, firm age and firm size matters as older firms are 9.2 per cent and medium sized SMEs are 8.8 per cent less likely to be strongly rationed and significantly so at the one per cent level. Trading distress and more especially financial distress increases the likelihood of a firm being strongly rationed. The macroeconomic environment, in a similar way to bank credit lines above, does not appear to offer any explanatory power in this case.

Model 6 reports no evidence to suggest that family-owned SMEs experience weak rationing any more so than sole owner firms. Medium firms are somewhat less likely to be weak rationed

whereas exporters appear to have a greater likelihood of weak rationing for a bank loan. Just as with bank credit lines, financially distressed firms are more likely to be the subject of weak rationing by a bank (1.7 per cent). There is some evidence that the macroeconomic conditions reduce the likelihood of weak rationing.

*Table 58 – Bank Loans – Family-owned SMEs v solely owned SMEs*

	Applied Model 1	Not Needed Model 2	Discouraged Model 3	Received In Full Model 4	Strong Rationed Model 5	Weak Rationed Model 6	Self Rationed Model 7
Family Firms	0.0257*** (3.06)	-0.0197** (-2.24)	-0.0061 (-0.73)	0.0203 (1.30)	-0.0148 (-1.35)	-0.0059 (-0.46)	0.0002 (0.03)
5-10 Years	0.0144 (0.73)	-0.0540*** (-2.63)	0.0383** (2.00)	0.0750* (1.92)	-0.0862*** (-2.90)	-0.0077 (-0.24)	0.0212** (2.32)
>10 Years	-0.0052 (-0.30)	-0.0155 (-0.87)	0.0172 (1.05)	0.1002*** (2.93)	-0.0917*** (-3.40)	-0.0269 (-0.96)	0.0206*** (3.48)
Small	0.0925*** (9.55)	-0.0191* (-1.87)	-0.0716*** (-7.18)	0.0467** (2.44)	-0.0259* (-1.88)	-0.0025 (-0.17)	-0.0159** (-2.32)
Medium	0.1656*** (13.72)	-0.0320*** (-2.66)	-0.1354*** (-11.92)	0.1377*** (6.82)	-0.0880*** (-6.70)	-0.0367** (-2.26)	-0.0170** (-2.27)
Construction	-0.0014 (-0.09)	-0.0123 (-0.72)	0.0156 (0.95)	-0.0260 (-0.87)	0.0288 (1.40)	-0.0061 (-0.25)	0.0049 (0.45)
Trade	-0.0008 (-0.06)	0.0228* (1.68)	-0.0206 (-1.58)	0.0107 (0.47)	0.0155 (1.00)	-0.0235 (-1.24)	-0.0023 (-0.28)
Services	-0.0119 (-0.99)	0.0036 (0.29)	0.0099 (0.80)	-0.0071 (-0.33)	0.0265* (1.81)	-0.0216 (-1.22)	0.0056 (0.71)
Exporters	0.0232*** (2.60)	0.0024 (0.25)	-0.0256*** (-2.87)	-0.0300* (-1.85)	0.0107 (0.96)	0.0277** (2.08)	-0.0104* (-1.72)
Innovators	0.0547*** (6.32)	-0.0580*** (-6.29)	0.0014 (0.16)	-0.0352** (-2.27)	0.0129 (1.19)	0.0209* (1.65)	0.0011 (0.20)
Trading Distress	-0.0089*** (-4.10)	-0.0061*** (-2.68)	0.0143*** (6.63)	-0.0076** (-1.97)	0.0060** (2.21)	0.0010 (0.31)	0.0001 (0.08)
Financial Distress	0.0209*** (8.11)	-0.0493*** (-18.29)	0.0269*** (10.38)	-0.0422*** (-9.64)	0.0214*** (6.76)	0.0172*** (4.71)	0.0035** (2.07)
Corp Tax Rate	0.0135*** (10.58)	-0.0075*** (-5.88)	-0.0051*** (-4.14)	0.0112*** (4.72)	-0.0037** (-2.22)	-0.0059*** (-2.99)	-0.0019** (-2.33)
Inflation Rate	-0.0168* (-1.88)	0.0810*** (8.77)	-0.0630*** (-7.15)	0.0871*** (5.21)	-0.0130 (-1.11)	-0.0691*** (-5.10)	-0.0046 (-0.77)
GDP Growth Rate	0.0062** (2.30)	0.0061** (2.27)	-0.0125*** (-4.46)	0.0135** (2.43)	-0.0025 (-0.68)	-0.0074 (-1.58)	-0.0060** (-1.96)
Observations	14734	14734	14734	4012	4012	4012	4012

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Model 7 does not appear to provide any evidence of the likelihood a family-owned SME self-rationing for cost reasons more than solely owned SMEs. The results show how older firms have a greater self-rationing likelihood in contrast to the youngest cohort. Yet, small and medium firms appear somewhat less likely to self-ration. Some evidence is also found of the

greater likelihood of financially distressed firms deciding not to accept a bank loan for cost reasons, albeit the marginal effects are very small as was the case too for bank credit lines.

In summary, family-owned SMEs are more likely to apply for and need a bank loan compared to sole owners. Family owners are somewhat more likely to be granted everything although not significantly so. There is no evidence of family firms being discouraged or rationed by a bank. Similarly, family owners do not appear to self-ration any more than a sole owner firm. Of the control variables, firm age, firm size, innovators, distressed firms and macro-economic conditions are found to impact the likelihood in most models. Innovators are more likely to apply for and need a bank loan, are less likely to receive the loan in full but show little evidence of being credit rationed. Financial distress increases the likelihood of an SME needing a bank loan but are less likely to apply or receive everything whilst the same cohort are found more likely to be discouraged and experience rationing in all forms.

#### **5.2.3 Applications and Outcomes for Trade Credit**

Table 59 overleaf depicts the results of trade credit applications and outcomes likelihood of a family-owned SME in contrast to sole owners. Notably, the sample size is much smaller than that outlined for bank credit lines (Table 57) and bank loans (Table 58). Family-owned firms appear 5.3 per cent more likely to have applied for trade credit and a significantly so compared to solely owned SMEs (model 1). Firm size is important as small firms are 7.1 per cent and medium firms 12.5 per cent more likely to apply for trade credit in contrast to micro firms and the statistical significance is at the one per cent level. SMEs in the services sector are statistically less likely to apply for trade credit in contrast to firms in all other sectors. Exporters have a 6.3 per cent greater likelihood of applying for trade credit whilst innovators are somewhat more likely to apply, although the magnitude and significance is lower than the latter. The evidence suggests that financially distressed firms are more likely to make an application than those who are not stressed.

Model 2 illustrates the likelihood of a firm requiring trade credit. Noticeably, firm ownership and some of the control variables appear to have no explanatory power of the likelihood of a firm needing trade credit. There is some evidence, albeit the marginal effects and significance are small, that firms in the trade and service sector are less likely to need this credit. In contrast, exporters and innovators are more likely to need trade credit in contrast to their non-exporting and non-innovative cohorts. Financially distressed firms are 4.3 per cent more likely to need short term trade credit and statistically so at the one per cent level. Yet again, of the macroeconomic conditions appear to increase the likelihood of a firm requiring trade credit.

Models 3 illustrates the likelihood of firm discouragement. Family owners are less likely to be discouraged for applying for trade credit in contrast to sole owners and statistically so at the one per cent level. Firm size matters as both small and medium firms appear less likely to be discouraged and statistically so when compared to micro SMEs. Trading distress and especially financial distress are shown to increase the likelihood of a firm being discouraged.

Model 4 reports the likelihood of a firm receiving all trade credit sought. There appears to be no firm ownership impact and for most of the control variables. The exceptions are firms in construction and services which are deemed less likely to receive everything in contrast to industrial sector SMEs. Those firms deemed as innovative are shown to be 6.0 per cent less likely to be granted the full amount and statistically so when compared to non-innovators. Similarly, financial distressed firms are 5.4 per cent less likely to receive their full trade credit allocation at the one per cent level. More favourable macroeconomic conditions increase the likelihood of an SME receiving the full allocation sought.

In model 5, once again, no evidence is found for any family firm ownership variance as to the likelihood of being a strongly rationed trade credit borrower. Few of the control variables matter, except for firm size and financial distress. Medium sized firms are 4.8 per cent and

small firms 3.8 per cent less likely to experience strong rationing by trade credit suppliers and statistically so at the one per cent level in contrast to micro firms. Firms who experience financial distress are more likely to be strongly rationed and statistically so than their non-distressed counterparts. More favourable macroeconomic conditions are associated with the likelihood of firms receiving all of the credit sought.

*Table 59 – Trade Credit – Family-owned SMEs v solely owned SMEs*

	Applied	Not Needed	Discouraged	Received In Full Model 4	Strong Rationed Model 5	Weak Rationed Model 6	Self Rationed Model 7
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0529*** (4.32)	-0.0170 (-1.36)	-0.0344*** (-2.76)	-0.0060 (-0.26)	-0.0088 (-0.73)	0.0212 (0.97)	-0.0087* (-1.67)
5-10 Years	-0.0329 (-1.10)	-0.0028 (-0.09)	0.0336 (1.20)	-0.0366 (-0.68)	0.0080 (0.26)	0.0353 (0.71)	-0.0087 (-0.80)
>10 Years	-0.0297 (-1.15)	-0.0235 (-0.91)	0.0478** (1.99)	-0.0035 (-0.08)	-0.0302 (-1.18)	0.0381 (0.92)	-0.0042 (-0.40)
Small	0.0711*** (5.05)	0.0020 (0.14)	-0.0722*** (-5.06)	0.0139 (0.53)	-0.0380*** (-2.75)	0.0325 (1.31)	-0.0047 (-0.85)
Medium	0.1247*** (7.10)	-0.0240 (-1.41)	-0.1036*** (-6.08)	0.0174 (0.57)	-0.0479*** (-3.17)	0.0360 (1.27)	-0.0077 (-1.44)
Construction	0.0361 (1.57)	-0.0300 (-1.36)	-0.0017 (-0.08)	-0.0907** (-2.35)	0.0091 (0.44)	0.0651* (1.79)	0.0209* (1.75)
Trade	-0.0120 (-0.68)	0.0401** (2.25)	-0.0258 (-1.45)	-0.0236 (-0.80)	-0.0034 (-0.21)	0.0282 (1.03)	-0.0018 (-0.44)
Services	-0.0594*** (-3.41)	0.0303* (1.70)	0.0308* (1.71)	-0.0626** (-2.01)	0.0090 (0.53)	0.0451 (1.55)	0.0066 (1.11)
Exporters	0.0629*** (4.94)	-0.0428*** (-3.28)	-0.0194 (-1.50)	-0.0263 (-1.11)	-0.0056 (-0.46)	0.0277 (1.23)	0.0049 (1.01)
Innovators	0.0285** (2.31)	-0.0373*** (-2.95)	0.0095 (0.76)	-0.0595*** (-2.67)	0.0147 (1.28)	0.0380* (1.79)	0.0068 (1.45)
Trading Distress	-0.0084*** (-2.69)	-0.0067** (-2.09)	0.0147*** (4.70)	0.0029 (0.53)	0.0008 (0.28)	-0.0036 (-0.68)	-0.0008 (-0.78)
Financial Distress	0.0113*** (3.00)	-0.0428*** (-11.16)	0.0302*** (7.98)	-0.0544*** (-8.51)	0.0156*** (4.42)	0.0380*** (6.15)	0.0008 (0.60)
Corp Tax Rate	-0.0003 (-0.21)	-0.0012 (-0.75)	0.0015 (0.90)	0.0016 (0.54)	-0.0002 (-0.15)	-0.0020 (-0.69)	0.0001 (0.20)
Inflation Rate	-0.0454*** (-3.72)	0.0709*** (5.70)	-0.0243** (-1.97)	0.0611** (2.58)	-0.0116 (-0.97)	-0.0470** (-2.10)	-0.0020 (-0.44)
GDP Growth Rate	0.0036 (1.33)	0.0013 (0.45)	-0.0058* (-1.89)	0.0133** (2.37)	-0.0036 (-1.01)	-0.0104** (-1.98)	-0.0021 (-0.87)
Observations	8411	8411	8411	2608	2608	2608	2608

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Model 6 depicts a similar result to that found in model 5. Family ownership does not appear to matter and in this case the only control variables that are shown to influence likely weak rationing are innovation and financial distress. There is some evidence that those firms classed

as innovative appear more likely to experience weak rationing although the significance is at the ten per cent level. Financially distressed firms are shown to be 3.8 per cent more likely to be weakly rationed for trade credit and statistically so at the one per cent level. There is some evidence, albeit the marginal effects and significance are small, that more favourable macroeconomic conditions reduce the likelihood of a firm being weakly rationed. There is no compelling evidence of the likelihood of an SME self-rationing for cost reasons in the final model.

In summary, family-owned SMEs are deemed more likely to apply for trade credit and are less likely to be discouraged compared with sole owner firms. There is no evidence of rationing of family firms. In terms of the control variables, firm size, firm sector, exporters, financial distress and the macroeconomic environment all appear to influence the trade credit application and outcomes likelihood of an SME. The dominant variables are firm size and financial distress. Notably, medium sized firms are comparably more likely to apply, less likely to be discouraged or strongly rationed in contrast to micro SMEs. Finally, financially distressed firms are more likely to make an application and to need trade credit, are more likely to be discouraged, are significantly less likely to receive everything sought. Unsurprisingly, these financially distressed firms also appear much more likely to be subjected to both strong and weak forms of rationing for trade credit.

#### **5.2.4 Applications and Outcomes for Other Sources**

Table 60 overleaf illustrates the other sources applications and outcomes likelihood of family-owned SMEs versus solely owned firms. Other sources comprise of other loans, leasing and hire purchase, factoring, grants, subordinated debt, participating loans, peer to peer lending, crowdfunding, equity capital and debt securities. The sample size is 13,451 compared to Table 30, which had an initial sample size of 8,411, yet in this case the sample reduces to 2,191 in models 4 to 7 versus 2,608 for the trade credit results outlined earlier. The results show that

there is no difference in the likelihood of a family-owned SME applying for other sources of finance in contrast to sole-owners (model 1). In terms of the control dummies, firm size matters in that small firms are 4.2 per cent and medium firms are 8.3 per cent more likely to apply for these other sources and statistically so at the one per cent level in contrast to micro firms. There is some evidence to suggest that exporters are more likely to apply for other sources. Innovators are found to be 2.8 per cent more likely to make an application as are those firms who experience financial distress. The likelihood for innovators and financially distressed SMEs applying is at the one per cent level.

Model 2 illustrates the likelihood of a firm needing other sources of finance. Firm ownership does not appear to matter. Firm age is relevant as firms aged 5-10 years are 6.0 per cent more likely to need this finance and statistically so in contrast to their younger counterparts. Firms deemed as innovative are 3.1 per cent more likely to need other sources and significantly so at the one per cent level than non-innovators. The results show how those firms who experience trading distress and financial distress are 1.9 per cent and 4.6 per cent respectively more likely to need other sources of finance and statistically so at the one per cent level. More favourable macroeconomic conditions offer some evidence of the likelihood that an SME will not need other sources.

The likelihood of a firm being discouraged from applying is depicted in model 3. It appears that firms aged 5-10 years are 7.6 per cent more likely to be discouraged in contrast to both their younger and older cohorts. On the other hand, small and medium firms are 4.5 per cent and 10.6 per cent less likely to be discouraged and the statistical significance is at the one per cent level in contrast to micro SMEs. Trading distress and even more so financial distress are shown to increase the likelihood of a firm being discouraged.

Table 60 – Other Sources – Family-owned SMEs v solely owned SMEs

	Applied Model 1	Not Needed Model 2	Discouraged Model 3	Received In Full Model 4	Strong Rationed Model 5	Weak Rationed Model 6	Self Rationed Model 7
Family Firms	0.0089 (1.19)	-0.0058 (-0.61)	-0.0032 (-0.35)	-0.0223 (-1.16)	-0.0171 (-1.52)	0.0382** (2.30)	0.0020 (0.42)
5-10 Years	-0.0172 (-0.99)	-0.0600*** (-2.81)	0.0755*** (3.75)	0.0207 (0.46)	0.0086 (0.36)	-0.0125 (-0.31)	-0.0172 (-1.40)
>10 Years	-0.0207 (-1.38)	-0.0189 (-1.03)	0.0376** (2.21)	0.0570 (1.50)	-0.0023 (-0.12)	-0.0468 (-1.36)	-0.0113 (-0.93)
Small	0.0415*** (4.91)	0.0045 (0.40)	-0.0453*** (-4.19)	0.0191 (0.79)	-0.0186 (-1.30)	0.0023 (0.11)	-0.0005 (-0.08)
Medium	0.0826*** (7.79)	0.0229* (1.76)	-0.1059*** (-8.56)	0.0524** (2.03)	-0.0404*** (-2.85)	-0.0059 (-0.26)	-0.0047 (-0.77)
Construction	0.0078 (0.55)	-0.0258 (-1.42)	0.0173 (0.97)	-0.0223 (-0.60)	0.0201 (0.87)	-0.0071 (-0.22)	0.0081 (0.85)
Trade	-0.0019 (-0.17)	0.0216 (1.45)	-0.0211 (-1.45)	0.0067 (0.22)	0.0050 (0.28)	-0.0156 (-0.60)	0.0017 (0.32)
Services	0.0198* (1.90)	0.0029 (0.21)	-0.0232* (-1.73)	-0.0084 (-0.31)	-0.0031 (-0.20)	0.0006 (0.02)	0.0100* (1.71)
Exporters	0.0171** (2.17)	-0.0012 (-0.12)	-0.0158 (-1.62)	-0.0580*** (-2.88)	0.0177 (1.54)	0.0334* (1.89)	0.0057 (1.12)
Innovators	0.0228*** (2.97)	-0.0306*** (-3.07)	0.0068 (0.70)	-0.0226 (-1.15)	-0.0096 (-0.85)	0.0216 (1.26)	0.0096* (1.84)
Trading Distress	-0.0008 (-0.43)	-0.0190*** (-7.73)	0.0190*** (8.07)	-0.0019 (-0.40)	0.0002 (0.08)	0.0004 (0.09)	0.0003 (0.26)
Financial Distress	0.0119*** (5.07)	-0.0460*** (-15.26)	0.0329*** (11.31)	-0.0371*** (-6.80)	0.0162*** (4.88)	0.0202*** (4.14)	0.0012 (0.85)
Corp Tax Rate	0.0038*** (3.51)	-0.0034** (-2.50)	-0.0004 (-0.29)	0.0028 (1.00)	-0.0003 (-0.21)	-0.0025 (-1.00)	-0.0002 (-0.34)
Inflation Rate	-0.0127 (-1.60)	0.0605*** (5.98)	-0.0475*** (-4.90)	0.0868*** (4.19)	-0.0094 (-0.80)	-0.0699*** (-3.89)	-0.0071 (-1.33)
GDP Growth Rate	0.0051** (2.33)	0.0060** (2.05)	-0.0125*** (-4.03)	0.0088 (1.32)	-0.0034 (-0.78)	-0.0065 (-1.11)	-0.0001 (-0.05)
Observations	13451	13451	13451	2191	2191	2191	2191

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Model 4 depicts the likelihood of a firm receiving the full amount sought. Just as in models 1,2 and 3, there is no evidence to suggest that family-owned SMEs are more likely to receive everything when compared with solely owned firms. There is some evidence found that medium firms are more likely to receive everything, albeit the significance is five per cent. In contrast, exporters are 5.8 per cent and financially distressed firms are 3.7 per cent less likely to be approved in full for other sources and statistically so at the one per cent level.

Little evidence is found in model 5 of the likelihood of strong rationing. Medium sized SMEs are 4.0 per cent less likely to be strongly rationed and statistically so at the one per cent level

in contrast to micro firms. Conversely, financially distressed firms are 1.6 per cent more likely to experience such rationing compared to those firms who are not financially distressed.

Model 6 illustrates now family firms are 3.8 per cent more likely to be weak rationed, albeit the statistical significance is at the five per cent level in contrast to solely owned SMEs. Firms who suffer financial distress are 2.0 per cent more likely to be weakly rationed and statistically so, in a similar way to the likelihood of strong rationing as outlined in model 5 above.

Finally, model 7 illustrates no evidence either for family firm ownership or the control variables of the likelihood of a firm deciding to self-ration based on price for other sources of finance.

In sum, the results of Table 60 suggest that family-owned SME are not any different to sole owners in terms of applying, being discouraged or strongly rationed for other sources of finance. There is some evidence in model 5 to show how family-owned firms are more likely to experience weak rationing for other sources in contrast to sole owner firms. In terms of the control variables, firm size, financial distress and the macroeconomic climate appear to be the most likely influencers. Notably, financially distressed firms are found more likely to apply and to need other sources of finance, are more likely to be discouraged, are less likely to receive the full amount and hence are more likely to experience both forms of rationing.

### **5.3 Family-owned SMEs vs Professionally owned SMEs**

#### **5.3.1 Applications and Outcomes for Bank Credit Lines**

Table 61 overleaf presents the bank credit lines applications and outcomes likelihood of family-owned SMEs in contrast to professionally managed SMEs. The sample size for these results is 9,587 for models 1 to 3, reducing to 3,001 from model 4 to model 7. By way of comparison, in Table 57 earlier for family-owned SMEs versus solely owned firms the sample size was 12,688 (models 1 – 3) and then 3,846 (models 4 – 7). Family-owned firms are shown to be 6.0 per cent more likely to apply for a bank credit line in contrast to professional owners and statistically

so (model 1), just as was found for family-owned firms versus solely owned SMEs in Table 57 earlier. Medium sized firms have a 6.5 per cent greater likelihood of making an application compared to micro firms. Innovators are 6.4 per cent more likely to apply to a bank for a credit line and statistically so at the one per cent level. Firms who experience financial distress appear more likely to apply for a bank credit line in contrast to their non-distressed counterparts. In terms of the macroeconomic dummies' more favourable conditions increase the likelihood of an SME application for bank credit lines.

In model 2 family-owned firms are statistically more likely to need bank credit lines in contrast to professionally managed SMEs. This result mirrors that shown earlier for bank credit line application likelihood by family-owned SMEs versus sole owner firms. Not surprisingly, there is evidence that larger firms are less likely to require this financing source in contrast to micro SMEs. In contrast, innovative firms have a 7.1 per cent greater likelihood of needing credit lines compared to non-innovators and statistically so at the one per cent level. Similarly, financial distress heightens the likelihood by 5.7 per cent of a firm requiring bank credit lines. More favourable macroeconomic conditions appear likely increase a firm's need for short-term credit lines from a bank.

Model 3 depicts the likelihood of a firm being discouraged from applying. Firm ownership does not appear to influence the likelihood of application discouragement. Just as shown earlier in Table 57, firm size matters in that small and medium firms are 5.1 per cent and 10.1 per cent respectively less likely to be discouraged in contrast to micro SMEs and statistically so at the one per cent level. Firms experiencing either trading or financial distress appear more likely to be discouraged from applying for bank credit lines. The statistical significance is at the one per cent level, albeit the marginal effect for trading distress is small. There is some evidence that more favourable macroeconomic conditions in terms of higher tax rates reduce the likelihood of borrower discouragement.

There is no evidence found in model 4 that family owners have a greater likelihood of being granted the full amount of bank credit lines sought in contrast to professionally owned firms. In terms of the control dummies, firm age and firm size matter. Older firms are 15.7 per cent and medium sized SMEs are 11.9 per cent more likely to receive everything and statistically so at the one per cent level. Those firms deemed as innovative and those experiencing trading distress are less likely to receive the full credit sought, although the statistical significance is at the ten per cent level. Moreover, the marginal effects for trading distress are small. Financial distress reduces the likelihood by 4.9 per cent of a firm being fully approved.

Model 5 shows the likelihood of strong rationing and, just as shown earlier when family-owned SMEs were contrasted with sole owners, no evidence of any difference is found between a family-owned firm and a professionally managed SME. Firm age and firm size matter in that older and larger firms, notably, those over 10 years of age and medium sized firms, are 9.5 per cent and 5.6 per cent respectively less likely to be strongly rationed for short-term credit by a bank and statistically so at the one per cent level. Yet again, financial distress significantly increases the likelihood of a firm being strongly rationed by 1.8 percent, just as shown in Table 57 earlier.

Table 61 – Bank Credit Lines – Family-owned SMEs v professionally managed SMEs

	Applied	Not Needed	Discouraged	Received In Full Model 4	Strong Rationed Model 5	Weak Rationed Model 6	Self Rationed Model 7
	Model 1	Model 2	Model 3				
Family Firms	0.0595*** (4.58)	-0.0495*** (-3.68)	-0.0107 (-0.84)	-0.0107 (-0.46)	0.0007 (0.05)	0.0098 (0.49)	0.0015 (0.18)
5-10 Years	0.0399 (1.38)	-0.0399 (-1.40)	-0.0016 (-0.06)	0.1535*** (3.05)	-0.0623* (-1.72)	-0.0584 (-1.35)	-0.0244 (-1.40)
>10 Years	-0.0141 (-0.57)	-0.0120 (-0.48)	0.0225 (1.00)	0.1566*** (3.43)	-0.0945*** (-2.86)	-0.0421 (-1.07)	-0.0126 (-0.74)
Small	0.0224* (1.67)	0.0304** (2.23)	-0.0512*** (-3.88)	0.0421* (1.79)	-0.0145 (-0.98)	-0.0183 (-0.89)	-0.0071 (-0.85)
Medium	0.0650*** (4.29)	0.0371** (2.46)	-0.1014*** (-7.13)	0.1189*** (4.81)	-0.0563*** (-3.92)	-0.0472** (-2.18)	-0.0178** (-2.18)
Construction	-0.0022 (-0.10)	-0.0189 (-0.90)	0.0232 (1.15)	-0.0511 (-1.45)	0.0185 (0.81)	0.0173 (0.56)	0.0134 (1.02)
Trade	-0.0004 (-0.03)	0.0231 (1.39)	-0.0200 (-1.29)	0.0086 (0.32)	-0.0011 (-0.06)	-0.0037 (-0.16)	-0.0040 (-0.47)
Services	-0.0398** (-2.57)	0.0075 (0.49)	0.0319** (2.17)	0.0142 (0.56)	-0.0128 (-0.80)	-0.0077 (-0.35)	0.0059 (0.66)
Exporters	0.0184 (1.53)	-0.0170 (-1.42)	-0.0011 (-0.09)	-0.0316 (-1.60)	-0.0032 (-0.26)	0.0387** (2.22)	-0.0049 (-0.71)
Innovators	0.0643*** (5.57)	-0.0705*** (-6.05)	0.0044 (0.40)	-0.0361* (-1.93)	0.0163 (1.42)	0.0165 (1.00)	0.0033 (0.50)
Trading Distress	-0.0034 (-1.18)	-0.0065** (-2.25)	0.0094*** (3.44)	-0.0090* (-1.95)	0.0022 (0.76)	0.0046 (1.13)	0.0018 (1.07)
Financial Distress	0.0321*** (9.37)	-0.0568*** (-16.80)	0.0232*** (7.09)	-0.0485*** (-9.23)	0.0176*** (5.18)	0.0273*** (5.75)	0.0036* (1.86)
Corp Tax Rate	0.0110*** (6.97)	-0.0056*** (-3.72)	-0.0049*** (-3.35)	0.0018 (0.62)	0.0005 (0.26)	-0.0009 (-0.36)	-0.0018* (-1.85)
Inflation Rate	-0.0550*** (-4.39)	0.0919*** (7.41)	-0.0371*** (-3.14)	0.0289 (1.35)	0.0082 (0.63)	-0.0372* (-1.94)	-0.0021 (-0.27)
GDP Growth Rate	0.0038 (1.19)	0.0038 (1.28)	-0.0074** (-2.49)	0.0179** (2.45)	-0.0017 (-0.43)	-0.0143* (-1.94)	-0.0062 (-1.60)
Observations	9587	9587	9587	3001	3001	3001	3001

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

No evidence is found that the macroeconomic environment impacts the likelihood of strong rationing.

The likelihood of a weak rationing is illustrated in model 6 with little evidence found either for firm ownership or in the control dummies. The exceptions are larger firms, exporters, financial distress and to a lesser extent the macroeconomic climate. Medium sized SMEs are 4.7 per cent less likely to experience weak rationing in contrast to micro firms albeit at five per cent statistical relevance. Exporters too are 3.9 per cent more likely to be weak rationed and this is somewhat similar to the results outlined in Table 57 earlier, but the statistical significance is

not as strong in this case. Just as with strong-rationing (model 5) financial distress increases the likelihood of borrower weak rationing significantly.

Finally, model 7 deals with the likelihood that an SME will self-ration the offer of short-term bank credit lines due to price. No compelling evidence is found, except for medium firms who appear less likely to self-ration, albeit the magnitude and statistical significance are small.

In sum, just as shown earlier in Table 57 comparing family firms with sole owners, family-owned SMEs are more likely to apply for short-term bank credit lines in contrast professional-owners and are also more likely to need this source of finance, both being statistically significant at the one per cent level but no evidence of discouragement or rationing is found. Firm size matters as micro firms appear to suffer most as this cohort are less likely to apply, are more likely to need bank credit lines, have a greater likelihood of being discouraged or rationed and are less likely to receive the full amount. Financial distress is also shown to strongly influence the likelihood of a firm applying, needing, being discouraged, not receiving everything and being rationed by a bank. More favourable macro-economic conditions increase the likelihood of a firm making an application for short term credit lines from and bank and being less discouraged to do so.

### **5.3.2 Applications and Outcomes for Bank Loans**

Table 62 overleaf reports the results of the application and outcomes likelihood for bank loans of family-owned SMEs compared to professionally managed SMEs. Notably, the sample size is 11,190 for models 1 to 3 followed by 3,241 in models 4 to 7 respectively versus 14,734 (models 1 – 3) and 4,012 (models 4 – 7) illustrated earlier in Table 58 when contrasting family firms and sole owners for bank loans. Family-owned firms are 3.1 per cent more likely to apply for a bank loan in contrast to professional owners and statistically so at the one per cent level (model 1), just as in Table 58 earlier which compared family owners with solely owned SMEs. Medium-sized firms are 16.1 per cent and small firms are 8.7 per cent more likely to apply for

bank loans compared to micro firms at the one per cent level. Exporters and especially innovative firms (6.6 per cent) are found to have a greater likelihood of applying for bank loans in contrast to their non-export and non-innovative cohorts. Evidence is mixed for the distress controls in that those firms who suffer trading distress are less likely to make an application, whilst financially distressed SMEs are 2.5 per cent more likely to apply at the one per cent level. More favourable macroeconomic conditions in terms of higher tax shields appear to increase the likelihood of an SME applying for a bank loan.

Model 2 illustrates how family-owned SMEs are 3.8 per cent more likely to need a bank loan in contrast to professionally owned firms and statistically so. Similar results were found when comparing family-owned firms with sole owners in Table 58 earlier. Innovators are 5.6 per cent more likely to need this finance source at the one per cent level in contrast to those who are not deemed innovative. Firms who experience either trading distress or especially financial distress are more likely to need a bank loan. The magnitude of 5.2 per cent and statistical significance of one per cent for financial distress is greater than that found for trading distress. A more favourable macro-economic environment in terms of higher tax rates increases the likelihood of a firm needing a bank loan.

In model 3 there is no evidence to suggest that family firms are more likely to be discouraged in contrast to professionally managed SMEs. Firms aged 5-10 years are somewhat more likely to be discouraged. Firm size matters more, just as in Table 58 earlier, as small firms are 7.8 per cent and medium sized SMEs are 14.2 per cent less likely to be discouraged from applying for a bank loan and statistically so when compared to micro firms. Trading distress and financial distress increases the likelihood of firm discouragement and statistically so at the one per cent level. More favourable macroeconomic conditions reduce the likelihood of application discouragement.

Table 62 – Bank Loans – Family-owned SMEs v professionally managed SMEs

	Applied	Not Needed	Discouraged	Received In Full Model 4	Strong Rationed Model 5	Weak Rationed Model 6	Self Rationed Model 7
	Model 1	Model 2	Model 3				
Family Firms	0.0308*** (2.61)	-0.0381*** (-3.04)	0.0070 (0.59)	-0.0374* (-1.87)	0.0083 (0.60)	0.0194 (1.18)	0.0094 (1.50)
5-10 Years	-0.0290 (-1.12)	-0.0365 (-1.42)	0.0593** (2.46)	0.1085** (2.28)	-0.1118*** (-3.15)	0.0117 (0.29)	0.0013 (0.10)
>10 Years	-0.0269 (-1.20)	0.0180 (0.80)	0.0009 (0.04)	0.1599*** (3.84)	-0.1156*** (-3.54)	-0.0447 (-1.31)	0.0065 (0.60)
Small	0.0873*** (7.34)	-0.0066 (-0.52)	-0.0776*** (-6.29)	0.0669*** (2.90)	-0.0428*** (-2.73)	-0.0108 (-0.58)	-0.0095 (-1.13)
Medium	0.1605*** (11.84)	-0.0179 (-1.29)	-0.1420*** (-10.79)	0.1363*** (5.75)	-0.0758*** (-4.82)	-0.0452** (-2.36)	-0.0155* (-1.84)
Construction	-0.0198 (-1.03)	-0.0055 (-0.28)	0.0247 (1.30)	-0.0810** (-2.37)	0.0643*** (2.69)	0.0097 (0.34)	0.0045 (0.38)
Trade	0.0200 (1.33)	0.0181 (1.19)	-0.0353** (-2.48)	0.0180 (0.77)	0.0151 (1.00)	-0.0276 (-1.41)	-0.0059 (-0.76)
Services	-0.0219 (-1.62)	0.0124 (0.89)	0.0107 (0.80)	-0.0133 (-0.60)	0.0293** (2.05)	-0.0173 (-0.92)	0.0042 (0.52)
Exporters	0.0237** (2.21)	-0.0204* (-1.86)	-0.0023 (-0.22)	-0.0383** (-2.14)	0.0085 (0.72)	0.0306** (2.03)	-0.0022 (-0.36)
Innovators	0.0664*** (6.42)	-0.0562*** (-5.21)	-0.0125 (-1.24)	-0.0233 (-1.39)	0.0107 (0.95)	0.0092 (0.66)	0.0040 (0.68)
Trading Distress	-0.0091*** (-3.48)	-0.0068** (-2.55)	0.0151*** (6.04)	-0.0060 (-1.43)	0.0063** (2.23)	0.0007 (0.19)	-0.0012 (-0.81)
Financial Distress	0.0253*** (8.20)	-0.0518*** (-16.48)	0.0251*** (8.40)	-0.0407*** (-8.48)	0.0200*** (6.05)	0.0165*** (4.04)	0.0039** (2.20)
Corp Tax Rate	0.0138*** (9.23)	-0.0088*** (-6.01)	-0.0042*** (-2.96)	0.0108*** (4.13)	-0.0023 (-1.28)	-0.0074*** (-3.39)	-0.0014 (-1.60)
Inflation Rate	-0.0172 (-1.64)	0.0700*** (6.60)	-0.0508*** (-5.08)	0.1128*** (6.28)	-0.0354*** (-2.92)	-0.0794*** (-5.33)	0.0022 (0.36)
GDP Growth Rate	0.0055* (1.75)	0.0068** (2.20)	-0.0130*** (-4.02)	0.0255*** (3.61)	-0.0068 (-1.50)	-0.0151** (-2.44)	-0.0072** (-2.05)
Observations	11190	11190	11190	3241	3241	3241	3241

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

There is some evidence displayed in model 4 that family-owned SMEs are less likely to receive the full amount of a bank loan in comparison with professional owners, albeit the statistical significance is at ten per cent. In terms of the control dummies, firm age and firm size matter. Notably, firms over 10 years of age and medium sized SMEs are 16.0 per cent and 13.6 per cent respectively more likely to be granted the full bank loan and statistically so at the one per cent level. Construction sector firms and those who export are less likely to be approved in full although the significance of both is at the five per cent level. Firms who experience financial distress are 4.1 per cent are less likely to receive full approval at the one per cent level. More

favourable macroeconomic conditions increase the likelihood of a firm being fully approved for a bank loan.

In model 5 no evidence is found to suggest that family-owned SMEs are more likely to be strongly rationed for a bank loan compared to professionally managed SMEs. Firm age and firm size are important variables as the results show how the youngest and smallest SMEs are statistically more likely to be strongly rationed in contrast with older and medium-sized SMEs. Similar results were displayed earlier in Table 58. Firms in construction are 6.4 per cent more likely to experience strong rationing for a bank loan and statistically so at the one per cent level in contrast to industrial SMEs. Financial distress increases the likelihood and statistically so, whilst similar evidence is found for trading distress, albeit in the latter case the statistical significance is at the five per cent level. The macroeconomic controls offer little explanatory power of the likelihood of a firm being strongly rationed.

In model 6 evidence of the likelihood of weak rationing is limited both in terms of family firm ownership and the control variables. There is some evidence that medium firms are less likely to be weak rationed whilst the opposite holds true for exporters. The statistical significance of both firm size and exports is at the five per cent level.

Financial distress matters as firms are 1.7 per cent more likely to be weakly rationed and statistically so at the one per cent level. More favourable macroeconomic conditions reduce the likelihood of weak rationing.

Model 7 offers no compelling evidence of the likelihood of a firm self-rationing for a bank loan except for financially distressed firms who are more likely to self-ration, although the magnitude and statistical significance are small.

In summary, family-owned SMEs are more likely to apply for a bank loan and are more likely to need this finance source compared to professionally owned firms. Furthermore, no evidence

is found for family firms being any more discouraged or rationed, in any form, in contrast to professional owners. Older firms, especially those over 10 years, are more likely to receive everything and are unlikely to experience strong bank rationing, and statistically so. Firm size matters in that medium sized firms are statistically more likely to apply, are more likely to be fully supported by a bank and they are less likely to be either discouraged or rationed in any way. Other control dummies that impact the likelihood of a bank loan application and outcome include exporters, financial distress and the macroeconomic conditions. Notably, financial distress likelihood is statistically significant at the one per cent level in models 1 – 6. Such firms are more likely to apply for and need a bank loan, yet they are less likely to receive everything whilst having a greater likelihood of discouragement and being either strongly or weakly rationed.

### **5.3.3 Applications and Outcomes for Trade Credit**

Table 63 overleaf depicts the results for the likelihood of trade credit applications and outcomes for family-owned SMEs in contrast to professionally managed firms. In this case the sample size is 6,849 (models 1 – 3) and 2,334 (models 4 – 7) compared to a sample size of 8,411 (models 1 – 3) and 2,608 (models 4 – 7) as illustrated earlier in Table 59. There is some evidence that family-owned firms are more likely to apply for trade credit compared to professional owners but not statistically so. Older SMEs, especially those over 10 years of age are 8.3 per cent less likely to apply for trade credit in contrast to the youngest firms. In contrast, small firms have a 7.9 per cent and medium firms have a 11.8 per cent greater likelihood of making an application when compared to micro firms. SMEs in the services sector are 6.6 per cent less likely to apply for trade credit in contrast to firms in all other sectors and statistically so at the one per cent level. Exporters, on the other hand, are found to have a 5.4 per cent greater likelihood of applying for trade credit than non-exporter SMEs. Trading distress reduces the

likelihood of a firm applying whereas financial distress increases the likelihood and the statistical significance of both is at the one per cent level.

*Table 63 – Trade Credit – Family-owned SMEs v professionally managed SMEs*

	Applied Model 1	Not Needed Model 2	Discouraged Model 3	Received In Full Model 4	Strong Rationed Model 5	Weak Rationed Model 6	Self Rationed Model 7
Family Firms	0.0077 (0.46)	-0.0124 (-0.75)	0.0053 (0.33)	-0.0353 (-1.32)	0.0181 (1.51)	0.0148 (0.57)	0.0035 (1.04)
5-10 Years	-0.0612* (-1.68)	0.0254 (0.74)	0.0347 (1.09)	-0.0263 (-0.45)	-0.0363 (-1.14)	0.0747 (1.38)	0.0000 (.)
>10 Years	-0.0830*** (-2.61)	0.0278 (0.94)	0.0492* (1.79)	0.0340 (0.69)	-0.0546* (-1.92)	0.0270 (0.60)	-0.0035 (-0.44)
Small	0.0788*** (4.72)	0.0026 (0.15)	-0.0785*** (-4.76)	0.0299 (1.02)	-0.0424*** (-2.89)	0.0305 (1.10)	-0.0124 (-1.62)
Medium	0.1183*** (6.17)	-0.0125 (-0.67)	-0.1040*** (-5.64)	0.0462 (1.43)	-0.0511*** (-3.26)	0.0149 (0.49)	-0.0115 (-1.42)
Construction	0.0426 (1.59)	-0.0100 (-0.39)	-0.0278 (-1.14)	-0.0433 (-1.05)	0.0043 (0.21)	0.0300 (0.76)	0.0100 (0.85)
Trade	0.0130 (0.66)	0.0299 (1.55)	-0.0411** (-2.23)	0.0112 (0.37)	-0.0135 (-0.89)	-0.0003 (-0.01)	-0.0032 (-0.79)
Services	-0.0663*** (-3.45)	0.0184 (0.96)	0.0482** (2.53)	-0.0418 (-1.28)	-0.0023 (-0.14)	0.0349 (1.12)	0.0030 (0.50)
Exporters	0.0538*** (3.60)	-0.0486*** (-3.29)	-0.0045 (-0.32)	-0.0229 (-0.91)	-0.0102 (-0.87)	0.0287 (1.18)	0.0063 (1.29)
Innovators	0.0226 (1.58)	-0.0315** (-2.21)	0.0091 (0.66)	-0.0207 (-0.88)	0.0167 (1.53)	0.0020 (0.09)	0.0009 (0.23)
Trading Distress	-0.0148*** (-4.12)	-0.0033 (-0.93)	0.0180*** (5.24)	0.0104* (1.78)	0.0005 (0.18)	-0.0102* (-1.81)	-0.0017 (-1.47)
Financial Distress	0.0136*** (3.11)	-0.0428*** (-9.95)	0.0279*** (6.73)	-0.0592*** (-8.74)	0.0150*** (4.42)	0.0428*** (6.43)	0.0013 (1.04)
Corp Tax Rate	0.0005 (0.27)	-0.0015 (-0.83)	0.0009 (0.49)	0.0039 (1.22)	-0.0013 (-0.83)	-0.0038 (-1.22)	0.0005 (0.87)
Inflation Rate	-0.0571*** (-4.08)	0.0686*** (4.96)	-0.0101 (-0.76)	0.0805*** (3.21)	-0.0099 (-0.86)	-0.0743*** (-3.10)	0.0044 (1.12)
GDP Growth Rate	0.0041 (1.28)	0.0013 (0.43)	-0.0062* (-1.86)	0.0184*** (2.80)	-0.0070 (-1.38)	-0.0150** (-2.45)	0.0003 (0.33)
Observations	6849	6849	6849	2334	2334	2334	2097

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Model 2 illustrates the likelihood that a firm needs trade credit. No evidence is found that family-owned SMEs need this source more than professionally managed SMEs. Few of the control variables appear to matter. The exceptions include exporters and innovators who are more likely to need trade credit, albeit the magnitude and statistical significance is stronger for export firms. Financially distressed firms are 4.3 per cent more likely to need trade credit at the one per cent level in contrast to firms who are not financially stressed.

Turning to model 3, family-owned SMEs do not appear to be more discouraged than professional owners. Firm size matters, especially for medium firms who are found 10.4 per cent less likely to be discouraged in contrast to micro firms. There is some evidence to show how trade sector SMEs are less likely to be discouraged while the opposite holds true for service firms. Trading distress and financial distress increases the likelihood of firm discouragement by 1.8 per cent and 2.8 per cent respectively at the one per cent level.

In model 4 there is some evidence that family-owned SMEs are less likely to receive full approval for trade credit in contrast to professional owners, although the result is statistically insignificant. In general, the control variables have little explanatory power of the likelihood of an SME receiving everything sought. However, a financially distressed firm is 5.9 per cent less likely to be fully approved and statistically so at the one per cent level. More favourable macroeconomic conditions also matter and statistically so by increasing the likelihood of a firm being granted all monies.

Statistical evidence is also limited in models 5 and 6 which show the likelihood of strong and weak supplier rationing.

No evidence is found that family-owned SMEs experience trade credit rationing, in any form, more than professional owners. Micro firms are more likely to be strongly rationed and statistically so at the one per cent level.

Yet again, financial distress matters in that firms are found more likely to experience both strong and weak rationing and this likelihood is statistically significant at the one per cent level.

Finally, model 7 depicts the likelihood of a firm deciding not to accept a trade credit offer for cost reasons. Neither firm ownership nor the control variables offer any explanatory power of the likelihood of self-rationing.

In sum, there is no statistical evidence that firm ownership impacts the application likelihood or outcome likelihood of trade credit decisions. Firm size, exporters and especially financial distress are found to have the greatest influence on the likelihood of a firm's trade credit application and outcome. Lastly, there is some evidence to show how the macroeconomic conditions increases the likelihood of a firm receiving everything sought from suppliers.

#### **5.3.4 Applications and Outcomes for Other Sources**

Table 64 overleaf illustrates how family-owned SMEs are less likely to apply for other sources of finance in contrast to professionally owned firms, albeit the statistical significance is at the ten per cent level (model 1). This Table has a sample size of 10,786 (models 1 – 3) and 1,953 in models 4 – 7 versus a sample of 13,451 (models 1 – 3) and 2,191 (models 4 – 7) as displayed earlier when comparing family owners and solely owned firms in Table 60. Firm size is important as medium firms are 6.2 per cent and small firms 4.6 per cent more likely to apply for other sources in contrast to micro firms and statistically so at the one per cent level. Innovative firms also have a greater likelihood of making an application as do financially distressed firms. There is some evidence to suggest that a more favourable macroeconomic environment increase the application likelihood, although the marginal effects are small.

Model 2 depicts how a firm is likely to need other sources. Firstly, no evidence is found to suggest that a family-owned SME needs other sources of finance more than professionally managed firms. In terms of firm age, the youngest SMEs are more likely to need this financing sources whilst the evidence suggests that micro firms are also more likely to need in contrast to medium sized SMEs. Unsurprisingly, trading and more so financial distress statistically increase the likelihood of a firm requiring other sources.

In model 3 family-owned SMEs are more likely to be discouraged in contrast to professionally managed SMEs, albeit the statistical significance is ten per cent. Firm age and firm size again matter in that the youngest firms appear less likely to be discouraged from applying. In contrast,

medium sized firms are 11.2 per cent and small firms 7.0 per cent less likely to be discouraged when compared to micro firms and statistically so at the one per cent level.

*Table 64 – Other Sources – Family-owned SMEs v professionally managed SMEs*

	Applied Model 1	Not Needed Model 2	Discouraged Model 3	Received In Full Model 4	Strong Rationed Model 5	Weak Rationed Model 6	Self Rationed Model 7
Family Firms	-0.0175* (-1.74)	-0.0045 (-0.37)	0.0214* (1.84)	-0.0499** (-2.32)	0.0012 (0.10)	0.0449** (2.37)	0.0057 (1.19)
5-10 Years	-0.0181 (-0.81)	-0.0680*** (-2.58)	0.0822*** (3.41)	-0.0086 (-0.16)	0.0117 (0.45)	-0.0118 (-0.24)	0.0078 (0.86)
>10 Years	-0.0252 (-1.30)	-0.0265 (-1.16)	0.0468** (2.30)	0.0635 (1.42)	-0.0058 (-0.27)	-0.0678 (-1.60)	0.0056 (0.93)
Small	0.0457*** (4.27)	0.0278** (2.03)	-0.0704*** (-5.30)	0.0208 (0.72)	-0.0026 (-0.17)	-0.0109 (-0.43)	-0.0024 (-0.33)
Medium	0.0621*** (5.28)	0.0522*** (3.52)	-0.1118*** (-7.87)	0.0719** (2.44)	-0.0271* (-1.83)	-0.0340 (-1.29)	-0.0075 (-1.11)
Construction	0.0019 (0.11)	-0.0226 (-1.07)	0.0205 (1.01)	-0.0123 (-0.31)	0.0003 (0.01)	0.0034 (0.09)	0.0060 (0.65)
Trade	0.0019 (-0.44)	-0.0226 (1.44)	0.0205 (-1.12)	-0.0123 (1.03)	0.0003 (-0.06)	0.0034 (-1.19)	0.0060 (0.31)
Services	0.0061 (0.51)	0.0066 (0.45)	-0.0116 (-0.82)	-0.0130 (-0.47)	0.0026 (0.18)	-0.0016 (-0.07)	0.0108* (1.80)
Exporters	0.0171* (1.81)	-0.0107 (-0.92)	-0.0066 (-0.60)	-0.0593*** (-2.70)	0.0170 (1.49)	0.0364* (1.84)	0.0046 (0.86)
Innovators	0.0238*** (2.59)	-0.0218* (-1.90)	-0.0031 (-0.28)	-0.0100 (-0.47)	-0.0159 (-1.38)	0.0124 (0.65)	0.0119** (2.07)
Trading Distress	-0.0009 (-0.38)	-0.0161*** (-5.68)	0.0162*** (6.06)	-0.0038 (-0.72)	0.0008 (0.29)	0.0000 (0.00)	0.0020 (1.45)
Financial Distress	0.0104*** (3.67)	-0.0474*** (-13.54)	0.0354*** (10.68)	-0.0284*** (-4.79)	0.0127*** (3.90)	0.0147*** (2.73)	0.0007 (0.48)
Corp Tax Rate	0.0040*** (3.17)	-0.0057*** (-3.76)	0.0017 (1.14)	0.0038 (1.32)	-0.0011 (-0.73)	-0.0034 (-1.30)	0.0004 (0.46)
Inflation Rate	-0.0135 (-1.46)	0.0484*** (4.27)	-0.0341*** (-3.19)	0.0781*** (3.59)	-0.0232** (-2.08)	-0.0491** (-2.51)	-0.0047 (-0.87)
GDP Growth Rate	0.0059** (2.33)	0.0052 (1.59)	-0.0133*** (-3.83)	0.0113 (1.62)	-0.0061 (-1.25)	-0.0079 (-1.27)	0.0006 (0.55)
Observations	10786	10786	10786	1953	1953	1953	1953

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

The evidence appears to be similar for trading distress and financial distress in that a firm has a greater likelihood of being discouraged, although the marginal effects are greater for financial distress. More favourable macroeconomic conditions in terms of strong GDP growth are found to reduce the likelihood of discouragement.

Model 4 demonstrates how family-owned SMEs are 5.0 per cent less likely to receive the full amount sought in contrast to professional owners at the five per cent level. There is some evidence found that medium sized firms are more likely to be fully approved. Exporters are 5.9

per cent less likely to receive such support from other source providers and the statistical significance is one per cent. Financial distress reduces the likelihood by 2.8 per cent of a firm receiving everything and statistically so at the one per cent level.

Models 5 and 6 display the likelihood of strong and weak rationing respectively. There is some evidence found to show how family owners are more likely to be weakly rationed in contrast to professionally managed SMEs, albeit the statistical relevance is at the five per cent level. Few of the variables matter, however, financial distress is found to increase the likelihood of strong rationing by 1.3 per cent and weak rationing by 1.5 per cent respectively and statistically so at the one per cent level.

The only evidence found in model 7 suggests that innovators are more likely to self-ration, yet the magnitude and significance are small.

In sum, there is some evidence of family-owned SMEs being less likely to apply for other sources of finance, more likely to be discouraged from applying and to experience weak rationing and less likely to receive the full amount sought in contrast to professionally managed firms. In terms of the control variables financial distress is shown to have the greatest impact on the likelihood and statistically so in models 1 to 6 at the one per cent level. Some evidence is also found for firm age, firm size, and innovators although not consistently so.

The next section displays the findings for family-owned SMEs compared to all other SMEs.

## **5.4 Family-owned SMEs V all other SMEs**

This section tests the likelihood of a family-owned SME applying for bank credit lines, bank loans, trade credit and other sources of finance together with the likely outcomes in contrast to all other SMEs (comprised of solely owned SMEs and professionally owned firms) – Tables 65-68 overleaf. This likelihood is analysed using the same firm level variables and macroeconomic controls employed for research question two.

### **5.4.1 Firm Ownership**

Family-owned SMEs appear more likely to apply for bank credit lines, loans and trade credit in contrast to other SMEs and statistically so at the one per cent level (tables 65-67). Whilst family firms are found more likely to need these sources, the evidence is only significant for bank credit lines and bank loans. Family-owned SMEs are not found to experience discouragement or any form of rationing by banks compared to other SMEs. Firm ownership does not appear to matter in the likelihood of an SME receiving everything sought from a bank or trade credit supplier. Similarly, there is no evidence found that family firms are any more likely to self-ration for cost reasons.

Family firms are found less likely to receive the full amount sought from other sources providers (table 68) and appear more likely to experience weak rationing in contrast to all other SMEs.

In summary, and consistent with the earlier findings for the likely use of the sources of finance (Table 51), family-owned firms appear to prefer the more traditional bank-based sources of finance as evidenced by their greater likelihood of applying, needing and not being any more discouraged from making an application to a bank in contrast to other SMEs.

#### **5.4.2 Firm level variables**

More mature SMEs (over 10 years of age) appear more likely to receive everything sought from a bank for either credit lines or loans and are less likely to experience strong bank rationing. Medium sized firms are more likely to apply for a bank credit line or loan and this cohort appear less likely to be discouraged in contrast to micro SMEs (tables 65 and 66). This evidence is statistically significant at the one per cent level. Just as with mature firms, medium sized SMEs are much more likely to receive the full amount sought from a bank and are less likely to experience either form of rationing. Those SMEs who export are partially more likely to apply for both sources of bank finance. Some evidence is found to show how these firms are more likely to experience weak bank rationing in contrast to non-exporter firms. Innovative firms are more likely to apply to a bank for either a credit loan or loan, are more likely to need these yet they appear less likely to receive everything sought. Firms deemed to suffer trading distress are less likely to make an application for a bank loan, which they do appear to need and are found more likely to be discouraged from making an application for both sources by a bank. Financially distressed SMEs are more likely to apply for bank credit lines and bank loans which they are more likely to need yet are found more likely to be discouraged from applying, and less likely to receive full bank support. This cohort are also more likely to experience bank rationing (strong and weak) in contrast to those firms who are not financially stressed.

Small and medium sized SMEs are more likely to apply for trade credit (table 67) and are less likely to be discouraged from doing so. Exporters are more likely to apply for this source and more likely to need trade credit. Innovators are partially more likely to apply for trade credit, which they are found more likely to need yet they appear less likely to receive the full amount. Firms experiencing trading distress are found less likely to make an application for trade credit and more likely to be discouraged by providers. Financially distressed SMEs are more likely to apply for, to need trade credit and are more likely to be discouraged by suppliers. Notably,

they are less likely to receive the full amount sought and are more likely to experience both forms of rationing.

SMEs who are small or medium sized appear more likely to apply for other sources of finance and less likely to be discouraged (table 68). The medium cohort are somewhat more likely to receive the full amount sought and less likely to suffer strong rationing. Exporters and innovators are more likely to apply for other sources of finance in contrast to those SMEs who do not export or innovate. Financially distressed SMEs are found more likely to apply and to need other sources. These firms are more likely to be discouraged and rationed (both forms) by providers who are less likely to grant this cohort everything sought in contrast to non-stressed SMEs.

In sum, as with the earlier reported findings for research question two, it appears that young and particularly micro sized SMEs are less likely to apply for, receive everything sought whilst being more likely to experience both forms of rationing by suppliers of bank finance, trade credit and other sources of finance. Exporters, innovators and those deemed to suffer financial distress are found to have a greater propensity to make applications for these four sources yet appear less likely to receive the full amount sought.

#### **5.4.3 Macroeconomic controls**

A more favourable macroeconomic climate in terms of strong corporate tax rates and GDP growth appears to matter in the likelihood of an SME applying for and needing both forms of bank finance and other sources of finance. Moreover, firms are more likely to receive full support for a bank loan in such an environment (Table 66).

The next section concentrates on family-owned SMEs and presents the findings of their likelihood of making an application and the outcomes for the four sources of finance.

Table 65 - Applications and Outcomes for Bank Credit Lines – Family owned SMEs v all other SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0420*** (4.93)	-0.0378*** (-4.40)	-0.0041 (-0.50)	0.0155 (1.05)	-0.0036 (-0.39)	-0.0134 (-1.03)	0.0016 (0.29)
5-10 Years	0.0423* (2.01)	-0.0519* (-2.48)	0.0098 (0.50)	0.114** (2.98)	-0.0345 (-1.31)	-0.0494 (-1.49)	-0.0232 (-1.56)
>10 Years	-0.0090 (-0.50)	-0.0049 (-0.27)	0.0120 (0.71)	0.128*** (3.75)	-0.0578* (-2.45)	-0.0429 (-1.43)	-0.0213 (-1.53)
Small	0.0318** (3.15)	0.0147 (1.43)	-0.0458*** (-4.61)	0.0223 (1.21)	-0.0165 (-1.41)	-0.0075 (-0.47)	0.0034 (0.51)
Medium	0.0645*** (5.51)	0.0264* (2.26)	-0.0910*** (-8.28)	0.108*** (5.51)	-0.0534*** (-4.58)	-0.0495** (-2.88)	-0.0101 (-1.58)
Construction	0.0045 (0.27)	-0.0141 (-0.84)	0.0105 (0.65)	-0.0540 (-1.84)	0.0265 (1.33)	0.0180 (0.70)	0.0091 (0.91)
Trade	-0.0071 (-0.52)	0.0226 (1.67)	-0.0156 (-1.20)	0.0058 (0.25)	0.0011 (0.07)	-0.0088 (-0.44)	0.0028 (0.36)
Services	-0.0346** (-2.75)	0.0193 (1.53)	0.0148 (1.20)	0.0181 (0.84)	-0.0218 (-1.55)	-0.0022 (-0.12)	0.0073 (0.97)
Exporters	0.0203* (2.18)	-0.0068 (-0.72)	-0.0136 (-1.51)	-0.0294 (-1.82)	-0.0018 (-0.18)	0.0435** (3.06)	-0.0138* (-2.31)
Innovators	0.0661*** (7.36)	-0.0674*** (-7.32)	-0.0008 (-0.09)	-0.0519*** (-3.38)	0.0125 (1.29)	0.0328* (2.42)	0.0061 (1.11)
Trading Distress	-0.0006 (-0.27)	-0.0085*** (-3.76)	0.0086*** (3.97)	-0.0080* (-2.10)	0.0027 (1.14)	0.0036 (1.08)	0.0010 (0.71)
Financial Distress	0.0347*** (13.16)	-0.0571*** (-21.57)	0.0208*** (8.04)	-0.0487*** (-11.32)	0.0165*** (5.84)	0.0266*** (6.83)	0.0057** (3.44)
Corp Tax Rate	0.0112*** (8.90)	-0.00415** (-3.40)	-0.0063*** (-5.42)	0.0020 (0.86)	0.0001 (0.09)	-0.0009 (-0.41)	-0.0017* (-2.04)
Inflation Rate	-0.0553*** (-5.60)	0.0987*** (9.94)	-0.0437*** (-4.60)	0.0298 (1.70)	0.0074 (0.68)	-0.0388* (-2.49)	0.0010 (0.17)
GDPGrowthRate	0.0053* (2.10)	0.0042 (1.72)	-0.0090*** (-3.72)	0.0137* (2.34)	-0.0017 (-0.50)	-0.0102 (-1.79)	-0.0038 (-1.28)
Observations	14898	14898	14898	4484	4484	4484	4484

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Table 66 - Applications and Outcomes for Bank Loans - – Family owned SMEs v all other SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0279*** (3.65)	-0.0254** (-3.18)	-0.0027 (-0.36)	0.0027 (0.20)	-0.0087 (-0.91)	0.0030 (0.27)	0.0024 (0.50)
5-10 Years	0.0064 (0.35)	-0.0493* (-2.57)	0.0415* (2.32)	0.0791* (2.19)	-0.0785** (-2.91)	-0.0110 (-0.37)	0.0137 (1.48)
>10 Years	-0.0084 (-0.52)	-0.0072 (-0.43)	0.0115 (0.76)	0.111*** (3.52)	-0.0851*** (-3.49)	-0.0359 (-1.39)	0.0130 (1.87)
Small	0.0923*** (10.21)	-0.0170 (-1.77)	-0.0733*** (-7.86)	0.0625*** (3.48)	-0.0328* (-2.56)	-0.0105 (-0.73)	-0.0171** (-2.66)
Medium	0.158*** (14.78)	-0.0231* (-2.14)	-0.136*** (-13.32)	0.146*** (7.91)	-0.0860*** (-7.05)	-0.0436** (-2.94)	-0.0184** (-2.72)
Construction	0.0055 (0.36)	-0.0142 (-0.90)	0.0101 (0.67)	-0.0559* (-2.03)	0.0373* (1.96)	0.0120 (0.52)	0.0069 (0.68)
Trade	0.0055 (0.46)	0.0197 (1.56)	-0.0240* (-2.01)	0.0077 (0.38)	0.0131 (0.96)	-0.0176 (-1.05)	-0.0031 (-0.44)
Services	-0.0134 (-1.22)	0.0062 (0.53)	0.0084 (0.75)	-0.0153 (-0.80)	0.0285* (2.19)	-0.0140 (-0.88)	0.0035 (0.50)
Exporters	0.0250** (3.01)	-0.0064 (-0.73)	-0.0182* (-2.20)	-0.0363* (-2.46)	0.0111 (1.10)	0.0328** (2.69)	-0.0091 (-1.69)
Innovators	0.0593*** (7.37)	-0.0587*** (-6.84)	-0.00305 (-0.38)	-0.0394** (-2.81)	0.0193* (1.99)	0.0172 (1.49)	0.0024 (0.48)
Trading Distress	-0.0101*** (-5.00)	-0.0059** (-2.76)	0.0153*** (7.66)	-0.0080* (-2.28)	0.0058* (2.38)	0.0021 (0.73)	-0.0004 (-0.33)
Financial Distress	0.0232*** (9.69)	-0.0512*** (-20.49)	0.0264*** (11.06)	-0.0408*** (-10.23)	0.0208*** (7.28)	0.0166*** (4.97)	0.0034* (2.29)
Corp Tax Rate	0.0137*** (11.61)	-0.0076*** (-6.47)	-0.0052*** (-4.60)	0.0109*** (5.03)	-0.0034* (-2.25)	-0.0059** (-3.28)	-0.0019** (-2.58)
Inflation Rate	-0.0171* (-2.05)	0.0762*** (8.85)	-0.0577*** (-7.07)	0.0897*** (5.92)	-0.0177 (-1.68)	-0.0691*** (-5.58)	-0.0028 (-0.53)
GDPGrowthRate	0.0051* (2.00)	0.0068** (2.68)	-0.0120*** (-4.65)	0.0151** (2.89)	-0.0026 (-0.77)	-0.0093* (-2.03)	-0.0059* (-2.14)
Observations	17221	17221	17221	4732	4732	4732	4732

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Table 67 - Applications and Outcomes for Trade Credit – Family owned SMEs v all other SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0384*** (3.51)	-0.0157 (-1.42)	-0.0219* (-2.01)	-0.0174 (-0.89)	0.0017 (0.18)	0.0185 (1.00)	-0.0042 (-1.23)
5-10 Years	-0.0353 (-1.28)	-0.0033 (-0.12)	0.0367 (1.44)	-0.0255 (-0.52)	-0.0172 (-0.61)	0.0533 (1.17)	-0.0066 (-0.77)
>10 Years	-0.0427 (-1.78)	-0.0107 (-0.45)	0.0480* (2.20)	0.0314 (0.76)	-0.0474* (-1.96)	0.0226 (0.60)	-0.00233 (-0.28)
Small	0.0740*** (5.66)	0.0038 (0.29)	-0.0768*** (-5.81)	0.0260 (1.07)	-0.0401** (-3.17)	0.0241 (1.06)	-0.0060 (-1.19)
Medium	0.126*** (8.16)	-0.0130 (-0.86)	-0.114*** (-7.61)	0.0384 (1.44)	-0.0552*** (-4.25)	0.0234 (0.93)	-0.0083 (-1.66)
Construction	0.0328 (1.53)	-0.0298 (-1.45)	0.0006 (0.03)	-0.0852* (-2.38)	0.00800 (0.44)	0.0615 (1.80)	0.0178 (1.67)
Trade	-0.0042 (-0.26)	0.0421** (2.58)	-0.0362* (-2.25)	0.0069 (0.26)	-0.0047 (-0.34)	-0.0007 (-0.03)	-0.0025 (-0.68)
Services	-0.0635*** (-3.99)	0.0303 (1.88)	0.0340* (2.09)	-0.0410 (-1.46)	0.0032 (0.22)	0.0309 (1.16)	0.0047 (0.91)
Exporters	0.0638*** (5.39)	-0.0468*** (-3.88)	-0.0164 (-1.38)	-0.0362 (-1.68)	-0.0006 (-0.05)	0.0335 (1.63)	0.0039 (0.95)
Innovators	0.0242* (2.12)	-0.0404*** (-3.46)	0.0164 (1.43)	-0.0418* (-2.07)	0.0136 (1.37)	0.0207 (1.07)	0.0064 (1.61)
Trading Distress	-0.0114*** (-3.99)	-0.00569 (-1.95)	0.0168*** (5.89)	0.0019 (0.38)	0.0012 (0.50)	-0.0034 (-0.71)	-0.0004 (-0.47)
Financial Distress	0.0126*** (3.63)	-0.0434*** (-12.30)	0.0294*** (8.49)	-0.0538*** (-9.28)	0.0153*** (4.97)	0.0380*** (6.74)	0.0006 (0.55)
Corp Tax Rate	-0.0003 (-0.22)	-0.0007 (-0.47)	0.0008 (0.56)	0.0018 (0.64)	-0.0008 (-0.60)	-0.0015 (-0.56)	0.0001 (0.15)
Inflation Rate	-0.0543*** (-4.80)	0.0691*** (6.01)	-0.0133 (-1.18)	0.0698** (3.27)	-0.0092 (-0.90)	-0.0572** (-2.82)	-0.0023 (-0.60)
GDPGrowthRate	0.0034 (1.35)	0.0017 (0.67)	-0.0061* (-2.18)	0.0133* (2.56)	-0.0037 (-1.18)	-0.0103* (-2.11)	-0.0015 (-0.75)
Observations	9974	9974	9974	3162	3162	3162	3162

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Table 68 - Applications and Outcomes for Other Sources – Family owned SMEs v all other SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0015 (0.22)	-0.0067 (-0.79)	0.0049 (0.60)	-0.0345* (-2.07)	-0.0112 (-1.19)	0.0427** (2.91)	0.0038 (0.89)
5-10 Years	-0.0185 (-1.15)	-0.0525** (-2.69)	0.0696*** (3.80)	-0.00809 (-0.20)	0.0122 (0.59)	0.00674 (0.19)	-0.0110 (-1.04)
>10 Years	-0.0239 (-1.71)	-0.0114 (-0.68)	0.0333* (2.15)	0.0512 (1.54)	-0.0018 (-0.11)	-0.0437 (-1.45)	-0.0092 (-0.92)
Small	0.0441*** (5.58)	0.0063 (0.61)	-0.0494*** (-4.94)	0.0135 (0.62)	-0.0158 (-1.21)	0.00201 (0.11)	0.0021 (0.39)
Medium	0.0789*** (8.60)	0.0267* (2.35)	-0.105*** (-9.71)	0.0601** (2.68)	-0.0424*** (-3.42)	-0.0126 (-0.64)	-0.0041 (-0.84)
Construction	0.0121 (0.91)	-0.0337* (-2.01)	0.0211 (1.29)	-0.0150 (-0.46)	0.0128 (0.66)	-0.0057 (-0.20)	0.0069 (0.87)
Trade	-0.0042 (-0.41)	0.0215 (1.60)	-0.0180 (-1.38)	0.0131 (0.51)	0.0009 (0.06)	-0.0165 (-0.73)	0.00136 (0.31)
Services	0.0166 (1.75)	0.0017 (0.14)	-0.0182 (-1.54)	-0.0114 (-0.49)	0.0026 (0.20)	-0.0019 (-0.10)	0.0097* (1.97)
Exporters	0.0228** (3.13)	-0.0065 (-0.71)	-0.0163 (-1.85)	-0.0436* (-2.46)	0.0145 (1.45)	0.0262 (1.69)	0.00235 (0.55)
Innovators	0.0263*** (3.70)	-0.0284** (-3.12)	0.0009 (0.11)	-0.0234 (-1.36)	-0.0094 (-0.94)	0.0208 (1.39)	0.0108* (2.34)
Trading Distress	-0.0018 (-1.02)	-0.0183*** (-8.16)	0.0194*** (9.07)	-0.00156 (-0.37)	0.0014 (0.58)	-0.0018 (-0.48)	0.0010 (0.95)
Financial Distress	0.0139*** (6.39)	-0.0461*** (-16.69)	0.0308*** (11.61)	-0.0352*** (-7.33)	0.0150*** (5.20)	0.0193*** (4.52)	0.0011 (0.90)
Corp Tax Rate	0.0040*** (4.04)	-0.0038** (-3.11)	-0.0002 (-0.15)	0.0037 (1.53)	-0.0010 (-0.71)	-0.0030 (-1.41)	-0.0000 (-0.05)
Inflation Rate	-0.0149* (-2.02)	0.0568*** (6.13)	-0.0416*** (-4.71)	0.0772*** (4.28)	-0.0126 (-1.25)	-0.0595*** (-3.79)	-0.0048 (-1.08)
GDPGrowthRate	0.0054** (2.62)	0.0058* (2.15)	-0.0126*** (-4.45)	0.011 (1.74)	-0.0048 (-1.18)	-0.0071 (-1.35)	0.0001 (0.07)
Observations	16431	16431	16431	2797	2797	2797	2797

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## **5.5 Family-owned SMEs Subsample**

This section provides detail of the likelihood of family-owned SMEs applying for the four sources of finance and for the likely outcome of such applications (Tables 69-72 overleaf, see pages 278 - 281). This likelihood is assessed against the same firm level variables and macroeconomic controls used throughout the tests for research question two.

### **5.5.1 Sources of finance**

Little evidence is found that the age of a family-owned SME influences the likelihood of an application or outcome for both forms of bank finance. Firms aged 5 – 10 years and more especially those over 10 years of age are somewhat more likely to receive everything sought from a bank. The older cohort are less likely to experience strong bank rationing in contrast to the youngest family firms. The significance of firm size is evident in that medium-sized family firms are more likely to apply for a bank credit line and loan, are less likely to be discouraged and more likely to be granted the full amount sought. Moreover, this medium-sized cohort appear less likely to experience strong rationing in contrast to micro family-owned SMEs. Innovative family firms are more likely to apply to a bank for both sources and are more likely to need a credit line or loan in contrast to non-innovators. Those financially distressed family firms are found more likely to apply, more likely to need and more likely to be discouraged or rationed (both forms) by banks. Moreover, financially distressed family firms appear less likely to receive everything sought from a bank. More favourable macroeconomic conditions appear to have a greater impact on the likelihood of a family-owned SME applying for, needing and receiving the full amount of a bank loan sought.

Firm age does not appear to impact the likelihood of a family-owned SME applying for trade credit or the likely application outcomes. Firm size on the other hand is found to influence the likelihood of small and more so medium family-owned firms applying for trade credit and being less likely to be discouraged or experience strong rationing in contrast to micro firms.

Services sector family firms are somewhat less likely to apply for trade credit and less likely to be granted the full amount sought in contrast to those in the industrial sector. Financially distressed family firms appear somewhat more likely to apply and to need trade credit. This cohort are also found more likely to be discouraged and rationed (strong and weak) whilst they are shown are less likely to receive everything sought compared to non-stressed firms.

Finally, family firms aged 5 – 10 years appear partially more likely to need other sources of finance yet are more likely to be discouraged from applying. Small family-owned SMEs and particularly the medium-sized cohort are more likely to apply for and are less likely to be discouraged by other sources providers. Those classed as medium-sized are somewhat more likely to be granted the full amount of financing from other sources sought. Those financially distressed family-owned SMEs are more likely to need other sources yet, they are less likely to receive full support. Moreover, this cohort appear more likely to be discouraged and rationed compared to non-stressed family firms.

### 5.5.2 Summary

While there was some evidence to show the age of a family-owned SME impacts the likelihood of making an application and the likely outcomes, firm size was found to be a more powerful determinant. Notably, medium-sized family firms appeared more likely to apply, less likely to be discouraged and more likely to be granted the full amount sought by the providers of the four sources of finance. Innovative family-owned SMEs were more likely to apply for a bank credit line and loan and appeared more likely to need this source in contrast to their non-innovative counterparts. Financially distressed family firms were more likely to apply for both forms of bank finance, were more likely to experience discouragement or rationing (strong and weak) and were less likely to receive everything requested.

The next section (after Tables 69 – 72) presents the findings of an alternative model using single country dummies in place of the macroeconomic controls.

Table 69 – Applications and Outcomes for Bank Credit Lines

	Applied Model 1	Not Needed Model 2	Discouraged Model 3	Received In Full Model 4	Strong Rationed Model 5	Weak Rationed Model 6	Self Rationed Model 7
5-10 Years	0.0335 (0.99)	-0.0524 (-1.59)	0.0163 (0.56)	0.161** (2.85)	-0.0714 (-1.72)	-0.0657 (-1.34)	-0.0215 (-1.09)
>10 Years	-0.0250 (-0.86)	-0.0261 (-0.91)	0.0465 (1.84)	0.160** (3.13)	-0.103** (-2.72)	-0.0447 (-1.00)	-0.0108 (-0.57)
Small	0.0268 (1.79)	0.0239 (1.61)	-0.0493*** (-3.40)	0.0324 (1.26)	-0.00987 (-0.60)	-0.0119 (-0.54)	-0.0102 (-1.07)
Medium	0.0638*** (3.65)	0.0351* (2.06)	-0.100*** (-6.23)	0.104*** (3.80)	-0.0580*** (-3.73)	-0.0296 (-1.22)	-0.0227* (-2.53)
Construction	0.00429 (0.18)	-0.0283 (-1.21)	0.0266 (1.18)	-0.0111 (-0.29)	-0.000776 (-0.03)	-0.000773 (-0.02)	0.00885 (0.57)
Trade	-0.00608 (-0.31)	0.0217 (1.15)	-0.0127 (-0.72)	-0.00123 (-0.04)	-0.00369 (-0.18)	0.0108 (0.40)	-0.00807 (-0.75)
Services	-0.0470** (-2.61)	-0.000905 (-0.05)	0.0475** (2.80)	0.0303 (1.05)	-0.0224 (-1.19)	-0.00749 (-0.30)	-0.00332 (-0.30)
Exporters	0.0237 (1.72)	-0.0225 (-1.66)	-0.00209 (-0.16)	-0.0245 (-1.10)	-0.00782 (-0.57)	0.0377 (1.92)	-0.00531 (-0.67)
Innovators	0.0624*** (4.71)	-0.0715*** (-5.44)	0.00803 (0.64)	-0.0369 (-1.74)	0.00345 (0.26)	0.0296 (1.59)	0.00367 (0.49)
Trading Distress	-0.00463 (-1.39)	-0.00428 (-1.31)	0.00838** (2.68)	-0.00766 (-1.46)	0.00118 (0.36)	0.00323 (0.70)	0.00286 (1.49)
Financial Distress	0.0313*** (7.97)	-0.0568*** (-14.86)	0.0242*** (6.48)	-0.0498*** (-8.33)	0.0194*** (4.96)	0.0281*** (5.20)	0.00233 (1.06)
Corp Tax Rate	0.0111*** (6.13)	-0.00613*** (-3.61)	-0.00436** (-2.63)	0.00375 (1.16)	-0.00152 (-0.75)	-0.00104 (-0.36)	-0.00173 (-1.51)
Inflation Rate	-0.0476*** (-3.35)	0.0877*** (6.33)	-0.0406** (-3.05)	0.0284 (1.18)	0.0101 (0.69)	-0.0368 (-1.73)	-0.00104 (-0.12)
GDP Growth Rate	0.00423 (1.19)	0.00289 (0.89)	-0.00695* (-2.12)	0.0245** (2.70)	-0.0103 (-1.64)	-0.0125 (-1.60)	-0.00457 (-1.07)
<i>N</i>	7377	7377	7377	2363	2363	2363	2363

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 70 – Applications and Outcomes for Bank Loans

	Applied	Not Needed	Discouraged	Received In Full Model 4	Strong Rationed Model 5	Weak Rationed Model 6	Self Rationed Model 7
	Model 1	Model 2	Model 3				
5-10 Years	-0.0232 (-0.78)	-0.0425 (-1.45)	0.0585* (2.11)	0.107 (1.95)	-0.136** (-3.21)	0.0250 (0.54)	0.0134 (1.18)
>10 Years	-0.0251 (-0.98)	0.00879 (0.34)	0.0085 (0.36)	0.152** (3.16)	-0.137*** (-3.51)	-0.0297 (-0.77)	0.0203** (2.58)
Small	0.0866*** (6.55)	-0.00491 (-0.35)	-0.0788*** (-5.80)	0.0514* (2.01)	-0.0389* (-2.23)	-0.000827 (-0.04)	-0.00870 (-0.91)
Medium	0.172*** (11.03)	-0.0238 (-1.54)	-0.148*** (-10.03)	0.138*** (5.24)	-0.0825*** (-4.79)	-0.0413 (-1.94)	-0.0166 (-1.74)
Construction	-0.0373 (-1.74)	-0.00117 (-0.05)	0.0377 (1.76)	-0.0380 (-0.98)	0.0571* (2.12)	-0.0199 (-0.62)	0.000451 (0.03)
Trade	0.0122 (0.72)	0.0232 (1.35)	-0.0323* (-1.99)	0.0226 (0.83)	0.0193 (1.09)	-0.0378 (-1.65)	-0.00520 (-0.57)
Services	-0.0206 (-1.32)	0.0108 (0.68)	0.0114 (0.74)	-0.00210 (-0.08)	0.0261 (1.55)	-0.0287 (-1.30)	0.00831 (0.85)
Exporters	0.0206 (1.70)	-0.00858 (-0.69)	-0.0118 (-1.01)	-0.0261 (-1.26)	0.00688 (0.50)	0.0204 (1.17)	-0.00298 (-0.40)
Innovators	0.0600*** (5.12)	-0.0546*** (-4.49)	-0.00700 (-0.61)	-0.00962 (-0.49)	-0.00303 (-0.23)	0.0123 (0.76)	0.00202 (0.29)
Trading Distress	-0.00658* (-2.23)	-0.00784** (-2.60)	0.0135*** (4.75)	-0.00566 (-1.15)	0.00701* (2.11)	-0.00119 (-0.29)	-0.000342 (-0.19)
Financial Distress	0.0216*** (6.18)	-0.0484*** (-13.56)	0.0254*** (7.44)	-0.0420*** (-7.59)	0.0205*** (5.31)	0.0171*** (3.63)	0.00389 (1.84)
Corp Tax Rate	0.0134*** (7.86)	-0.00883*** (-5.34)	-0.00370* (-2.29)	0.0114*** (3.78)	-0.00268 (-1.29)	-0.00778** (-3.11)	-0.00140 (-1.32)
Inflation Rate	-0.0165 (-1.40)	0.0744*** (6.30)	-0.0565*** (-5.02)	0.109*** (5.26)	-0.0301* (-2.14)	-0.0795*** (-4.67)	0.00111 (0.15)
GDP Growth Rate	0.00713* (2.09)	0.00567 (1.67)	-0.0139*** (-3.77)	0.0233** (2.97)	-0.00760 (-1.41)	-0.0121 (-1.87)	-0.00735 (-1.76)
<i>N</i>	8703	8703	8703	2521	2521	2521	2521

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 71 – Applications and Outcomes for Trade Credit

	Applied	Not Needed	Discouraged	Received In Full Model 4	Strong Rationed Model 5	Weak Rationed Model 6	Self Rationed Model 7
	Model 1	Model 2	Model 3				
5-10 Years	-0.0635 (-1.50)	0.0336 (0.84)	0.0277 (0.74)	-0.0424 (-0.64)	-0.000604 (-0.02)	0.0547 (0.88)	0 (.)
>10 Years	-0.0742* (-2.01)	0.0172 (0.50)	0.0490 (1.52)	-0.0222 (-0.40)	-0.0236 (-0.80)	0.0518 (1.01)	-0.00664 (-0.60)
Small	0.0865*** (4.66)	-0.00342 (-0.18)	-0.0800*** (-4.39)	0.0198 (0.61)	-0.0470** (-2.85)	0.0450 (1.47)	-0.0145 (-1.58)
Medium	0.132*** (5.95)	-0.0324 (-1.53)	-0.0985*** (-4.66)	0.0288 (0.78)	-0.0489** (-2.61)	0.0324 (0.94)	-0.0151 (-1.64)
Construction	0.0486 (1.63)	-0.00659 (-0.23)	-0.0372 (-1.36)	-0.0436 (-0.95)	0.00533 (0.22)	0.0284 (0.66)	0.0157 (1.02)
Trade	0.00446 (0.20)	0.0226 (1.04)	-0.0247 (-1.16)	-0.0303 (-0.87)	-0.0139 (-0.77)	0.0416 (1.25)	-0.00216 (-0.48)
Services	-0.0566* (-2.57)	0.0136 (0.62)	0.0437* (1.99)	-0.0740* (-1.97)	0.00487 (0.24)	0.0582 (1.64)	0.00494 (0.75)
Exporters	0.0522** (3.08)	-0.0423* (-2.53)	-0.00904 (-0.55)	-0.00223 (-0.08)	-0.0218 (-1.52)	0.0181 (0.66)	0.00806 (1.35)
Innovators	0.0289 (1.78)	-0.0239 (-1.48)	-0.00414 (-0.26)	-0.0409 (-1.51)	0.0198 (1.49)	0.0222 (0.86)	-0.00117 (-0.24)
Trading Distress	-0.0116** (-2.82)	-0.00413 (-1.01)	0.0156*** (3.92)	0.0135* (2.00)	0.000281 (0.08)	-0.0123 (-1.90)	-0.00258 (-1.68)
Financial Distress	0.0121* (2.45)	-0.0419*** (-8.57)	0.0286*** (6.02)	-0.0611*** (-7.88)	0.0148*** (3.62)	0.0444*** (5.83)	0.00178 (1.13)
Corp Tax Rate	0.00102 (0.47)	-0.00267 (-1.28)	0.00181 (0.86)	0.00445 (1.19)	-0.000748 (-0.36)	-0.00513 (-1.45)	0.000722 (1.00)
Inflation Rate	-0.0473** (-3.00)	0.0721*** (4.66)	-0.0242 (-1.60)	0.0669* (2.31)	-0.0124 (-0.88)	-0.0637* (-2.33)	0.00830 (1.57)
GDP Growth Rate	0.00454 (1.28)	0.000419 (0.12)	-0.00556 (-1.47)	0.0196** (2.65)	-0.00834 (-1.30)	-0.0161* (-2.36)	0.000195 (0.10)
<i>N</i>	5286	5286	5286	1780	1780	1780	1616

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 72 – Applications and Outcomes for Other Sources

	Applied	Not Needed	Discouraged	Received In Full Model 4	Strong Rationed Model 5	Weak Rationed Model 6	Self Rationed Model 7
	Model 1	Model 2	Model 3				
5-10 Years	-0.0136 (-0.52)	-0.0921 ** (-2.92)	0.0997 *** (3.46)	0.0505 (0.76)	0.00320 (0.10)	-0.0595 (-0.94)	0.00203 (0.19)
>10 Years	-0.0197 (-0.86)	-0.0489 (-1.80)	0.0622 * (2.57)	0.0837 (1.45)	-0.00953 (-0.35)	-0.0873 (-1.58)	0.00661 (0.73)
Small	0.0482 *** (4.07)	0.0294 (1.91)	-0.0755 *** (-5.04)	0.0453 (1.34)	-0.00973 (-0.55)	-0.0204 (-0.68)	-0.00995 (-1.01)
Medium	0.0719 *** (5.23)	0.0539 ** (3.14)	-0.125 *** (-7.60)	0.0801 * (2.23)	-0.0274 (-1.55)	-0.0364 (-1.13)	-0.0122 (-1.23)
Construction	-0.0120 (-0.64)	-0.00491 (-0.20)	0.0169 (0.73)	-0.0291 (-0.59)	0.0124 (0.47)	0.00440 (0.10)	0.00895 (0.68)
Trade	-0.00429 (-0.28)	0.0252 (1.31)	-0.0211 (-1.14)	0.0243 (0.66)	0.00778 (0.39)	-0.0354 (-1.07)	0.00227 (0.34)
Services	0.00773 (0.55)	0.0114 (0.65)	-0.0184 (-1.08)	-0.0103 (-0.30)	-0.00625 (-0.37)	0.00416 (0.13)	0.0116 (1.47)
Exporters	0.00556 (0.51)	-0.00208 (-0.15)	-0.00340 (-0.26)	-0.0882 ** (-3.27)	0.0223 (1.59)	0.0522 * (2.13)	0.0109 (1.45)
Innovators	0.0170 (1.60)	-0.0236 (-1.76)	0.00614 (0.48)	-0.000691 (-0.03)	-0.0198 (-1.40)	0.00990 (0.42)	0.00894 (1.28)
Trading Distress	0.000815 (0.31)	-0.0166 *** (-5.02)	0.0148 *** (4.72)	-0.00627 (-0.97)	-0.00114 (-0.35)	0.00506 (0.87)	0.00131 (0.77)
Financial Distress	0.00595 (1.84)	-0.0475 *** (-11.74)	0.0404 *** (10.47)	-0.0286 *** (-3.90)	0.0135 *** (3.39)	0.0142 * (2.11)	0.000799 (0.42)
Corp Tax Rate	0.00367 * (2.51)	-0.00577 ** (-3.25)	0.00205 (1.19)	0.00231 (0.63)	-0.0000522 (-0.03)	-0.00269 (-0.81)	0.000155 (0.16)
Inflation Rate	-0.0124 (-1.18)	0.0519 *** (4.00)	-0.0389 ** (-3.15)	0.0914 *** (3.40)	-0.0193 (-1.41)	-0.0620 * (-2.54)	-0.00720 (-1.03)
GDP Growth Rate	0.00544 (1.92)	0.00509 (1.38)	-0.0127 ** (-3.22)	0.00863 (1.06)	-0.00360 (-0.67)	-0.00746 (-1.01)	0.000617 (0.43)
<i>N</i>	7806	7806	7806	1347	1347	1347	1347

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## **5.6 Single Country Dummies (Alternative Model)**

The twelve countries in the overall sample are tested individually for the likelihood of making an application for credit and the likelihood of the outcomes, as an alternative test to the macroeconomic controls used throughout the earlier tests for each of the four sources of finance. The analyses do, however, retain the same firm level controls as employed for research question two. The base country is Germany.

As the only changes made to the eight tables below (Tables 73-80 overleaf on pages 286 - 293) relate to the use of the single country dummies, the earlier findings reported above remain valid in respect of firm ownership and all firm level variables and as such are not restated here.

### **5.6.1 Bank Credit Lines**

SMEs in Spain, Italy, France and Austria are more likely to apply for bank credit lines in contrast to German firms (base), whilst there is partial evidence found that those in Belgium, Portugal and Slovakia appear to have a greater propensity to make an application. Dutch, Finnish and Greek SMEs are shown less likely to apply for a bank credit line in contrast to German firms. Firms in seven countries appear more likely to need a bank credit line, notably those in Greece, Italy, Slovakia and Spain compared to German SMEs. In contrast Dutch firms are found somewhat less likely to need this source. The greater likelihood of a firm being discouraged from applying are shown for those in Greece and to a lesser extent Irish and Finnish SMEs in contrast to German firms. On the other hand, Austrian SMEs are less likely to be discouraged from applying for bank credit lines as are those in France and Spain.

Only SMEs in Austria and Finland appear partially more likely to receive everything sought compared to German Firms (base). Greek and Dutch firms are found less likely to receive all of a bank credit line sought, whilst there is some evidence to suggest that Irish, Italian and Spanish SMEs too are less likely to be fully supported in contrast to German firms. Of those that do apply, evidence of strong rationing is shown for Dutch and Greek SMEs, with

weaker evidence of strong rationing found for Irish, French, Italian and Belgian firms compared to those in Germany. SMEs found most likely to experience weak bank rationing for a credit line are found in Spain, Ireland, Italy and Greece.

Finally, French and Spanish firms are less likely to self-ration for cost reasons, whilst there is partial evidence shown that a similar likelihood applies to those SMEs in Italy, the Netherlands, Slovakia and Austria in contrast to German SMEs.

#### **5.6.2 Bank Loans**

Belgian, French, Spanish and Italian SMEs appear more likely to apply for a bank loan in contrast to German firms. There is some evidence to show how Dutch firms are less likely to apply for this source. SMEs in most of the countries in the sample are found to need a bank loan when compared to those in Germany, notably Greek, Italian and Spanish firms. There is partial evidence to show how Belgian, Dutch and Slovakian SMEs are also more likely to need a bank loan in contrast to German firms (base). The likelihood of an SME being discouraged from applying for a bank loan is found in the case of Greek and Italian firms and consistently so at the one per cent level. Some evidence of this greater likelihood of discouragement is shown for those firms in Slovakia, the Netherlands and Portugal in contrast to German SMEs. It appears that firms in Austria and Belgium are less likely to be discouraged by a bank compared to the base country (Germany).

SMEs in Greece, Netherlands and Spain appear much less likely to be granted the full amount of a bank loan sought in contrast to German firms. The rest of the PIIGS countries, namely Irish, Italian and Portuguese SMEs are also less likely to receive the full amount of a loan, albeit the evidence for Portuguese firms is insignificant. Thus, the assertion is that German SMEs appear more likely to be approved for the full amount of a bank loan sought when compared to most of the countries in the sample. Evidence of the likelihood of an SME experiencing strong rationing for this source is shown for Dutch, Greek and partial evidence is

found for Italian SMEs in contrast to German firms. Those firms in Greece, Spain, Italy and somewhat in the case of the Netherlands are more likely to be weak rationed by a bank for a loan. Little evidence is found of the likelihood of an SME self-rationing for cost reasons. It appears, however, that Belgian, French and Spanish firms are somewhat less likely to refuse a bank loan for cost reasons in contrast to the base country (Germany).

#### **5.6.3 Trade Credit**

Spanish, Italian and to a lesser extent Irish SMEs appear more likely to apply for trade credit in contrast to German firms (base). Those firms in the Netherlands, Belgium and France are less likely to make an application for this source. Italian, Greek and Spanish firms need trade credit, whilst there is partial evidence to show how Irish and Slovakian firms also need this source compared to German SMEs. Only Greek firms are found more likely to be discouraged from applying at the one per cent level, while some evidence shows how Slovakian and Italian SMEs are more likely to be discouraged. Austrian SMEs appear somewhat less likely to be discouraged in applying for trade credit in contrast to those in Germany (base).

Firms in Germany are more likely to receive the full amount of trade credit sought in contrast to SMEs in other countries, notably Greek, Dutch, Italian, Spanish and Portuguese firms. Little evidence of the likelihood of an SME being strong rationed is found, yet the findings suggest that Greek and Italian firms are more likely to experience weak rationing compared to German firms. Finally, no evidence is found of the likelihood of an SME self-rationing for cost reasons in any country in the sample.

#### **5.6.4 Other Sources**

SMEs in Spain, France, Italy, the Netherlands and Slovakia are found more likely to make an application for other sources of finance when compared to German firms. Spanish, French, Italian and Slovakian firms appear to need this source as to those in Greece, yet Dutch SMEs are not shown to need other sources of finance. The likelihood of discouragement is found for

Greek and Italian firms whilst there is partial evidence to show how Portuguese and Slovakian SMEs are also more likely to be discouraged from applying.

Greek, Spanish and Italian firms appear less likely to receive the full amount sought in contrast to German SMEs (base). Little evidence of strong rationing for other sources of finance is found, whilst Spanish and Italian firms are shown more likely to be weak rationed by providers. Finally, as with trade credit no evidence is shown of any SME self-rationing for cost reasons.

#### **5.6.5 Summary**

The evidence showed how Greek SMEs were worst affected of all. Notably, these firms were more likely to be discouraged for both forms of bank finance, trade credit and other sources whilst they were also less likely to receive everything sought from any of the providers in contrast to German SMEs. Moreover, Greek SMEs were found more likely to experience credit rationing. Finally, German SMEs were more likely to receive the full amount of trade credit sought, whilst Spanish, Italian and Dutch firms appeared more likely to need the sources of finance, they were less likely to receive the full amount and were more likely to experience credit rationing.

## Family-owned SMEs versus solely owned SMEs (Tables 73 – 76)

Table 73 - Applications and Outcomes for Bank Credit Lines

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0097 (1.01)	-0.0031 (-0.32)	-0.0054 (-0.59)	0.0314* (1.86)	-0.0041 (-0.39)	-0.0305** (-2.03)	0.0031 (0.51)
5-10 Years	0.0242 (1.08)	-0.0462** (-2.09)	0.0211 (1.01)	0.1082*** (2.67)	-0.0360 (-1.30)	-0.0517 (-1.45)	-0.0144 (-0.93)
>10 Years	-0.0236 (-1.22)	-0.0003 (-0.02)	0.0216 (1.20)	0.1219*** (3.37)	-0.0578** (-2.31)	-0.0444 (-1.38)	-0.0162 (-1.16)
Small	0.0589*** (5.47)	-0.0142 (-1.30)	-0.0451*** (-4.22)	0.0091 (0.47)	-0.0108 (-0.86)	0.0032 (0.19)	-0.0014 (-0.19)
Medium	0.1023*** (7.66)	-0.0158 (-1.21)	-0.0878*** (-7.02)	0.0888*** (4.00)	-0.0541*** (-4.30)	-0.0241 (-1.22)	-0.0159** (-2.21)
Construction	0.0014 (0.08)	-0.0197 (-1.10)	0.0178 (1.03)	-0.0258 (-0.83)	0.0117 (0.55)	0.0048 (0.18)	0.0073 (0.62)
Trade	-0.0023 (-0.16)	0.0117 (0.80)	-0.0095 (-0.68)	0.0095 (0.38)	-0.0080 (-0.47)	-0.0025 (-0.11)	0.0017 (0.18)
Services	-0.0291** (-2.12)	0.0036 (0.26)	0.0256* (1.91)	0.0310 (1.31)	-0.0319** (-2.02)	-0.0008 (-0.04)	0.0016 (0.18)
Exporters	0.0257*** (2.58)	-0.0073 (-0.73)	-0.0191** (-1.98)	-0.0255 (-1.47)	-0.0040 (-0.36)	0.0431*** (2.81)	-0.0156** (-2.32)
Innovators	0.0613*** (6.38)	-0.0599*** (-6.09)	-0.0021 (-0.23)	-0.0562*** (-3.39)	0.0048 (0.46)	0.0444*** (3.04)	0.0064 (1.04)
Trading Distress	-0.0019 (-0.79)	-0.0060** (-2.49)	0.0073*** (3.14)	-0.0088** (-2.15)	0.0034 (1.32)	0.0036 (0.99)	0.0014 (0.93)
Financial Distress	0.0290*** (10.11)	-0.0504*** (-17.50)	0.0201*** (7.13)	-0.0494*** (-10.58)	0.0166*** (5.44)	0.0269*** (6.32)	0.0064*** (3.41)
Austria	0.0791*** (3.00)	-0.0076 (-0.28)	-0.0710*** (-2.99)	0.0822* (1.90)	-0.0193 (-0.76)	-0.0282 (-0.75)	-0.0387** (-2.23)
Belgium	0.0696** (2.43)	-0.0193 (-0.64)	-0.0512* (-1.95)	0.0474 (0.94)	0.0222 (0.64)	-0.0207 (-0.48)	0.0000 (.)
Germany	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)
Spain	0.2113*** (12.79)	-0.1662*** (-10.25)	-0.0397*** (-2.62)	-0.0203 (-0.74)	-0.0179 (-1.16)	0.0714*** (2.89)	-0.0372*** (-2.99)
Finland	-0.0808*** (-2.64)	0.0056 (0.14)	0.0797** (2.04)	0.1300* (1.70)	-0.0232 (-0.49)	-0.0996* (-1.79)	-0.0051 (-0.11)
France	0.1517*** (10.20)	-0.0869** (-5.61)	-0.0560*** (-4.11)	0.0100 (0.38)	0.0292* (1.75)	-0.0019 (-0.09)	-0.0407*** (-3.45)
Greece	-0.0465* (-1.72)	-0.2387*** (-8.07)	0.2769*** (8.22)	-0.2856*** (-3.75)	0.1700*** (2.71)	0.0845 (1.27)	-0.0072 (-0.22)
Ireland	0.0001 (0.00)	-0.0423 (-1.15)	0.0445 (1.24)	-0.0053 (-0.07)	0.0517 (0.92)	-0.0155 (-0.25)	-0.0333 (-1.20)
Italy	0.1636*** (11.51)	-0.2107*** (-14.77)	0.0426*** (3.01)	-0.0185 (-0.72)	0.0150 (0.96)	0.0293 (1.32)	-0.0323*** (-2.60)
Netherlands	-0.0795*** (-4.54)	0.0092 (0.42)	0.0599*** (2.81)	-0.2547*** (-4.38)	0.2903*** (5.07)	0.0082 (0.17)	-0.0186 (-0.68)
Portugal	0.0484** (2.17)	-0.0691*** (-2.88)	0.0264 (1.16)	-0.0026 (-0.06)	-0.0037 (-0.15)	0.0285 (0.74)	-0.0210 (-1.05)
Slovakia	0.0731** (2.05)	-0.1624*** (-4.65)	0.0981*** (2.63)	0.0821 (1.39)	-0.0345 (-1.14)	-0.0169 (-0.32)	-0.0380* (-1.66)
Observations	12688	12688	12688	3846	3846	3846	3677

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Table 74 – Applications and Outcomes for Bank Loans

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0132 (1.54)	0.0002 (0.02)	-0.0128 (-1.49)	0.0294* (1.85)	-0.0125 (-1.13)	-0.0173 (-1.31)	0.0003 (0.06)
5-10 Years	0.0059 (0.30)	-0.0421** (-2.07)	0.0346* (1.81)	0.0825** (2.13)	-0.0872*** (-2.95)	-0.0175 (-0.53)	0.0228** (2.40)
>10 Years	-0.0123 (-0.72)	-0.0057 (-0.32)	0.0141 (0.87)	0.1090*** (3.20)	-0.0926*** (-3.44)	-0.0373 (-1.31)	0.0210*** (3.47)
Small	0.1044*** (10.75)	-0.0391*** (-3.80)	-0.0656*** (-6.51)	0.0403** (2.12)	-0.0266* (-1.93)	0.0056 (0.36)	-0.0180** (-2.47)
Medium	0.1864*** (15.15)	-0.0620*** (-5.11)	-0.1269*** (-10.88)	0.1293*** (6.36)	-0.0911*** (-6.91)	-0.0230 (-1.39)	-0.0194** (-2.44)
Construction	-0.0074 (-0.46)	-0.0102 (-0.60)	0.0192 (1.18)	-0.0236 (-0.80)	0.0304 (1.46)	-0.0105 (-0.43)	0.0067 (0.59)
Trade	0.0040 (0.31)	0.0162 (1.19)	-0.0186 (-1.43)	0.0207 (0.92)	0.0080 (0.52)	-0.0246 (-1.31)	-0.0031 (-0.38)
Services	-0.0101 (-0.84)	-0.0024 (-0.19)	0.0141 (1.15)	-0.0046 (-0.21)	0.0230 (1.55)	-0.0210 (-1.19)	0.0062 (0.76)
Exporters	0.0258*** (2.89)	0.0033 (0.36)	-0.0284*** (-3.18)	-0.0239 (-1.49)	0.0112 (1.01)	0.0211 (1.59)	-0.0107* (-1.73)
Innovators	0.0502*** (5.82)	-0.0514*** (-5.59)	-0.0004 (-0.05)	-0.0361** (-2.36)	0.0150 (1.40)	0.0200 (1.60)	0.0016 (0.27)
Trading Distress	-0.0090*** (-4.15)	-0.0049** (-2.15)	0.0134*** (6.19)	-0.0094** (-2.46)	0.0066** (2.47)	0.0025 (0.80)	0.0004 (0.29)
Financial Distress	0.0179*** (6.91)	-0.0443*** (-16.25)	0.0251*** (9.59)	-0.0408*** (-9.35)	0.0216*** (6.88)	0.0149*** (4.08)	0.0037** (2.13)
Austria	0.0033 (0.14)	0.0414 (1.48)	-0.0455* (-1.88)	0.0139 (0.30)	-0.0473* (-1.67)	0.0677 (1.62)	0.0000 (.)
Belgium	0.1515*** (5.72)	-0.0682** (-2.52)	-0.0862*** (-3.84)	0.0624 (1.64)	-0.0424* (-1.66)	0.0146 (0.46)	-0.0354*** (-3.72)
Germany	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)
Spain	0.1094*** (7.76)	-0.1206*** (-8.01)	0.0112 (0.80)	-0.1210*** (-4.57)	-0.0121 (-0.68)	0.1540*** (6.79)	-0.0188* (-1.86)
Finland	0.0137 (0.43)	-0.0140 (-0.38)	0.0044 (0.13)	0.0864 (1.62)	-0.0652** (-2.11)	0.0018 (0.04)	-0.0219 (-1.12)
France	0.1425*** (10.98)	-0.1314*** (-9.51)	-0.0083 (-0.65)	0.0479** (2.22)	-0.0140 (-0.86)	-0.0096 (-0.61)	-0.0255*** (-2.85)
Greece	-0.0270 (-1.31)	-0.2222*** (-9.91)	0.2367*** (9.61)	-0.3737*** (-6.59)	0.1176** (2.53)	0.1864*** (3.53)	0.0603* (1.71)
Ireland	-0.0429 (-1.35)	-0.0138 (-0.34)	0.0599 (1.54)	-0.1655* (-1.76)	0.0787 (1.04)	0.0904 (1.15)	0.0020 (0.05)
Italy	0.1037*** (8.21)	-0.1860*** (-13.80)	0.0762*** (5.80)	-0.0439* (-1.86)	-0.0031 (-0.19)	0.0570*** (3.14)	-0.0106 (-1.05)
Netherlands	-0.0330* (-1.75)	-0.0390* (-1.69)	0.0701*** (3.13)	-0.3246*** (-6.13)	0.2648*** (5.13)	0.0912** (2.05)	-0.0096 (-0.48)
Portugal	-0.0182 (-0.93)	-0.0289 (-1.23)	0.0477** (2.18)	-0.0434 (-0.93)	-0.0056 (-0.17)	0.0543 (1.43)	-0.0033 (-0.17)
Slovakia	-0.0242 (-0.69)	-0.1217*** (-2.96)	0.1492*** (3.55)	-0.0134 (-0.15)	0.0054 (0.08)	0.0209 (0.30)	-0.0039 (-0.10)
Observations	14734	14734	14734	4012	4012	4012	3838

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Table 75 – Applications and Outcomes for Trade Credit

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0380*** (3.05)	-0.0020 (-0.16)	-0.0338*** (-2.66)	0.0079 (0.34)	-0.0055 (-0.46)	0.0025 (0.11)	-0.0084 (-1.56)
5-10 Years	-0.0384 (-1.29)	0.0045 (0.15)	0.0325 (1.17)	-0.0401 (-0.76)	0.0170 (0.58)	0.0355 (0.72)	-0.0085 (-0.79)
>10 Years	-0.0398 (-1.54)	-0.0177 (-0.70)	0.0512** (2.15)	-0.0141 (-0.32)	-0.0203 (-0.84)	0.0422 (1.03)	-0.0035 (-0.34)
Small	0.0756*** (5.38)	-0.0071 (-0.50)	-0.0685*** (-4.78)	0.0013 (0.05)	-0.0411*** (-2.94)	0.0472* (1.93)	-0.0044 (-0.76)
Medium	0.1388*** (7.81)	-0.0407** (-2.39)	-0.1006*** (-5.82)	0.0080 (0.27)	-0.0547*** (-3.64)	0.0511* (1.81)	-0.0078 (-1.40)
Construction	0.0389* (1.71)	-0.0377* (-1.70)	0.0022 (0.10)	-0.0835** (-2.21)	0.0083 (0.39)	0.0607* (1.70)	0.0217* (1.75)
Trade	0.0000 (0.00)	0.0247 (1.38)	-0.0228 (-1.28)	-0.0224 (-0.77)	-0.0087 (-0.53)	0.0333 (1.21)	-0.0023 (-0.53)
Services	-0.0497*** (-2.88)	0.0168 (0.94)	0.0350* (1.95)	-0.0593* (-1.94)	0.0023 (0.13)	0.0488* (1.70)	0.0067 (1.07)
Exporters	0.0654*** (5.14)	-0.0443*** (-3.40)	-0.0204 (-1.58)	-0.0185 (-0.79)	-0.0083 (-0.69)	0.0235 (1.05)	0.0045 (0.91)
Innovators	0.0247** (2.02)	-0.0309** (-2.45)	0.0085 (0.68)	-0.0556** (-2.53)	0.0146 (1.27)	0.0348* (1.65)	0.0071 (1.46)
Trading Distress	-0.0073** (-2.37)	-0.0068** (-2.14)	0.0138*** (4.40)	0.0033 (0.60)	0.0014 (0.51)	-0.0041 (-0.78)	-0.0008 (-0.76)
Financial Distress	0.0095*** (2.53)	-0.0393*** (-10.21)	0.0290*** (7.64)	-0.0515*** (-8.11)	0.0157*** (4.55)	0.0352*** (5.70)	0.0010 (0.74)
Austria	0.0349 (0.77)	0.0569 (1.16)	-0.0957** (-2.24)	-0.0403 (-0.52)	0.0396 (0.78)	0.0127 (0.19)	0.0000 (.)
Belgium	-0.0818** (-2.37)	0.0958** (2.28)	-0.0173 (-0.45)	-0.1464 (-1.64)	0.0132 (0.31)	0.1224 (1.45)	0.0199 (0.67)
Germany	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)
Spain	0.1155*** (5.33)	-0.0871*** (-3.84)	-0.0296 (-1.35)	-0.1218*** (-3.40)	0.0230 (1.20)	0.1039*** (3.18)	-0.0018 (-0.28)
Finland	0.0635 (1.24)	-0.0488 (-0.94)	-0.0131 (-0.26)	0.0762 (1.18)	0.0000 (.)	-0.0293 (-0.46)	0.0000 (.)
France	-0.0475** (-2.09)	0.0159 (0.62)	0.0294 (1.21)	-0.0622 (-1.38)	0.0296 (1.21)	0.0291 (0.73)	0.0021 (0.25)
Greece	-0.0085 (-0.30)	-0.1157*** (-3.88)	0.1179*** (3.85)	-0.4084*** (-6.83)	0.0665** (2.03)	0.3178*** (5.37)	0.0149 (0.90)
Ireland	0.0979** (2.41)	-0.0693* (-1.73)	-0.0323 (-0.83)	-0.0612 (-0.96)	-0.0126 (-0.45)	0.0710 (1.19)	-0.0008 (-0.08)
Italy	0.0685*** (3.29)	-0.1348*** (-6.15)	0.0613*** (2.82)	-0.1475*** (-4.10)	0.0097 (0.53)	0.1367*** (4.14)	0.0063 (0.86)
Netherlands	-0.0879*** (-3.31)	0.0367 (1.14)	0.0520 (1.64)	-0.3416*** (-5.08)	0.2387*** (4.09)	0.1257** (2.04)	0.0090 (0.60)
Portugal	0.0047 (0.16)	-0.0033 (-0.10)	-0.0029 (-0.10)	-0.1283** (-2.36)	-0.0137 (-0.62)	0.1475*** (2.82)	0.0011 (0.12)
Slovakia	0.0281 (0.50)	-0.1757*** (-3.38)	0.1518** (2.52)	-0.0741 (-0.73)	-0.0041 (-0.10)	0.0727 (0.76)	0.0114 (0.42)
Observations	8411	8411	8411	2608	2491	2608	2420

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Table 76 – Applications and Outcomes for Other Sources

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0025 (0.33)	0.0152 (1.56)	-0.0171* (-1.83)	-0.0049 (-0.25)	-0.0197* (-1.71)	0.0217 (1.27)	0.0041 (0.78)
5-10 Years	-0.0232 (-1.33)	-0.0505** (-2.39)	0.0713*** (3.55)	0.0169 (0.38)	0.0097 (0.41)	-0.0054 (-0.13)	-0.0178 (-1.38)
>10 Years	-0.0255* (-1.69)	-0.0117 (-0.64)	0.0340** (2.01)	0.0587 (1.55)	-0.0003 (-0.02)	-0.0486 (-1.42)	-0.0112 (-0.88)
Small	0.0482*** (5.68)	-0.0128 (-1.15)	-0.0359*** (-3.31)	0.0089 (0.37)	-0.0137 (-0.98)	0.0091 (0.45)	-0.0013 (-0.18)
Medium	0.0922*** (8.56)	-0.0041 (-0.32)	-0.0899*** (-7.13)	0.0375 (1.46)	-0.0366*** (-2.63)	0.0077 (0.34)	-0.0064 (-0.97)
Construction	0.0015 (0.11)	-0.0284 (-1.56)	0.0240 (1.35)	-0.0155 (-0.42)	0.0198 (0.86)	-0.0133 (-0.42)	0.0092 (0.83)
Trade	0.0009 (0.08)	0.0089 (0.60)	-0.0126 (-0.87)	0.0133 (0.45)	0.0044 (0.25)	-0.0192 (-0.75)	0.0009 (0.15)
Services	0.0188* (1.80)	-0.0090 (-0.66)	-0.0116 (-0.87)	-0.0088 (-0.33)	-0.0059 (-0.37)	0.0035 (0.15)	0.0092 (1.43)
Exporters	0.0204*** (2.59)	-0.0025 (-0.25)	-0.0175* (-1.81)	-0.0513** (-2.55)	0.0184 (1.60)	0.0280 (1.58)	0.0048 (0.87)
Innovators	0.0222*** (2.88)	-0.0227** (-2.29)	-0.0002 (-0.02)	-0.0197 (-1.01)	-0.0114 (-1.01)	0.0188 (1.10)	0.0111** (1.97)
Trading Distress	-0.0006 (-0.30)	-0.0175*** (-7.15)	0.0174*** (7.40)	-0.0032 (-0.66)	0.0006 (0.21)	0.0013 (0.30)	0.0003 (0.20)
Financial Distress	0.0104*** (4.41)	-0.0404*** (-13.29)	0.0290*** (9.90)	-0.0339*** (-6.19)	0.0154*** (4.74)	0.0177*** (3.64)	0.0016 (1.01)
Austria	-0.0077 (-0.41)	0.0359 (1.33)	-0.0278 (-1.10)	-0.0742 (-1.25)	0.0103 (0.37)	0.0713 (1.31)	-0.0028 (-0.19)
Belgium	0.0248 (1.07)	0.0216 (0.70)	-0.0505* (-1.81)	-0.0552 (-0.91)	0.0487 (1.18)	0.0309 (0.61)	0.0000 (.)
Germany	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)
Spain	0.1056*** (8.03)	-0.1099*** (-6.95)	0.0049 (0.33)	-0.1753*** (-5.67)	0.0232 (1.60)	0.1554*** (5.49)	0.0020 (0.22)
Finland	0.0439 (1.59)	-0.0398 (-1.13)	-0.0027 (-0.08)	-0.0624 (-0.94)	0.0308 (0.78)	0.0514 (0.87)	0.0000 (.)
France	0.0817*** (7.22)	-0.1031*** (-7.22)	0.0219 (1.62)	-0.0522** (-2.10)	0.0459*** (3.10)	0.0185 (0.91)	-0.0073 (-1.10)
Greece	-0.0081 (-0.44)	-0.1888*** (-7.25)	0.1903*** (7.15)	-0.3127*** (-3.90)	0.0950** (2.04)	0.1733** (2.46)	0.0354 (1.04)
Ireland	0.0448 (1.37)	-0.0269 (-0.64)	-0.0240 (-0.61)	-0.1113 (-1.26)	0.0494 (0.88)	0.0664 (0.90)	-0.0026 (-0.13)
Italy	0.0388*** (3.25)	-0.1999*** (-12.91)	0.1554*** (9.89)	-0.1220*** (-3.74)	0.0316* (1.94)	0.1024*** (3.49)	-0.0096 (-1.48)
Netherlands	0.0591*** (3.43)	-0.0323 (-1.48)	-0.0320 (-1.58)	-0.1351*** (-2.94)	0.1066*** (3.11)	0.0195 (0.59)	0.0183 (1.01)
Portugal	-0.0190 (-1.19)	-0.0537** (-2.22)	0.0722*** (3.08)	-0.0703 (-1.26)	0.0356 (1.08)	0.0582 (1.17)	0.0000 (.)
Slovakia	0.0571** (2.08)	-0.1464*** (-4.42)	0.0915*** (2.75)	-0.0269 (-0.44)	-0.0172 (-1.11)	0.0531 (0.90)	-0.0029 (-0.16)
Observations	13451	13451	13451	2191	2191	2191	1893

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Family-owned SMEs versus Professionally owned SMEs (Tables 77 – 80)

Table 77 – Applications and Outcomes for Bank Credit Lines

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0582*** (4.52)	-0.0435*** (-3.26)	-0.0140 (-1.09)	-0.0112 (-0.48)	0.0035 (0.25)	0.0090 (0.44)	-0.0011 (-0.12)
5-10 Years	0.0233 (0.81)	-0.0273 (-0.97)	-0.0002 (-0.01)	0.1562*** (3.10)	-0.0690* (-1.88)	-0.0637 (-1.45)	-0.0189 (-1.12)
>10 Years	-0.0279 (-1.13)	0.0002 (0.01)	0.0228 (1.02)	0.1608*** (3.53)	-0.1015*** (-3.03)	-0.0481 (-1.20)	-0.0080 (-0.50)
Small	0.0433*** (3.30)	0.0104 (0.76)	-0.0533*** (-4.01)	0.0349 (1.48)	-0.0097 (-0.66)	-0.0129 (-0.63)	-0.0131 (-1.39)
Medium	0.1001*** (6.63)	0.0044 (0.29)	-0.1035*** (-7.14)	0.1083*** (4.29)	-0.0519*** (-3.61)	-0.0378* (-1.71)	-0.0246*** (-2.63)
Construction	-0.0056 (-0.27)	-0.0222 (-1.06)	0.0286 (1.42)	-0.0491 (-1.39)	0.0155 (0.69)	0.0151 (0.49)	0.0176 (1.21)
Trade	0.0102 (0.61)	0.0125 (0.75)	-0.0201 (-1.30)	0.0128 (0.48)	-0.0054 (-0.31)	-0.0049 (-0.21)	-0.0027 (-0.30)
Services	-0.0252* (-1.65)	-0.0070 (-0.46)	0.0326** (2.22)	0.0129 (0.51)	-0.0125 (-0.77)	-0.0062 (-0.28)	0.0051 (0.55)
Exporters	0.0195 (1.64)	-0.0171 (-1.43)	-0.0023 (-0.20)	-0.0315 (-1.59)	-0.0035 (-0.29)	0.0385** (2.20)	-0.0028 (-0.38)
Innovators	0.0616*** (5.40)	-0.0640*** (-5.52)	0.0016 (0.14)	-0.0344* (-1.84)	0.0147 (1.29)	0.0174 (1.06)	0.0031 (0.44)
Trading Distress	-0.0028 (-0.96)	-0.0061** (-2.12)	0.0084*** (3.07)	-0.0099** (-2.16)	0.0023 (0.80)	0.0057 (1.40)	0.0020 (1.18)
Financial Distress	0.0258*** (7.51)	-0.0497*** (-14.52)	0.0228*** (6.89)	-0.0469*** (-8.91)	0.0162*** (4.86)	0.0265*** (5.53)	0.0046** (2.24)
Austria	0.0903*** (2.61)	-0.0089 (-0.25)	-0.0824*** (-2.66)	0.0153 (0.28)	-0.0108 (-0.39)	0.0434 (0.86)	0.0000 (.)
Belgium	0.0733** (2.21)	-0.0014 (-0.04)	-0.0726** (-2.41)	-0.0037 (-0.06)	0.0714* (1.65)	-0.0090 (-0.20)	0.0000 (.)
Germany	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)
Spain	0.2103*** (11.02)	-0.1523*** (-7.94)	-0.0523*** (-2.94)	-0.0521* (-1.65)	0.0049 (0.29)	0.0915*** (3.32)	-0.0454*** (-2.83)
Finland	-0.0554 (-1.60)	0.0183 (0.42)	0.0459 (1.10)	0.0710 (0.89)	-0.0177 (-0.44)	-0.0441 (-0.71)	-0.0048 (-0.09)
France	0.1551*** (8.45)	-0.0952*** (-4.97)	-0.0535*** (-3.10)	-0.0407 (-1.27)	0.0431** (2.28)	0.0461* (1.72)	-0.0492*** (-3.14)
Greece	-0.0272 (-0.87)	-0.2318*** (-6.80)	0.2465*** (6.45)	-0.3242*** (-3.78)	0.1652** (2.53)	0.1414* (1.89)	-0.0175 (-0.51)
Ireland	-0.0272 (-0.21)	-0.2318*** (-0.26)	0.2465*** (0.53)	-0.3242*** (-0.77)	0.1652** (1.46)	0.1414* (0.15)	-0.0175 (-1.39)
Italy	0.1872*** (11.31)	-0.1945*** (-11.40)	0.0046 (0.28)	-0.0721** (-2.45)	0.0405** (2.42)	0.0617** (2.52)	-0.0333** (-2.04)
Netherlands	-0.0731*** (-3.40)	0.0595** (2.18)	0.0061 (0.24)	-0.1644** (-2.40)	0.1835*** (3.09)	0.0349 (0.64)	-0.0454* (-1.91)
Portugal	0.0654*** (2.63)	-0.0697*** (-2.61)	0.0098 (0.39)	-0.0409 (-0.89)	0.0139 (0.54)	0.0470 (1.18)	-0.0189 (-0.80)
Slovakia	0.1021** (2.23)	-0.1621*** (-3.66)	0.0690 (1.48)	0.0585 (0.86)	-0.0095 (-0.26)	-0.0162 (-0.28)	-0.0323 (-0.98)
Observations	9587	9587	9587	3001	3001	3001	2731

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Table 78 – Applications and Outcomes for Bank Loans

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0364*** (3.10)	-0.0404*** (-3.22)	0.0046 (0.39)	-0.0327 (-1.64)	0.0087 (0.64)	0.0163 (0.99)	0.0078 (1.19)
5-10 Years	-0.0351 (-1.36)	-0.0284 (-1.12)	0.0556** (2.30)	0.1077** (2.29)	-0.1128*** (-3.18)	0.0084 (0.21)	0.0020 (0.16)
>10 Years	-0.0353 (-1.57)	0.0286 (1.30)	-0.0030 (-0.14)	0.1590*** (3.87)	-0.1180*** (-3.62)	-0.0481 (-1.41)	0.0071 (0.68)
Small	0.0978*** (8.29)	-0.0257** (-2.01)	-0.0723*** (-5.81)	0.0625*** (2.75)	-0.0421*** (-2.73)	-0.0053 (-0.29)	-0.0123 (-1.37)
Medium	0.1830*** (13.33)	-0.0490*** (-3.49)	-0.1351*** (-10.01)	0.1268*** (5.31)	-0.0743*** (-4.71)	-0.0322* (-1.67)	-0.0194** (-2.13)
Construction	-0.0240 (-1.26)	-0.0048 (-0.24)	0.0283 (1.49)	-0.0796** (-2.33)	0.0619*** (2.59)	0.0102 (0.36)	0.0060 (0.47)
Trade	0.0252* (1.69)	0.0112 (0.73)	-0.0335** (-2.36)	0.0245 (1.07)	0.0109 (0.73)	-0.0275 (-1.41)	-0.0064 (-0.82)
Services	-0.0167 (-1.24)	0.0050 (0.36)	0.0127 (0.95)	-0.0115 (-0.52)	0.0262* (1.82)	-0.0144 (-0.77)	0.0036 (0.43)
Exporters	0.0253** (2.37)	-0.0214* (-1.95)	-0.0024 (-0.23)	-0.0318* (-1.79)	0.0085 (0.73)	0.0245 (1.63)	-0.0016 (-0.26)
Innovators	0.0608*** (5.88)	-0.0491*** (-4.56)	-0.0137 (-1.36)	-0.0244 (-1.46)	0.0101 (0.91)	0.0102 (0.73)	0.0043 (0.73)
Trading Distress	-0.0084*** (-3.24)	-0.0065** (-2.42)	0.0142*** (5.70)	-0.0076* (-1.82)	0.0060** (2.16)	0.0025 (0.69)	-0.0008 (-0.54)
Financial Distress	0.0220*** (7.07)	-0.0465*** (-14.60)	0.0233*** (7.73)	-0.0384*** (-8.03)	0.0191*** (5.83)	0.0144*** (3.51)	0.0042** (2.34)
Austria	0.0159 (0.50)	0.0522 (1.44)	-0.0726** (-2.43)	-0.0482 (-0.83)	0.0078 (0.23)	0.0695 (1.36)	-0.0227 (-1.12)
Belgium	0.1263*** (4.12)	-0.0546* (-1.72)	-0.0754*** (-2.92)	0.0625 (1.56)	0.0086 (0.31)	-0.0355 (-1.20)	-0.0292** (-2.05)
Germany	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)	0.0000 (.)
Spain	0.1132*** (6.93)	-0.1192*** (-6.83)	0.0057 (0.36)	-0.1418*** (-4.90)	0.0343* (1.96)	0.1402*** (5.68)	-0.0243** (-2.10)
Finland	0.0001 (0.00)	0.0092 (0.21)	-0.0039 (-0.10)	0.0036 (0.05)	-0.0043 (-0.11)	0.0239 (0.42)	-0.0132 (-0.48)
France	0.1437*** (8.93)	-0.1517*** (-8.96)	0.0102 (0.66)	0.0284 (1.14)	0.0271 (1.62)	-0.0256 (-1.41)	-0.0237** (-2.08)
Greece	-0.0230 (-0.96)	-0.2080*** (-8.00)	0.2143*** (7.76)	-0.3931*** (-6.46)	0.1767*** (3.67)	0.1836*** (3.32)	0.0247 (0.82)
Ireland	-0.0657* (-1.85)	0.0218 (0.47)	0.0489 (1.12)	-0.1546 (-1.38)	0.1056 (1.20)	0.0977 (1.01)	0.0000 (.)
Italy	0.1278*** (8.46)	-0.1901*** (-11.84)	0.0565*** (3.72)	-0.0869*** (-3.31)	0.0449*** (2.71)	0.0665*** (3.20)	-0.0166 (-1.41)
Netherlands	-0.0377 (-1.54)	-0.0213 (-0.72)	0.0541* (1.95)	-0.2671*** (-4.02)	0.2301*** (3.88)	0.0456 (0.94)	0.0050 (0.17)
Portugal	-0.0113 (-0.50)	-0.0402 (-1.55)	0.0523** (2.18)	-0.0408 (-0.88)	0.0150 (0.52)	0.0523 (1.33)	-0.0168 (-0.94)
Slovakia	-0.0249 (-0.55)	-0.0982* (-1.85)	0.1275** (2.43)	-0.0272 (-0.28)	0.0367 (0.56)	0.0209 (0.27)	-0.0179 (-0.51)
Observations	11190	11190	11190	3241	3241	3241	3158

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Table 79 – Applications and Outcomes for Trade Credit

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0002 (0.01)	-0.0035 (-0.21)	0.0048 (0.30)	-0.0269 (-1.01)	0.0224* (1.73)	0.0047 (0.18)	0.0039 (0.95)
5-10 Years	-0.0640* (-1.77)	0.0286 (0.84)	0.0328 (1.04)	-0.0292 (-0.52)	-0.0334 (-0.96)	0.0709 (1.34)	0.0000 (.)
>10 Years	-0.0944*** (-2.99)	0.0334 (1.14)	0.0526* (1.94)	0.0222 (0.46)	-0.0575* (-1.87)	0.0328 (0.75)	-0.0053 (-0.52)
Small	0.0810*** (4.89)	-0.0049 (-0.29)	-0.0743*** (-4.50)	0.0150 (0.52)	-0.0438*** (-2.79)	0.0440 (1.61)	-0.0159 (-1.57)
Medium	0.1295*** (6.74)	-0.0271 (-1.44)	-0.1011*** (-5.44)	0.0334 (1.05)	-0.0547*** (-3.27)	0.0274 (0.92)	-0.0151 (-1.41)
Construction	0.0425 (1.61)	-0.0183 (-0.72)	-0.0208 (-0.85)	-0.0407 (-1.00)	0.0017 (0.08)	0.0294 (0.75)	0.0092 (0.72)
Trade	0.0233 (1.19)	0.0168 (0.87)	-0.0385** (-2.08)	0.0130 (0.43)	-0.0179 (-1.05)	0.0006 (0.02)	-0.0042 (-0.81)
Services	-0.0545*** (-2.85)	0.0053 (0.28)	0.0499*** (2.62)	-0.0386 (-1.19)	-0.0093 (-0.52)	0.0367 (1.19)	0.0028 (0.38)
Exporters	0.0560*** (3.76)	-0.0513*** (-3.48)	-0.0043 (-0.30)	-0.0183 (-0.73)	-0.0101 (-0.79)	0.0243 (1.01)	0.0075 (1.29)
Innovators	0.0209 (1.47)	-0.0266* (-1.88)	0.0068 (0.50)	-0.0197 (-0.85)	0.0174 (1.46)	0.0006 (0.03)	0.0008 (0.17)
Trading Distress	-0.0126*** (-3.51)	-0.0041 (-1.15)	0.0164*** (4.80)	0.0110* (1.91)	0.0016 (0.55)	-0.0110** (-1.97)	-0.0018 (-1.40)
Financial Distress	0.0126*** (2.88)	-0.0394*** (-9.14)	0.0261*** (6.29)	-0.0568*** (-8.38)	0.0155*** (4.26)	0.0410*** (6.13)	0.0014 (0.94)
Austria	0.0380 (0.70)	0.0638 (1.11)	-0.1085** (-2.24)	-0.0016 (-0.02)	0.0000 (..)	-0.0059 (-0.08)	0.0000 (..)
Belgium	-0.0639 (-1.53)	0.0906* (1.89)	-0.0278 (-0.64)	-0.0658 (-0.77)	0.0000 (..)	0.0193 (0.25)	0.0116 (0.38)
Germany	0.0000 (..)	0.0000 (..)	0.0000 (..)	0.0000 (..)	0.0000 (..)	0.0000 (..)	0.0000 (..)
Spain	0.1369*** (5.29)	-0.0806*** (-3.02)	-0.0560** (-2.20)	-0.1167*** (-2.89)	0.0000 (..)	0.0894** (2.37)	-0.0081 (-0.62)
Finland	0.0091 (0.15)	0.0298 (0.47)	-0.0366 (-0.64)	0.0023 (0.03)	0.0000 (..)	0.0063 (0.07)	0.0000 (..)
France	-0.0475* (-1.66)	0.0199 (0.64)	0.0276 (0.94)	-0.0432 (-0.85)	0.0000 (..)	-0.0080 (-0.18)	0.0001 (0.01)
Greece	-0.0106 (-0.32)	-0.1037*** (-2.99)	0.1064*** (3.03)	-0.4442*** (-6.70)	0.0000 (..)	0.3742*** (5.62)	0.0000 (..)
Ireland	0.0991** (2.10)	-0.0681 (-1.48)	-0.0307 (-0.69)	-0.0179 (-0.27)	0.0000 (..)	0.0273 (0.42)	0.0000 (..)
Italy	0.0814*** (3.24)	-0.1229*** (-4.72)	0.0389 (1.52)	-0.1255*** (-3.09)	0.0000 (..)	0.1178*** (3.08)	-0.0076 (-0.58)
Netherlands	-0.0929*** (-2.80)	0.0904** (2.30)	0.0088 (0.24)	-0.2482*** (-3.27)	0.0000 (..)	0.1077 (1.55)	0.0000 (..)
Portugal	0.0277 (0.82)	-0.0275 (-0.78)	-0.0006 (-0.02)	-0.1223** (-2.15)	0.0000 (..)	0.1112** (2.04)	-0.0048 (-0.32)
Slovakia	-0.0459 (-0.72)	-0.0682 (-0.98)	0.1223* (1.69)	-0.1191 (-0.87)	0.0000 (..)	0.0978 (0.74)	0.0000 (..)
Observations	6849	6849	6849	2334	2238	2334	1470

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Table 80 – Applications and Outcomes for Other Sources

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	-0.0120 (-1.21)	-0.0048 (-0.39)	0.0164 (1.42)	-0.0419* (-1.94)	-0.0002 (-0.01)	0.0378** (1.98)	0.0061 (1.16)
5-10 Years	-0.0236 (-1.05)	-0.0573** (-2.20)	0.0757*** (3.15)	-0.0056 (-0.11)	0.0133 (0.53)	-0.0151 (-0.30)	0.0080 (0.82)
>10 Years	-0.0307 (-1.58)	-0.0157 (-0.70)	0.0399** (1.96)	0.0641 (1.43)	-0.0007 (-0.03)	-0.0758* (-1.76)	0.0062 (0.92)
Small	0.0505*** (4.75)	0.0088 (0.64)	-0.0581*** (-4.38)	0.0128 (0.46)	0.0010 (0.06)	-0.0070 (-0.28)	-0.0031 (-0.39)
Medium	0.0706*** (5.96)	0.0233 (1.56)	-0.0930*** (-6.48)	0.0543* (1.87)	-0.0244* (-1.66)	-0.0193 (-0.74)	-0.0088 (-1.16)
Construction	-0.0041 (-0.25)	-0.0270 (-1.29)	0.0290 (1.45)	-0.0118 (-0.30)	0.0020 (0.10)	0.0010 (0.03)	0.0055 (0.55)
Trade	-0.0030 (-0.23)	0.0106 (0.65)	-0.0086 (-0.56)	0.0323 (1.11)	-0.0037 (-0.23)	-0.0301 (-1.15)	0.0012 (0.22)
Services	0.0075 (0.63)	-0.0091 (-0.62)	0.0014 (0.10)	-0.0223 (-0.81)	0.0011 (0.07)	0.0074 (0.30)	0.0110 (1.63)
Exporters	0.0217** (2.29)	-0.0148 (-1.27)	-0.0065 (-0.60)	-0.0552** (-2.52)	0.0157 (1.36)	0.0351* (1.78)	0.0044 (0.72)
Innovators	0.0233** (2.54)	-0.0143 (-1.25)	-0.0102 (-0.94)	-0.0060 (-0.28)	-0.0174 (-1.49)	0.0089 (0.47)	0.0140** (2.20)
Trading Distress	-0.0006 (-0.26)	-0.0150*** (-5.29)	0.0149*** (5.62)	-0.0051 (-0.98)	0.0007 (0.26)	0.0018 (0.37)	0.0022 (1.39)
Financial Distress	0.0092*** (3.26)	-0.0413*** (-11.73)	0.0307*** (9.22)	-0.0260*** (-4.42)	0.0122*** (3.77)	0.0129** (2.40)	0.0007 (0.43)
Austria	0.0098 (0.40)	0.0053 (0.16)	-0.0141 (-0.46)	-0.0525 (-0.82)	0.0257 (0.76)	0.0251 (0.45)	0.0064 (0.34)
Belgium	0.0219 (0.87)	0.0217 (0.66)	-0.0483* (-1.65)	0.0255 (0.51)	0.0339 (0.95)	-0.0439 (-1.10)	0.0000 (..)
Germany	0.0000 (..)	0.0000 (..)	0.0000 (..)	0.0000 (..)	0.0000 (..)	0.0000 (..)	0.0000 (..)
Spain	0.1195*** (8.00)	-0.0981*** (-5.53)	-0.0195 (-1.20)	-0.1323*** (-4.12)	0.0243* (1.74)	0.1066*** (3.59)	0.0052 (0.63)
Finland	0.0591* (1.86)	-0.0211 (-0.54)	-0.0366 (-1.06)	-0.0209 (-0.33)	0.0141 (0.45)	0.0167 (0.29)	0.0000 (..)
France	0.0934*** (6.73)	-0.1341*** (-7.88)	0.0405** (2.53)	-0.0121 (-0.44)	0.0217* (1.65)	-0.0100 (-0.42)	0.0032 (0.41)
Greece	-0.0202 (-0.99)	-0.1957*** (-6.78)	0.2043*** (6.98)	-0.3108*** (-3.52)	0.1507** (2.40)	0.1240* (1.69)	0.0206 (0.76)
Ireland	0.0409 (1.12)	-0.0140 (-0.30)	-0.0342 (-0.82)	-0.0721 (-0.80)	0.0134 (0.32)	0.0505 (0.63)	0.0099 (0.33)
Italy	0.0358*** (2.63)	-0.2003*** (-11.47)	0.1591*** (9.14)	-0.1352*** (-3.69)	0.0350** (2.04)	0.1039*** (3.09)	-0.0035 (-0.54)
Netherlands	0.0417** (2.10)	0.0062 (0.24)	-0.0521** (-2.30)	-0.0853* (-1.69)	0.0880** (2.44)	-0.0040 (-0.10)	0.0097 (0.61)
Portugal	-0.0097 (-0.53)	-0.0428 (-1.64)	0.0524** (2.13)	-0.0755 (-1.36)	0.0205 (0.79)	0.0722 (1.36)	0.0000 (..)
Slovakia	0.0649* (1.77)	-0.1470*** (-3.40)	0.0831* (1.95)	-0.0396 (-0.52)	0.0000 (..)	0.0515 (0.70)	0.0100 (0.36)
Observations	10786	10786	10786	1953	1853	1953	1640

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## 5.7 Robustness Testing RQ2

This section presents the rationale and detail of the various robustness tests conducted for research question two (see Table 81 below). Alternative variables and methodology form part of these robustness checks, illustrated in appendices L – W, in order to check the reliability of the probit regressions used earlier in Tables 57 – 64. A detailed description of these tests, which are similar to those used in RQ1, is outlined in Chapter 4 (Section 4.8).

*Table 81 – RQ2 Robustness Tests*

Appendix	Test	Sample	Changes
L	Institutional Setting	Family-owned SMEs Solely owned SMEs	Replacement of corporate tax rate, inflation rate and GDP growth rate with 7 elements of institutional environment.
M	Institutional Setting	Family-owned SMEs Professionally managed SMEs	Replacement of corporate tax rate, inflation rate and GDP growth rate with 7 elements of inst. environment.
N	PIIGS Dummy	Family-owned SMEs Solely owned SMEs	Replacement of corporate tax rate, inflation rate and GDP growth rate with PIIGs sample
O	PIIGS Dummy	Family-owned SMEs Professionally managed SMEs	Replacement of corporate tax rate, inflation rate and GDP growth rate with PIIGs sample
P	OLS Specification	Family-owned SMEs Solely owned SMEs	Use of OLS instead of probit regression
Q	OLS Specification	Family-owned SMEs Professionally managed SMEs	Use of OLS instead of probit regression
R	Innovation Dummy	Family-owned SMEs Solely owned SMEs	Exclusion of the innovation variable
S	Innovation Dummy	Family-owned SMEs Prof. managed SMEs	Exclusion of the innovation variable
T	Wave Dummy	Family-owned SMEs Solely owned SMEs	Wave dummies introduced
U	Wave Dummy	Family-owned SMEs Professionally managed SMEs	Wave dummies introduced
V	Mature Firms Subsample	Family-owned SMEs Solely owned SMEs	Subsample of the oldest age category of firms (10+ years)
W	Mature Firms Subsample	Family-owned SMEs Professionally managed SMEs	Subsample of the oldest age category of firms (10+ years)

Beck et al., (2008b) contends that small firms are more sensitive to the institutional setting of countries than larger firms. Country specific factors warrant consideration in cross country studies (Hall et al., 2004; Canton et al., 2013; Holton et al., 2014; Mc Namara et al., 2017). These factors are more important for small firms by influencing the availability of finance for them (Jõeveer, 2013). Ampenberger et al., (2013) attests that small family-owned firms, because of their pronounced reliance on bank finance, are more impacted by their institutional environment. The first robustness test replaces the macroeconomic indicators employed earlier to analyse research question two in Tables 57 to 64 (corporate tax rate, GDP growth rate, and inflation rate) with proxies for the lending infrastructure deemed to capture the institutional environment. The components of the lending infrastructure which was developed by Berger & Udell (2006) include the information environment, legal environment, judicial environment, bankruptcy environment, social environment, tax environment, and the regulatory environment. Mc Namara et al., (2017) and Mc Namara et al., (2020) empirically assessed European SME firm leverage using a series of proxies for the lending infrastructure, finding several of the components are influential determinants of SME leverage. Comparable proxies to those employed by Mc Namara et al., (2017) and Mc Namara et al. (2020) are used here replacing the macroeconomic variables, and details of each proxy and source are set out in Table 82 below. The results are tabulated in appendix L (family-owned SMEs versus solely owned SMEs) and in appendix M (family-owned SMEs versus professionally managed SMEs).

*Table 82 – The Lending Infrastructure Controls*

<b>Institutional environment:</b>	<b>Proxy:</b>	<b>Source:</b>
Information environment	Credit Depth of Information Index	World Bank
Legal environment	Legal Right Index	World Bank
Judicial environment	Cost to Enforce Contracts	World Bank
Bankruptcy environment	Rate of Insolvency Resolution	World Bank
Social environment	Trust in General Population	Edelman Trust Barometer
Tax environment	Corporate Tax Rate	KPMG
Regulatory environment	Capital Regulatory Index	Barth et al. (2013)

The results, displayed in appendix L (Institutional Settings – family-owned SMEs in contrast to solely owned firms) compared to the findings for research question two (Tables 57 to 64) for all four sources remain broadly similar, with the following minor exceptions. Firstly, family firms are no longer found to be significantly more likely to need a bank credit line or bank loan and secondly, the same cohort appear more likely to be strongly rationed for other sources in contrast to sole owners. When comparing family-owned SMEs with professionally managed firms, the results, as displayed in appendix M, are broadly similar to those found earlier for research question two (Tables 61 to 64), with a few small exceptions. Family firms now appear less likely to receive the full bank loan sought, they are more likely to experience strong rationing by trade credit suppliers whilst, in contrast to professionally owned firms, family-owned SMEs are shown to be more likely to apply for other sources and less likely to be discouraged.

The results of the second robustness which is based on the PIIGS group, just as used for robustness tests in research question one earlier, are presented in appendices N and O. A dummy variable representing the distressed economies is given a value of 1 if the firm operates in the PIIGS group (Portugal, Italy, Ireland, Greece and Spain) and a value of 0 for firms in the other countries in the sample (Austria, Belgium, Germany, France, Finland, Netherlands, and Slovakia). These replace the macroeconomic variables used in Tables 57 to 64 namely, corporate tax rate, GDP growth rate, and the inflation rate of each country. The results of test N which compares family-owned SMEs with sole owners, show how family firms are somewhat more likely to receive all of the bank credit line sought and somewhat less likely to experience weak rationing which is similar to the earlier probit regression. In that probit regression (table 57) family firms were also shown to be significantly more likely to apply for and need a bank credit line in contrast to solely owned SMEs. Family-owned SMEs are somewhat less likely to self-ration for trade credit whilst they appear less likely to be

discouraged from applying for other sources in contrast to solely owned firms. When comparing family firms to professional owners (Appendix O) the results are broadly similar to those reported earlier in Tables 57 to 64.

The third robustness test employs an alternative methodology using a weighted ordinary least squares (OLS) regression in place of the probit regression. The results illustrated in appendices P and Q are very similar to the empirical results of the probit methodology as presented earlier in Tables 57 to 64.

The fourth robustness test relates to the sample (appendices R and S). Several firm level determinants are used in Tables 57 to 64, including a proxy for innovation. Approximately 35% of all firms in the sample can be classed as innovative (Tables 20 - 23), which means that respondents have reported that they launched a new or significantly improved product or service in the previous year. The sample demographics depicted in Tables 20-23 show how family-owned SMEs and professionally managed firms have a slightly higher innovator representation of 36% respectively, than sole owner innovation which is 33%. As this question is not asked of each firm, only 46% of observed cases have a response resulting in each sample falling by circa 46% (Tables 57 to 64) with the introduction of the innovation variable. Given this limitation the results are reported with the omission of the innovator variable. The results of appendix R are comparable to the results of the probit regressions displayed earlier (Tables 57 to 60) with some exceptions. Family-owned firms appear to be less likely to experience discouragement or strong rationing for both forms of bank finance whilst the same cohort are now more likely to apply, are less likely to be discouraged or rationed in any way for other sources in contrast to sole owner SMEs. The results of appendix S are comparable to those of the probit regressions (Table 61 to 64) except in the case of bank credit lines where family firms appear somewhat less likely to be discouraged and the same cohort are more likely to bank loan self-ration for cost reasons compared to professional owners.

The fifth robustness test uses the wave time periods from the final sample, which exclude the innovation question (waves, 11, 13 and 15). Wave 11 is the base for these tests. Very little difference is found in these checks (appendices T and U) compared to the earlier probit regressions used in Tables 57 to 64. The differences centre around the strength of significance and magnitude levels.

The final tests (appendices V and W) are concerned with mature firms (aged ten years and over). Again, the results are similar to the earlier probit regressions (Tables 57 to 64).

In summary, the results of the various robustness tests conducted for research question two suggest no material differences to those presented in Tables 57 to 64.

The next section summarises the overall findings of research question two.

## **5.8 Summary Research Question 2**

Family-owned SMEs in contrast to sole owners were shown to be more likely to apply for and need a short-term bank credit line. They were also more likely to receive all of the credit sought and less likely to experience weak rationing in contrast to solely owned SMEs. Equally, when compared to professionally managed firms, family-owned SMEs were more likely to apply for, need bank credit lines and even more so than compared to sole owners. Family-owned SMEs cannot be classed as discouraged borrowers as they did not appear to be discouraged from applying for bank credit lines compared to sole owners or professional owners. There was no evidence to suggest family firms were any more likely to be rationed compared to the other ownership forms. In terms of bank loans, family-owned SMEs were also more likely to apply for, need a bank loan and were unlikely to be discouraged or rationed in any way when compared to solely owned firms. Similar results were shown when family firms were contrasted with professionally managed SMEs for application likelihood, needing a bank loan, discouraged and both forms of rationing except in this case family-owned SMEs appeared unlikely to receive the full bank loan sought.

In terms of trade credit family firms were comparably more likely to apply and less likely to be discouraged in contrast to sole owner firms. There was no evidence to suggest any such differences between family-owned SMEs and professionally managed firms.

In respect of the category classed as other sources,<sup>41</sup> there appeared to be no differences between the need for this financing source when family-owned SMEs are compared to solely owned firms, except that family owners appeared more likely to experience weak rationing.

In contrast to professional managed firms, family firms were less likely to apply for these other sources, were more likely to be discouraged, less likely to receive it all and subsequently were more likely to be weak rationed.

The results illustrate how SMEs aged 5 – 10 years old were somewhat more likely to need bank credit lines and bank loans with strong evidence to suggest that they were more likely to receive all of the bank finance sought. The significance of firm age was particularly pronounced for older firms, i.e. those over 10 years of age as they were much more likely to receive all of the bank credit sought, in both forms, and statistically so at the one per cent level in contrast to the youngest SMEs. Unsurprisingly SMEs over 10 years old appeared somewhat less likely to experience strong rationing either for credit lines or bank loans in contrast to the youngest firms. Firm age was not shown to matter for trade credit application and outcomes likelihood for SMEs. Similarly, limited firm age evidence was shown for other sources, except for SMEs aged 5 – 10 years who appeared more likely to need other sources yet were also found more likely to be discouraged in contrast to the youngest firms and statistically so at the one per cent level.

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<sup>41</sup> Other sources comprises of other loans, leasing and hire purchase, factoring, grants, subordinated debt, participating loans, peer to peer lending, crowdfunding, equity capital and debt securities (ECB, 2017).

Firm size proved an important determinant of the likelihood of an application or outcome. Small and medium sized SMEs were more likely to apply for a bank credit line and loan, trade credit and other sources and were also shown less likely to be discouraged in contrast to micro firms and statistically so at the one per cent level. Notably, medium sized firms fared better in that they appeared more likely to receive the full amount of a bank loan sought and hence were less likely to be strongly rationed. In terms of strong rationing the evidence suggested that small and medium SMEs were less likely to have this experience in contrast to micro firms. The assertion is that micro firms fared worst across all four sources in that they appeared less likely to make an application and were more likely to be discouraged. Of those micro firms who applied they were less likely to receive the full credit sought from a bank and more likely to be strongly rationed compared to medium sized firms.

There was some evidence to show how exporters were somewhat more likely to apply for a bank loan, somewhat less likely to be discouraged and appeared somewhat less likely to get the full loan, whilst partial evidence was found that exporting SMEs were more likely to experience weak rationing. SMEs who export appeared somewhat more likely to experience weak rationing for trade credit. Export-oriented firms were somewhat more likely to apply for other sources, were somewhat more likely to be weakly rationed and thus were less likely to receive everything sought in contrast to non-exporters.

Innovators were more likely to apply for and need both forms of bank finance yet were somewhat less likely to receive the full amount sought in contrast to those who do not innovate. Similarly, innovative firms were somewhat more likely to apply for and need trade credit and other sources, although this evidence was not as strong as for bank finance. Innovative SMEs appeared more likely to experience weak rationing for bank credit lines compared to non-innovators while the evidence of such rationing was much weaker for bank loans and trade

credit. The innovator cohort did not appear to be discouraged from making an application for any of the four financing sources.

Firms experiencing trading distress were less likely to apply for a bank loan and trade credit, with some evidence to show how they were more likely to need all four sources, especially other sources. Unsurprisingly, this cohort were more likely to experience borrower discouragement for bank loans, trade credit and other sources than SMEs not in trading distress. Yet, there was little evidence to suggest such firms experiencing trading distress were any more likely to suffer weak or strong rationing for all four sources, except for partial evidence for bank loans and trade credit.

The results for financially distressed firms suggested these firms were more likely to apply for all four sources, need all of them but less likely to receive the full amounts sought. Hence, they were more likely to experience borrower discouragement and rationing (both strong especially so and weak), the latter statistically so at the one per cent level in contrast to unstressed SMEs.

More favourable macroeconomic conditions appeared synonymous with more applications for bank credit lines and loans whilst higher corporate taxes impacted an SME being more likely to receive the full bank loan sought.

In summary, family-owned SMEs appeared to be more likely to apply for and need bank finance, short-term credit lines and bank loans, in contrast to all other SMEs. Family owners were more likely to receive both bank sources in full when compared to solely owned SMEs yet not so in contrast to professionally managed firms, albeit the statistical significance was small. Family firms were found less likely to be discouraged borrowers and no more likely to be any more rationed in any way by banks when compared with other SMEs. Micro firms were shown to have the greatest difficulty in receiving bank finance, especially a bank loan. Equally, financial distress was associated with a firm needing finance through their application

likelihood but yet they were less likely to receive everything from banks and trade suppliers.

Finally, SMEs in Greece appeared to fare worst in contrast to German firms for the likelihood of application and outcomes for the four sources of finance. Figure 4 overleaf offers a summary of the main findings.

The next Chapter presents a discussion of the findings for research questions one and two as outlined in Chapter 4 and 5 above.

Figure 4 - RQ2 Summary

	Family-owned SMEs versus Sole Owners				Family-owned SMEs versus Professionally managed Firms				Family-owned SMEs versus all Other SMEs <sup>42</sup>			
Probability	Model 1 Applied	Model 3 Discouraged	Model 5 Strong Rationed	Model 6 Weak Rationed	Model 1 Applied	Model 3 Discourage	Model 5 Strong Rationed	Model 6 Weak Rationed	Model 1 Applied	Model 3 Discouraged	Model 5 Strong Rationed	Model 6 Weak Rationed
Bank Loans	0.0257***	-0.0061	-0.0148	-0.0059	0.0308***	0.007	0.0083	0.0194	0.0279***	-0.0027	-0.0087	0.0030
Bank Cr. Lines	0.0347***	-0.0019	-0.0063	-0.0246*	0.0595***	-0.0107	0.0007	0.0098	0.0420***	-0.0041	-0.0036	-0.0134
Trade Credit	0.0529***	-0.0344***	-0.0088	0.0212	0.0077	0.0053	0.0181	0.0148	0.0384***	-0.0219*	0.0017	0.0185
Other Sources	0.0089	-0.0032	-0.0171	0.0382**	-0.0175*	0.0214*	0.0012	0.0449**	0.0015	0.0049	-0.0112	0.0427**

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

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<sup>42</sup> Extract from Chapter 5 – Section 5.4



# **Chapter Six: Discussion**

## **6.1 Introduction**

This Chapter presents a summary and discussion of the findings for the two research questions as reported in Chapters 4 and 5 earlier.

The Chapter is presented in the following way. Section 6.2 discusses the likely use of the various sources of finance by family-owned SMEs in contrast to sole owner SMEs, and professionally owned SMEs as guided by research question one. This is followed in section 6.3 by a discussion on the findings for research question two. Section 6.4 then presents a summary and discussion of the overall findings of this study linking the key findings of both research question one and research question two.

The conclusion of the study then follows in Chapter 7.

## **6.2 RQ1 Discussion**

The empirical findings for research question one was reported in Chapter 4. This section summarises these findings and then presents a discussion in the light of the research question one, the hypotheses and the extant literature, while paying attention to the composition of the sample employed. More specifically, the likelihood of a family-owned SME using various sources of finance is analysed in contrast to solely owned firms, to professionally owned SMEs and to all other SMEs (both sole owners and professional owners combined). Furthermore, firm-level variables and macroeconomic controls form part of the evaluation.

Table 83 overleaf presents a summary of European family-owned SMEs likely usage of the eleven different sources of finance compared to both sole owner SMEs and professionally

managed SMEs. In addition, the table also includes a comparison of family-owned SMEs and all other SMEs (comprised of solely owned SMEs and professionally owned SMEs). The table highlights two results for each source of finance from Chapter 4; model 1 refers to the probit regression with firm ownership as the sole explanatory variable while model 9 is inclusive of all firm-level variables (firm age, size, sector, exports, innovation, trading distress and financial distress) and the macroeconomic controls (corporate tax rate, inflation rate and GDP growth rate specific to each country in the sample).

The findings and discussion focus on firm ownership which is the focus of the study.

Table 83 – Research Question 1 – Summary of Empirical Findings

	Family-owned SMEs versus Solely Owned SMEs		Family-owned SMEs versus Professionally managed SMEs		Family-owned SMEs versus all Other SMEs <sup>43</sup>
Probability of using:	Model 1	Model 9	Model 1	Model 9	Model 9
Retained Earnings	0.0629***	0.0416***	-0.0055	0.0192**	0.0355***
Grants & Subsidised Loans	0.0368***	0.0174***	0.0186***	0.0259***	0.0206***
Bank Credit Lines	0.0337***	0.0217***	0.0838***	0.101***	0.0465***
Bank Loans	0.0534***	0.0182***	0.0389***	0.0641***	0.0331***
Trade Credit	0.0659***	0.0355***	0.0078	0.0121*	0.0286***
Other Loans	0.0136***	0.0061	-0.0269***	-0.0206***	-0.0017
Debt Securities	0.0026**	0.0014	0.0019	0.0015	0.0016
Equity Capital	0.0025**	0.0025	-0.0148***	-0.0073**	-0.0006
Leasing & Hire Purchase	0.0220***	-0.0144**	-0.0369***	0.0140*	-0.0050
Factoring	0.0205***	0.0064*	-0.0169***	0.0041	0.0060*
Other Sources	0.0008	-0.0000	-0.0078***	-0.0103***	-0.0030

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

<sup>43</sup> Extract from Chapter 4, section 4.5

Most research treat SMEs as one homogenous group, yet studies have found that family firm financing is different due to their unique attributes (Ramalho et al., 2014; Gottardo & Moisello, 2014; Moritz et al., 2016). Research question one of this study seeks to analyse the sources of finance used by European family-owned SMEs compared to all other SMEs, notably solely owned firms and professionally managed SMEs.

The results of the probit regression show how family-owned SMEs are more likely to use a range of sources having included a number of controls (summarised in Table 83 on page 305). Their key sources include retained earnings, grants and subsidised bank loans, bank credit lines, bank loans and trade credit. The findings hold for each sample i.e. when family-owners are compared to sole owners, to professional owners and to all other SMEs.

Our evidence suggests that family-owned SMEs appear to favour the more traditional sources of finance in contrast to other SME ownership types. These findings which are discussed below under each of the sources of finance, are likely to reflect family-owned SMEs concern with retaining control and thus their financing is different than other SMEs.

#### **6.2.1      Retained Earnings**

Family-owned firms appear to use retained earnings more than all other SMEs and this likelihood persists having controlled for a range of firm level and country level variables.

This is consistent with Poutziouris (2001) evaluation of UK SMEs finding that family-owned SMEs rely heavily on retained earnings compared to other SMEs, the rationale being their aversion to a loss of control of the firm and thus use this source of finance consistent with the pecking order hypothesis. López-Gracia & Sánchez-Andújar (2007) examined medium sized SMEs in Spain employing both the trade-off theory and pecking order hypothesis to discern differences between family firms and non-family SMEs. They found that family firms differ

considerably to their non-family cohorts in terms of their reliance on internal resources, just as this study found for European family-owned SMEs, which they contend is to avoid financial distress and maintain control (López-Gracia & Sánchez-Andújar, 2007). Yet, in our study Spanish SMEs do not appear any more likely to use retained earnings in contrast to German firms, the base country (Chapter 4, single country sub-sample - section 4.7.1). We do find that medium sized family firms are much more likely to use retained earnings which is likely due to having time to accumulate earnings which can be used instead of external debt.

We show how more mature family-owned SMEs<sup>44</sup> are more likely to use this source, arguably for the same reason as indicated above and moreover, may also suggest a desire to have lower debt levels for future successional reasons. Our findings concur with the Swedish analysis of Bjuggren et al (2012) for older private family firms which they attest is due to their attitude to risk. Notably, their study also relied on firms self-selecting their ownership status, just as in this study.

The Spanish SME study of Ntoung et al., (2020) also finds that family firms are older with a longer time horizon, lower risk attitude, and generational continuity. They argue that family-owned firms have lower debt levels as they increase their pool of internal resources during profitable times and use these sources in place of debt when needed (Ntoung et al., 2020). Therefore, and similar to the findings of this study, family ownership is likely to result in family-owned SMEs relying more on retained earnings given their lower risk approach and stronger control orientation in contrast to other SMEs.

Golovko and Valentini, (2011) Spanish study and Ribau et al., (2017) Portuguese analysis attest to the positive association between exporter and innovative SMEs. They argue that these firms are more progressive, need more sources of finance and ultimately are more profitable. Our

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<sup>44</sup> Table 20 illustrates how family-owned SMEs are older – 84.5 per cent are aged 10 years or more compared to professionally managed firms at 82.2 per cent and solely owned firms at 78.7 per cent.

findings are consistent with these studies as both exporters and innovators are shown to use a more diverse range of sources, including retained earnings. Notably, family-owned SMEs who are exporters and innovators are found to use more of this source (Chapter 4, section 4.6.1). Moreover, German family firms are more likely to rely on retained earnings<sup>45</sup> consistent with (Schäfer et al., 2017) who stress the importance of this source for innovators. As family firms are older with a long-term focus, they are likely to realise the importance of being able to finance their export and innovation activities from a range of sources, notably retained earnings.

Family-owned SMEs are shown to have the largest composition of firms in the distressed countries (Chapter 3, Table 20 – ownership descriptive statistics) and are also shown to have more firms who suffer trading and financial distress in contrast to professionally owned SMEs, but not so compared to solely owned SMEs who are shown to experience greater levels of distressed firms (Chapter 3, Indices Table No. 24). As a result of the deteriorating trading conditions of family-owned firms, those deemed to be experiencing trading distress, are likely to rely on fewer sources, including retained earnings, due to difficulty accessing finance, particularly external debt. Similarly, SME family firms deemed to suffer financial distress are found less likely to use retained earnings (Chapter 4, section 4.6 – family-owned SME subsample). These results are as expected given the deterioration in their financial position, whilst their trading performance remains relatively intact, they are more likely to have exhausted internal resources and have a greater need for other sources of finance.

More favourable macroeconomic conditions improve the likely use of retained earnings by family-owned SMEs (Chapter 4, section 4.6) which reflects a more buoyant economy enabling firms to generate a pool of internal reserves for use by the business.

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<sup>45</sup> Chapter 4, Section 4.7

In summary, the use of retained earnings by family-owned SMEs in contrast to other SMEs are aligned with hypothesis 1 and the pecking order hypothesis affirming that their unique characteristics differentiate them to all other SMEs.

#### **6.2.2 Grants and subsidised bank loans**

Family-owned SMEs are more likely to use grants and subsidised bank loans when compared to all other SMEs and this holds for most of the controls and the robustness checks (Appendices A - K). Consistent with Öztürk & Mrkaic (2014) study of eleven Euro area countries (2012/2013) and later with Moritz et al., (2016) for 28 European Countries in 2013 who both contend that grants and subsidies play an important role in financing European SMEs but the greater use of this source is made by medium SMEs, notably family firms in the industrial sector, in contrast to micro firms and those in other sectors. Our study shows similar findings for medium sized family-owned SMEs and those in the industrial sector, which may reflect the European base of the studies, the similarity of the time period and importantly the recognition by the EU in making this source of finance available arising from the contribution made by SMEs, of which family-owned firms are the largest sub-set, in the European economy. On the other hand, it is a concern that micro sized SMEs, including micro family firms, do not appear to use grants and subsidised bank loans as much as their larger cohorts. Earlier, Daskalakis et al., (2013) contend that this lack of usage is due to an information gap for micro firms, which is tenable as these firms are less likely to have established a knowledge base of the range of sources available, or find the application process complex, or the terms and covenants, or may not yet have developed key relationships to guide them to the grants and subsidised bank loan options.

Family-owned SMEs have a larger representation in the PIIGS countries (distressed) compared to other SMEs<sup>46</sup>. This sub-sample of firms are more likely to use grants and subsidised bank loans likely due to difficulty accessing other sources of finance, especially bank debt. Our results are similar to those of Moritz et al., (2016) which serves to reinforce the importance of the availability of this source to SMEs with the greatest need during economic crisis.

Grants and subsidised bank loans are widely used in EU countries to support SMEs, especially innovative and exporting firms. This study shows how family-owned SMEs who have a strong representation in both innovation and export markets use more grants and subsidised bank loans, lending support to Greenaway et al., (2017) for UK manufacturing exporters who they contend are able to attract finance including this source than non-exporters. The importance of grants and subsidised bank loans to SMEs is also argued in the European analysis of Ferrando & Lekpek, (2018) who show how the use of grants and subsidised loans also helps alleviate access to other sources of finance, notably bank debt.<sup>47</sup> This argument is valid in our study as family exporting and innovative firms are more likely to use a variety of sources, including bank debt (Chapter 4, section 4.6). Family firms are dominant in the distressed countries, as noted above, and those of them who export or innovate are more likely to use grants, again recognising the role of EU supports. This point is further reinforced by the greater use made of this source by family-owned SMEs who are deemed to suffer financial distress.

In sum, the results affirm the proposed direction of hypothesis 2 by demonstrating the greater likelihood of a European family-owned SME using grants and subsidised bank loans in contrast to all other firms.

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<sup>46</sup> Table 20 – family-owned SMEs represent 55 per cent of the distressed sample in contrast to professionally owned SMEs 38 per cent and solely owned SMEs 34 per cent.

<sup>47</sup> Table 20 illustrates how circa 36 per cent of family-owned SMEs and professionally managed firms in the sample are deemed innovative, whilst approximately 33 per cent of solely owned SMEs are similarly categorised. Approx. 49 per cent of family firms are exporters in contrast to professionally owned firms circa 56 per cent and sole owners circa 38 per cent.

### **6.2.3 Bank credit lines**

Family-owned SMEs are more likely to use bank credit lines in contrast to all other SMEs, and these findings hold in all models and in the robustness tests (Appendices A - K).

Bank credit lines are aligned with short-term lending. Smaller and younger firms rely more on short term bank debt due mainly to information asymmetries (Berger & Udell 1998; Beck et al. 2008a). Most family-owned SMEs in our study are smaller with little difference evident in the sample for the youngest firm composition (Chapter 3 – Firm Ownership Table 20). Our findings lend support to these studies which suggests that family firms follow the pecking order hypothesis in their use of finance. Yet, more mature family-owned firms are more likely to use bank credit lines compared to younger firms which is likely a result of information asymmetry and a lack of collateral. Similarly, small firms and especially medium-sized family firms use more of this source compared to micro firms. This is consistent with Migliori et al., (2018) finding that Italian medium-sized family-owned SMEs<sup>48</sup> prefer short-term bank debt, reinforcing how the smallest and youngest cohort have information asymmetry issues, agency conflicts with lenders and lack of collateral. On the other hand, larger family-owned SMEs display a traditional approach to finance and avail of the flexibility of bank credit lines.

Family-owned SMEs are more likely to use bank credit lines for several reasons, including a preference for short-term debt, their inability to access longer-term debt and the perceived less risky nature of such credit. In particular, Poutziouris (2001) for UK family-owned SMEs found that these firms take a very conservative approach to their financing decisions and rely more on retained earnings and bank credit lines, the key factor that deters this cohort from using equity capital is their fear of losing control. Later, Colot & Croquet, (2009) contend that Belgian family-owned SMEs use more short-term debt than non-family firms and attest that

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<sup>48</sup> See single country sub-sample in section 4.7.

family firms are more willing to carry the risk of default rather than the risk of losing control of the firm.

Another possible explanation of family firm reliance on bank credit lines is found in the Finnish evidence of Lappalainen & Niskanen (2013) who attest that family-owned SMEs may be forced to rely on short-term sources in the absence of access to longer term bank finance.

The consistency in the use of the sources by family-owned exporters and innovative firms is again evident for bank credit lines, which they are more likely to use. The rationale is likely due to their greater working capital needs due to uncertainties of foreign market payments and higher risks linked to new products and services. Our findings lend support to the Belgian evidence of Maes et al., (2019) who contend that exporters have higher working capital needs and thus rely more on short-term bank debt than non-exporting SMEs. They also argue that exporters have better access to this source as they have the requisite collateral (Maes et al., 2019).

Family-owned firms in the PIIGS countries are more likely to use bank credit lines despite more difficult economic and financing conditions. Furthermore, financially distressed family firms are also more likely to use this source, which may confirm how the family-owned cohort have better relationships with lenders than other SMEs.

In sum, family-owned SMEs are more likely to use short-term bank credit lines for several reasons. This study infers that this source offers an avenue to access relatively flexible finance while not diluting firm ownership, mitigating the need for longer term finance which generally require onerous collateral. The results lend support to hypothesis 3.

#### **6.2.4 Bank Loans**

The results show that bank loans are a preferred source of financing for family-owned SMEs in contrast to all other SMEs and hold across for all controls and the robustness tests (Appendices A - K).

Our results partially concur with the Portuguese evidence of Serrasqueiro et al., (2012), the rationale being the long-term orientation and successional intent of family-owned SMEs. This study shows how family-owned SMEs are older<sup>49</sup> which likely makes them more concerned about the future successors of the business, yet this cohort may also have established better relationships with lenders in contrast to other SMEs. Access to bank loans is expected to be easier for the oldest firms as they have had time to establish a track record, provide collateral, reduce information asymmetry and reduce agency conflicts by establishing relationships with lenders in contrast to the youngest firms. Our results differ from Serrasqueiro et al., (2012) as Portuguese SMEs (family firms have the largest representation of Portuguese SMEs – Table 23, Chapter 3) appear no more likely to use bank loans than those in the base country (Germany). A possible explanation is in the period of 1999-2006 used by Serrasqueiro et al., (2012), a time of economic growth, falling interest rates, and low unemployment in Portugal compared to 2014-2017 employed by this study, where this country was slowly emerging from a severe economic and sovereign debt shock.

The significance of lender relationships finds support in the Spanish studies of Crespí & Martín Oliver, (2015) and Díaz-Díaz et al, (2016) who contend that family firms have better access to bank loans due to their long-term investment horizon, low risk attitude and greater concern for reputation than non-family firms. Our findings for the greater use of bank loans by Spanish family-owned SMEs are consistent with Díaz-Díaz et al, (2016).

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<sup>49</sup> Family-owned SMEs are typically more mature (85%) in contrast to professionally managed firms (82%) and sole owners (79%) (Table 20 – Sample Demographics, Chapter 3).

Our study shows how small and especially medium sized family-owned SMEs are more likely to use bank loans. The assertion is that the micro cohort (usually the youngest firms) have the greatest difficulty accessing this source, which is expected given their unproven track record, lack of collateral making agency issues more difficult to mitigate. Ramalho et al., (2014) asserts that Portuguese family firms' debt usage differs across the size (micro, small or medium) categories as does the Spanish small firm findings of Acedo-Ramírez et al., (2017).

Exporting and more especially innovative family-owned SMEs are more likely to use bank loans reflecting the reliance of these firms on a greater range of sources than other SMEs. The availability of bank finance is essential for family firm exporters and innovators to support their activities in foreign markets and in the research and development of new products and services. Traditional bank finance is essential to support the export activity of family firms and SMEs yet, studies including the French evidence of Benkraiem & Miloudi (2014) contend that this cohort have greater difficulty accessing bank debt due to the uncertainties of foreign markets and payments.

Family-owned SMEs appear to avail more of the tax shields of debt as they have a greater likelihood of using bank loans when more favourable macroeconomic conditions prevail. The benefits of tax shields are usually linked to more profitable firms. This may suggest that family-owned SMEs are more profitable than other SMEs, however, it is more likely that, given their risk averse attitude, they prefer debt to maintain control.

In summary, the results confirm that family-owned firms make greater use of longer-term bank loans compared to all other SMEs and this supports Hypothesis 4. These results affirm the relevance of the pecking order hypothesis and ability to mitigate agency issues in family-owned SME financing.

#### **6.2.5 Trade Credit**

Family-owned firms are by and large found more likely to use trade credit compared to all other SMEs. The results hold having accounted for robustness tests and in particular the OLS model (Appendix H).

This result is consistent with the Finnish evidence of Lappalainen & Niskanen, (2013) who contend that family-owned SMEs use more trade credit especially in the absence of other sources of finance, due to more pronounced agency problems with lenders. Trade credit is used by Finnish family firms as they may lack a more traditional alternative to supplier credit (Lappalainen & Niskanen, 2013). UK Family-owned SMEs have previously been shown to rely more on informal finance such as trade credit due in part to no additional collateral requirements and limited information sharing (Michaelas et al., 1999; Poutziouris, 2001). Our results find that European family firms use more non-negotiated sources, such as trade credit, yet this cohort also use considerably more short term and longer-term bank debt. Thus, trade credit is shown to be a complementary, rather than a substitute, source of finance for family-owned SMEs.

This study concurs with the European analysis of Bönte & Nielen (2011) who found that family-owned SMEs are more likely to rely on trade credit compared to sole owner firms, which they contend is due to family firms close ties with the community. The sample used by Bönte & Nielen (2011) is pan-European which captures a period before the sovereign debt crisis which suggests the family firm trade credit preference is generalisable.

Our study differs to Masiak et al., (2017) as we do not find that younger (2-5 years) family firms are more likely to use more trade credit either in the overall sample or in the distressed European countries<sup>50</sup>. This may be due to the composition of the samples – our overall sample

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<sup>50</sup> Distressed countries are Cyprus, Spain, Greece, Ireland, Italy, Portugal and Slovenia (Masiak et al., 2017).

comprises of 82 per cent aged ten years or more (family firms are the oldest represented by circa 85 per cent – Chapter 3, table 20) whereas the composition of Masiak et al. (2017) sample shows that 72 per cent of SMEs are in oldest category. On the other hand, small and more so medium-sized firms appear more likely to use trade credit compared to micro firms. Information asymmetry and lack of track record with suppliers are the likely reasons why micro firms rely less on this source. We do concur with the earlier European evidence of Moritz et al. (2016), who use comparable firm level variables to our study and they contend that the reason for the greater use of trade credit is the absence of bank debt for these firms. Their argument is credible, yet we find that small family firms use the more comparable bank credit line source in tandem with trade credit. This may suggest that there is a complimentary effect in place i.e. the use of one source signals quality to providers of the other. This complimentary effect concurs with the French SME evidence of Psillaki & Eleftheriou (2015), the European SME findings of Masiak et al., (2017) and Andrieu et al., (2018).

The European evidence of Moritz et al. (2016) and Masiak et al. (2017) report an industry effect for the greater likelihood of young family-owned SMEs in the trade sector using use more trade credit. Our findings show some evidence that family firms in the trade sector are more likely to use this source.

Exporting family firms are found to use a greater variety of sources than non-exporters, due to their need for shorter term finance to meet their working capital needs caused by longer periods from manufacture to customer payment for goods supplied. This finding concurs with the Belgian evidence of Maes et al. (2019). Innovative family-owned SMEs are also shown more likely to use this source which corroborates the European findings of Ferrando & Lekpek (2018). Just as with family firms who export, those who innovative are more likely to use a variety of sources to finance the uncertainties associated with research and development of new products/services.

In sum, trade credit is an important source of finance for family-owned SMEs. Thus the assertion is that family firms have easier access to trade credit. This overall likelihood of use appears to be determined by their size, their export orientation and by their innovative activities. Our results lend support to Hypothesis 5.

#### 6.2.6 Other Loans

Family-owned SMEs are found less likely to use other loans<sup>51</sup>, typically from family and friends, in contrast to other SMEs and this is robust in all models.

We do not find any evidence that family-owned SMEs use more finance from family and friends to fund their business than non-family-owned firms as contended in the Swedish analysis of Mohamadi (2012) who attests that this is due to these loans being less costly and easier to source. Yet, we do concur with Mohamadi, (2012) in that older family firms are less likely to rely on other loans in contrast to the younger cohorts. (Family-owned SMEs in this study are shown to be older – Chapter 3, firm ownership descriptive statistics Table 20). As expected, and consistent with the pecking order theory, the youngest family firms are more likely to rely on this informal source<sup>52</sup> at the earliest stage of their growth, as most other finance sources are not available to them for a myriad of reasons. These include more pronounced information asymmetry, agency issues and lack of collateral. Alternatively, the use of this source by family firms may be more attributable to their preference for other loans rather than seek external sources of finance.

Other loans are also associated with non-interference in control of the firm which makes this source particularly attractive for family-owned SMEs. This concurs with the Finnish evidence of Lappalainen & Niskanen, (2013) as family firms prefer other loans to prevent interference

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<sup>51</sup> The EC/ECB in the SAFE survey refer to other loans as loans ‘for example, from family and friends, a related enterprise or shareholders, excluding trade credit’. (ECB, 2017).

<sup>52</sup> See Chapter 4, section 4.6 0 family-owned SME sub-sample.

in the business. Innovative family-owned SMEs are found to use more of other loans which is not surprising given that they have greater difficulty accessing other sources. We concur with the evidence of Lee et al. (2015) who assert that innovative SMEs are more likely to be refused external debt, notably bank sources, than other SMEs.

Family firms have the largest representation in the PIIGS countries (Table 20) and the youngest cohort are found more likely to use other loans. It is likely that these firms use this source for the reasons outlined above, but also because the PIIGS countries suffered most from the economic and sovereign debt crisis (2007/2011) resulting in fewer finance options being available for them. As a corollary, family-owned SMEs who are deemed to suffer financial distress, albeit relatively few (Family firm sub-sample Table 52, Section 4.6), rely more on other loans, which may be due to their greater difficulty accessing other sources of finance, notably bank debt.

In summary, and in accord with the pecking order theory family-owned SMEs are more likely to rely on finance from family and friends in the early stages of growth, followed then by the use of debt, supporting their desire to maintain control. Thus, hypothesis 6 is not supported.

#### **6.2.7      Debt Securities**

Family-owned SMEs are found no more likely to use debt securities in contrast to other SMEs.

Our results concur with the European SME evidence of Moritz et al., (2016) and Ferrando et al., (2017) who suggest that debt securities are largely irrelevant for this cohort. As a corollary, debt securities are shown to have the lowest use in the descriptive sample (Chapter 4, Table 27) and its irrelevance as a source of finance is also found in the analysis of family-owned SMEs versus other SMEs (Table 51, Chapter 4).

The country of domicile is not found relevant for the use of debt securities by SMEs (Chapter 4, section 4.7), except for Italian, French and especially Greek firms compared to German SMEs. This is somewhat unexpected as Greece is predominantly a bank-based economy with small firms experiencing the worst impact of the economic and sovereign debt crisis. Despite the low use of this source overall by SMEs, Table 27 (Chapter 4 – composition of use of sources of finance) affirms that Greek SMEs are more likely to use debt securities.

The formation of the Capital Markets Union (CMU) plan (European Commission, 2019) may make debt securities a more relevant financing source for SMEs in future. However, the integration of this plan is at the early legislative stages (ECB, 2020) and is unlikely to have a meaningful effect on SME financing in the short-term. It is likely that this market-based source of finance, which currently belongs in the corporate financing arena, will face many hurdles before playing a significant role in the range of financing for the SME population.

In sum, debt securities are shown to have little relevance to the European SME funding landscape. Whether this represents underutilisation, an intentional aversion or lack of availability of this source of finance merits further research. Hypothesis 7 is thus supported.

#### **6.2.8      Equity Capital**

The results show how family-owned SMEs initially are marginally more likely to use equity capital in contrast to sole-owners, but this likelihood disappears when the controls are introduced. Family firms are found less likely to use this source compared to professionally owned SMEs and this effect holds in all models. The results of the robustness tests (Appendices A - K) are similar.

We find consistent with much of the prior studies that SMEs are reluctant to use or indeed may not have access to external equity capital (Poutziouris, 2001; Hall et al., 2004). Family-owners display a greater reluctance to use equity capital due to their pronounced control attitude

(González et al., 2013; Bornhäll et al., 2016). The Swedish evidence of Bornhäll et al., (2016) assert that micro and small family firms are considerably more reluctant to use equity capital, because of their aversion to interference and loss of control, compared to non-family firms. Our findings are partially consistent as we find that the micro cohort are less likely to use this source but not so in the case of small and medium-sized family-owned SMEs. The rationale for the lower use of equity capital by micro firms may lie in difficulty accessing this source. Alternatively, these firms could be expected to use more equity capital in the absence of access to other sources, notably debt.

At a country level we find that Slovakian SMEs are more likely to use equity capital in contrast to the more traditional bank-based economy of German firms (Single country sub-sample Chapter 4, section 4.7). Slovakia has a well-developed venture capital market (OECD, 2020) which is the likely reason why SMEs there differ in their use of equity capital, albeit private equity investment.

In terms of firm age, the youngest family firms are more likely to use equity capital in contrast to other SMEs. This may be due to a lack of availability of other sources, but the more plausible reason may be that young family firms are becoming more open to a greater variety sources of finance, particularly in the aftermath of the economic and sovereign debt crisis, notably the severe impact on bank finance.

Family firms who are exporters and innovators are again more likely to use equity capital, in keeping with these more progressive firms relying on a greater variety of sources.

In summary, equity capital is not expected to be a preferred source for privately held family-owned firms primarily due to their control orientation (Poutziouris, 2001; Ferrando et al., 2017). In this case some of the control variables are found to matter, notably family firm size,

age, export and innovation orientation. The results partially support Hypothesis 8 but only in comparison to professional owners.

#### **6.2.9 Leasing and Hire-purchase**

There is no compelling evidence to suggest that family-owned SMEs are less likely to use leasing and hire-purchase in contrast to other SMEs. Similar findings are found in the robustness tests (appendices A - K). There are, however, differences in the sub-samples as discussed below (Chapter 4, Sections 4.5, 4.6 and 4.7).

Our results differ to the Finnish evidence of Lappalainen & Niskanen (2013) who show how SME family-owned firms rely more on leasing and hire purchase in the absence of access to other sources, notably bank loans. We do not find any evidence of their greater likelihood of using this asset-based source of finance. We do, however, find that family-owned SMEs are likely to use bank loans more so than other SMEs. The reason why family-owned SMEs do not appear any more likely to use leasing and hire purchase may be due to their use of retained earnings and easier access to bank debt as they age in contrast to other SMEs.

We find that small family firms and more especially the medium-sized cohort appear more likely to use leasing and hire purchase which differs to the European evidence of Moritz et al., (2016) who found that micro firms rely more on this source. Our result while expected, given the asset-based nature of this source, may illustrate that the smallest firms have the greatest difficulty accessing finance.

We show how family firms in the construction and service sectors prefer to use leasing and hire purchase more than those in other sectors. Family firms in these sectors appear to use few sources, the notable exception being leasing and hire purchase. The results are comparable to European SME evidence of Masiak et al., (2017). Given the cyclical nature of the construction

industry and lack of tangible assets in the services firms the findings reflect the reality of their difficulty accessing the more traditional sources of finance.

Our study shows how family-owned exporters are more likely to use leasing and hire purchase but not so in the case of those deemed innovative. It is possible that this asset-based form of finance is not suitable or available to these innovative family firms given that much of their research and development is knowledge based.

German SMEs are much more likely to use leasing and hire purchase than firms in all other countries in the sample. This finding is consistent with Kraemer-Eis & Lang, (2012) who contend that there are significant country differences in the use of this source by European SMEs.

In summary, family-owned SMEs are no more likely to use leasing and hire purchase than other SMEs. Firm size, sector and the sub-sample of country differences (Section 4.7) are shown to matter more. Hypothesis 9 is not supported.

#### **6.2.10 Factoring**

Family-owned SMEs are shown somewhat more likely to use factoring when compared with sole-owners and with all other SMEs. These findings hold in the various robustness checks (Appendices A - K).

Our study finds that small and medium sized family-owned SMEs are more likely to use factoring which differs to the Italian evidence of De Giuli et al., (2011). We do, however, find in the country sub-sample that Italian SMEs are more likely to use factoring, and this is also evident in the small size cohort (Chapter 4, section 4.7). Micro family firms are shown the least likely to use factoring. These findings are expected as micro family firms are unlikely to have yet established a sufficient pool of quality invoices to avail of factoring. We show how family-owned SMEs operating in the industrial sector are more likely to use factoring in contrast to

those in other sectors. We concur with the UK evidence of Soufani (2002) who contend that SMEs rely more on factoring, notably those who are smaller and in the industrial sector, due to difficulty accessing preferred sources such as bank debt. It is also likely that the reason why these family firms use factoring rests more with the quality of their debtor book which is a prerequisite of this source of finance.

The evidence of Klapper (2006) covering 48 countries (including all European countries in our sample) shows how, due to the risky nature of overseas sales, exporters rely more on factoring to collect account receivables<sup>53</sup>. Our findings are consistent with their study as export-oriented family-owned SMEs are more likely to use factoring which is probably due to their greater working capital needs in contrast to non-exporters. Lappalainen and Niskanen, (2013) assert that the primary reason why Finnish family-owned firms use this source is their difficulty accessing other sources, notably bank debt. However, we do not find such evidence for the family firm cohort which may be due to the 2000-2005 timeframe employed by Lappalainen & Niskanen (2013) compared to our study which spans 2014-2017. Just as with many other sources of finance, innovative family firms appear to use factoring more than non-innovators, in accord with the European study of Moritz et al., (2016). The rationale for the preferred use of factoring by this cohort is likely to access more timely finance which this source provides.

SMEs in the PIIGS countries, of which family-owned firms have the largest representation (Table 23, page no. 153), are found to use factoring more than those in other countries. Berger & Udell, (2006) attest to the differences in the use of factoring across countries contending that this is caused by variations in the institutional setting and lending environment. We concur

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<sup>53</sup> The demographic information outlined in Chapter 3, Table 20, shows that circa 49 per cent of family-owned SMEs are exporters compared to approx. 38 per cent for solely owned firms whilst professionally managed firms account for 56 per cent.

given the difficulties encountered by small firms during and after the economic and sovereign debt crisis, particularly for those SMEs in the PIIGS countries.

In sum, family-owned SMEs are partially more likely to use factoring in contrast to other SMEs. The controls appear to matter more, notably family firm size, sector and the country setting. Thus, there is weak support for Hypotheses 10.

#### **6.2.11 Other Sources**

Other sources of financing in this analysis, which include crowdfunding, peer to peer lending and participating loans, currently have limited usage in the financing of SMEs. Our results show that the likelihood of such sources being used by family-owned SMEs in contrast sole owners and other SMEs is insignificant. Family firms are less likely to use other sources when compared to professionally owners. The suggestion is that family firms are much less likely to use other sources in contrast professional owners.

Our results concur with the European SME evidence of Moscalu et al., (2019) that whilst other sources of finance are a growth area, they only represent a niche gap with banks being the main provider of external finance for this cohort.

The youngest family firms appear to be more likely to rely on this source which is likely due to the changing approach of this cohort to consider a greater variety of sources of finance in contrast to the more traditional approach of more mature family-owned SMEs. Those family firms who are exporters and innovators are found to use more of this source, the rationale probably arises from their progressive approach and possibly also due to their preferred sources of finance not being as readily available.

Thus, Hypothesis 11 which anticipated no difference in the use of other sources by European family-owned SMEs and non-family SMEs is by and large supported. Notably, the

conservative nature of family-owned SMEs is verified by their reluctance to go beyond the more traditional sources, especially bank finance.

#### **6.2.12 Summary**

Our findings showed how family-owned SMEs were more likely to use the more traditional sources of finance in contrast to other SMEs. This preference stems from their motivation to maintain control of their business and minimise risk. It is important to understand how European family-owned SMEs are different in their financing preferences which serves to reinforce that the financing patterns of European SMEs are not homogeneous. The unique attributes prevalent in family-owned firms' financing choices were continually evident throughout the findings. The next section presents a summary and discussion of the findings for research question 2.

### **6.3 RQ2 Discussion**

The results of the hypotheses tests for research question two were displayed in Chapter 5 earlier. This section presents a summary and discussion of the empirical findings.

Table 84 overleaf presents a summary of European family-owned SMEs likelihood of applying for and the likelihood of the outcomes for four different sources of finance (bank loans, bank credit lines, trade credit and other sources). Models 1 to 3 represent the demand-side decisions. Model 1 is the likelihood of a firm applying for credit (applied), Model 2 represents the likelihood of a firm needing the credit (need) and Model 3 presents the likelihood of an SME being discouraged from applying for the credit (discouraged). Models 4 to 7 represent the supply-side decisions. Model 4 presents the likelihood of a firm being approved for the full amount sought (unrationed), Model 5 shows the likelihood of an SME being rejected for the credit sought (strong rationing), Model 6 relates to approval of some of the credit sought (weak rationing) and lastly, Model 7 represents the likelihood of a firm deciding not to avail of the credit as the price is too high. Family-owned SMEs are compared to solely owned SMEs,

professionally owned firms and to all other SMEs (combination of solely owned SMEs and professionally owned SMEs).

Table 84 overleaf summarises the findings as reported earlier in Chapter 5. In the interest of brevity models 2, 4 and 7 are excluded. Model 1 shows the results of the probit regression having controlled for firm ownership as an explanatory variable against the likelihood of applying for credit, whereas model 3 presents the likelihood of discouraged borrowers, model 5 illustrates the likelihood of strong rationing by the finance provider and finally, model 6 outlines the findings for weak rationing.

Table 84 – RQ2 Summary

Probability	Family-owned SMEs versus Sole Owners				Family-owned SMEs versus Professionally managed Firms				Family-owned SMEs versus all Other SMEs <sup>54</sup>			
	Model 1 Applied	Model 3 Discouraged	Model 5 Strong Rationed	Model 6 Weak Rationed	Model 1 Applied	Model 3 Discourage	Model 5 Strong Rationed	Model 6 Weak Rationed	Model 1 Applied	Model 3 Discouraged	Model 5 Strong Rationed	Model 6 Weak Rationed
Bank Loans	0.0257***	-0.0061	-0.0148	-0.0059	0.0308***	0.007	0.0083	0.0194	0.0279***	-0.0027	-0.0087	0.0030
Bank Cr. Lines	0.0347***	-0.0019	-0.0063	-0.0246*	0.0595***	-0.0107	0.0007	0.0098	0.0420***	-0.0041	-0.0036	-0.0134
Trade Credit	0.0529***	-0.0344***	-0.0088	0.0212	0.0077	0.0053	0.0181	0.0148	0.0384***	-0.0219*	0.0017	0.0185
Other Sources	0.0089	-0.0032	-0.0171	0.0382**	-0.0175*	0.0214*	0.0012	0.0449**	0.0015	0.0049	-0.0112	0.0427**

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

<sup>54</sup> Extract from Chapter 5 – Section 5.4

### **6.3.1 Applications and Outcomes for Bank Credit Lines**

We find that family-owned firms are far more likely to apply for short-term bank credit lines in contrast to all other SMEs. This finding holds regardless of family firms being compared to sole owners, professionally owned firms or other SMEs, in the sub-samples and in the various robustness tests (Appendices A – W). Earlier we found for research question 1 how family-owned SMEs were more likely to have used bank credit lines in the recent past.

Higher rates of application lend support to the US evidence of Bopaiah (1998) who attest that family firms have easier access to bank finance than non-family-owned firms. This is probably due to family-owned SMEs having a greater likelihood of applying and are more confident of a successful outcome. Our results differ to the SME analysis of Andries et al. (2016) who show how firms in distressed European countries are less likely to apply for bank finance, due to a contraction in the supply of bank credit. We find that SMEs in the PIIGS countries, of which family-owned SMEs have the largest composition<sup>55</sup> are much more likely to apply for credit lines from a bank (Appendices L - W). Medium-sized family firms are more likely to apply for bank credit lines, lending support to the Italian evidence of Migliori et al., (2018) who attest that these firms favour short-term bank debt. We also find that the sub-sample of Italian firms are more likely to use bank credit lines underpinning the greater likelihood of medium sized family firms using this source as illustrated earlier (Chapter 4, Section 4.5). Just as with family-owned innovative firms having a greater likelihood of using a range of sources, including bank credit lines (Chapter 4, Section 4.6) and in keeping with these findings, this cohort are more likely to make an application for bank credit lines. This concurs with the UK evidence of Lee et al. (2015) who show how innovators are more likely to apply for short-term bank credit. Our

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<sup>55</sup> Chapter 3 (Sample demographics – Tables 20-23) illustrates how the family firm representation in the distressed countries have a 57% representation in contrast to their representation of 37% in the other countries)

findings are most likely due to their greater need for bank credit to support the uncertainty in the development and launch of new innovative products and services. Our study shows how family firms who are deemed to suffer financial distress appear to make more applications for this source in contrast to other SMEs. This finding is as expected endorsing their greater need for finance to support ongoing business.

Our findings that family owners are more likely to need short-term credit from a bank are consistent with the Belgian evidence of Colot & Croquet, (2009), the UK analysis of Freel et al., (2012) and the Italian family firm evidence of Migliori et al., (2018). Given their greater likelihood of applying for bank credit lines, their heightened need for this source is expected. In keeping with the greater likelihood of innovative family-owned SMEs applying for bank credit lines, they also appear more likely to need this source. This finding is consistent with their likelihood of using a range of sources, including bank credit lines (Chapter 4) in contrast to non-innovative family firms. Moreover, this affirms their pronounced need for short-term credit lines to support the level of research and development finance needed to bring new products or services to market. Just as found earlier for their greater likelihood of using bank credit lines (Chapter 4), family firms who are financially distressed are more likely to need credit lines which is consistent with their greater likelihood of making an application.

Family-owned SMEs appear somewhat less likely to be discouraged from applying by banks which concurs with the UK evidence of Freel et al., (2012). We show how small and medium-sized family firms are less likely to be discouraged borrowers, similar to Ferri et al. (2020) for small Italian family firms. Interestingly, we do not find that Italian firms are any more discouraged compared to German SMEs (base). The greater likelihood of small and more so medium family firms being less discouraged is consistent with these firms establishing a track record resulting in the reduction of agency concerns with lenders which supports the pecking order hypothesis as this cohort are found to prefer debt after internal funds have been exhausted.

Country effects are found to impact the likelihood of discouragement. Greek SMEs appear much more likely to be discouraged borrowers in contrast to firms in all other countries. This concurs with Ferrando & Mulier (2015b) for Greek SMEs and firms in the other distressed countries in their sample (Greece, Italy, Portugal and Spain). Additionally, they contend that most of the discouraged borrowers are risky firms who would be rejected for a bank loan had they applied (Ferrando & Mulier, 2015b). We too show how SMEs in our distressed countries are more likely to be discouraged borrowers (Appendices N – O) which may be due to these firms having a higher risk profile due to trading and financial difficulties for them arising from the macroeconomic conditions prevalent in these countries. The timeframe of Ferrando & Mulier (2015b) analysis covered the period 2010-2014 thus overlapping our study which ranges from 2014 to 2017, albeit their findings probably capture a more difficult macroeconomic and lending environment. Whilst we find that those family firms experiencing trading and financial distress are more likely to be discouraged borrowers, we do not find such evidence for family firms domiciled in the PIIGS countries.

Family-owned SMEs aged 10 years and over are more likely to receive the full amount of a bank credit line sought, as are those classified as medium-sized. This finding is expected suggesting that this cohort have reduced information asymmetries and developed relationships with lenders resulting in easier access to bank credit lines compared to the youngest and smallest family firms. Moreover, these results reflect the greater likelihood of more mature and larger family-owned SMEs using credit lines from a bank as reported earlier in research question one (Chapter 4, Section 4.5). Interestingly, innovative family-owned SMEs are less likely to get the full amount requested from a bank affirming the UK analysis of Lee et al. (2015). This result is probably due to the heightened risks associated with costly and uncertain research and development. Family firms who are experiencing financial distress appear less

likely to be granted the full amount of a credit line reinforcing the higher risk profile of this cohort with bank lenders.

No bank rationing (strong or weak) difference is found for family firms compared to other SMEs which concurs with the Italian small family firm evidence of Ferri et al., (2020). Medium sized family firms are shown less likely to be bank rationed in contrast to the smallest cohort which affirms that these family firms have had more time to establish credible track records and thus access to bank debt is easier. This finding is consistent with the Italian evidence of Murro & Peruzzi (2019) who found that small family firms are more likely to be rationed by a bank due to higher opacity and ownership concentration levels in contrast to other firms. Whilst family firms are not found to be rationed in any form, we do find for all SMEs domiciled in the PIIGS countries that they are more likely to experience weak rationing, which is expected as these firms suffered much more difficult economic and financial issues in contrast to those in other countries.

In summary, the findings show how European family-owned SMEs have a greater appetite for bank credit lines in accord with their greater likelihood of using this source as reported in Chapter 4 earlier. Yet, the findings affirm that the smallest family firms are less likely to apply and those who do apply are less likely to receive full support for a bank credit line. This small-sized cohort are also more likely to be discouraged borrowers and rationed by banks for short-term credit lines. This concurs with the earlier findings that this cohort are least likely to use credit lines (Chapter 4). The results of research questions one and two support the likelihood of family-owned SMEs, irrespective of size, having easier access to bank credit lines, consistent with their pattern of using debt to maintain control of their business. The results lend support to hypothesis 12.

### **6.3.2 Applications and Outcomes for Bank Loans**

European family-owned SMEs, just as with bank credit lines shown earlier, are more likely to apply for and to need a bank loan in contrast to other firms. Our finding concurs with the Italian family firm evidence of D'Aurizio et al., (2015), which they attest is due to this cohort having fewer agency issues with bank lenders. The reason for this finding may also be due to family firms preferring bank debt to other sources, notably equity finance. Larger family-owned firms are more likely to apply and more likely to need a bank loan in keeping with research question one which shows how medium-sized family-owned SMEs are far more likely to use longer-term bank loans in contrast to micro firms. Our findings concur with the European evidence of Ferrando & Mulier (2015a) who argue that small firms chose not to apply for bank finance for fear of rejection. Just as with bank credit lines, micro family firms are less likely to apply for a bank loan which may be due to information asymmetries and a lack of confidence applying to a bank for financial support. The greater likelihood of an innovative family firm applying for a loan concurs with the UK SME analysis of Lee et al. (2015). Just as with bank credit lines, financial distress increases the likelihood of a family firm applying for and needing a long-term bank loan, which supports the earlier findings of the greater likelihood of these firms using a range of sources, including bank loans (research question one, Chapter 4). More favourable macroeconomic conditions, notably in terms of higher tax shields, increase the likelihood of an SME applying for and needing a bank loan. On the other hand, those firms, of which family-owned SMEs have the largest composition<sup>56</sup> in the PIIGS countries are found more likely to apply for and need a loan.

No evidence is found that family firms are any more likely to be discouraged from applying for a bank loan compared to other SMEs, which differs to the UK evidence of Freel et al.,

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<sup>56</sup> Family-owned SMEs have a representation of circa 55 per cent of the sample in the PIIGS countries compared to 38 per cent for professionally owned SMEs and 34 per cent solely owned firms (Table 20, Chapter 3)

(2012) who found that, due to their conservative approach, family firms are less discouraged by banks. We show how small and especially medium-sized family firms are less likely to be discouraged which is consistent with the assertion of Freel et al., (2012) that firm size is characteristic of risk and information asymmetry which diminishes as firms' grow. Just as with their greater application likelihood as shown earlier, it is likely that medium sized family firms have established a track record resulting in less bank discouragement. Firms in the PIIGS countries are, as expected, more likely to be discouraged borrowers, consistent with the European evidence of Mac an Bhaird et al. (2016) who contend that country factors affect discouragement levels due to weaker macroeconomic conditions.

Banks do not appear to be biased based on ownership in granting the entire loan sought as family-owned SMEs are found no different to other SMEs, which concurs with the UK evidence of Freel et al. (2012). However, as with the earlier findings which showed how older and larger family-owned SMEs are more likely to use bank loans compared to other SMEs (Chapter 4), this cohort are also more likely to be granted the full amount of their application. Whilst this reflects the establishment of a track record and reduction of agency concerns for bank lenders, this result also supports the Portuguese evidence of Ramalho et al., (2014) that the use of bank debt by family-owned SMEs varies across the size (micro, small or medium) categories. Moreover, given that family-owned SMEs are older (Table 20, Chapter 3), unsurprisingly these firms rely more on bank loans due to their risk aversion and long-term orientation. The findings show how the youngest and smallest firms are least likely to receive the full loan sought, consistent with the European evidence of Hashi & Toci (2010) and Öztürk & Mrkaic (2014). German SMEs appear more likely to be approved for the full bank loan sought (Chapter 5, Section 5.6) compared to firms in all other countries and especially those in the PIIGS nations. This finding is likely due to more robust macroeconomic conditions, stronger banks and the presence of the Mittelstand. Family firms who class themselves as

exporters and innovators are less likely to be fully approved for a bank loan which is somewhat intuitive given the increased risks associated with supplying product into foreign markets or launching new unproven products and services. Such findings are consistent with the UK analysis of Lee et al. (2015). Financially distressed family-owned SMEs are shown less likely to receive full bank loan support in contrast to other SMEs, reflecting lender concerns with the increased risks associated with this cohort. More favourable macroeconomic conditions, in terms of high tax shields and high growth levels improve the supply of bank loans for family-owned firms. Whilst the benefits of the tax shields are a possible reason for this finding, it is more likely due to the risk averse approach of this cohort to preferring debt than other sources of finance.

Family-owned SMEs do not appear any more likely to be rationed (both forms) for a bank loan in contrast to other SMEs, which concurs with the Italian evidence of Ferri et al. (2020) who contend that a close relationship with one bank results in small family firms being less rationed. Yet if these firms spread their bank relationships, they assert that the opposite holds true. Their overall findings, based on secondary data gathered in 2015, are similar to our results (Ferri et al., 2020). An earlier analysis of Italian firms by Murro & Peruzzi (2019), differs to our findings. They maintain that family firms are more likely to be rationed by banks due to higher opacity levels than other firms (Murro & Peruzzi, 2019). The results are consistent with the earlier findings for credit lines that the youngest and smallest family firms are more likely to be rationed (notably strong rationing). This is most likely due to information asymmetries and agency concerns most often associated with this cohort. Family firms deemed to suffer financial distress are found more likely to be rationed for a loan, consistent with their greater likelihood of being discouraged borrowers. Similar findings are found for other SMEs who are financially distressed. Banks are more likely to be more cautious in supporting this cohort, particularly for longer-term debt. Consistent with the European SME evidence of Demoussis

et al. (2017) we find that firms in the PIIGS countries, where family firms are especially prevalent, are more likely to be rationed for a bank loan. This result is expected reflecting the more difficult lending environment prevalent in these countries reducing the availability of bank credit, most notably longer-term credit.

Older family firms (over 10 years of age) are more likely to self-ration for cost reasons. This cohort are more likely to be discerning because of their conservative nature and their established usage patterns of other sources of finance, such as retained earnings.

In sum, family-owned SMEs are more likely to need and apply for a longer-term bank loan compared to other SMEs, but there is no evidence to suggest that they are any more likely to be discouraged or rationed in any form. Banks do not appear to favour family firms any more than other SMEs in granting the full loan amount. All lending decisions are found to be more influenced by firm age, size and levels of distress than by ownership. As a result, support for Hypothesis 13 is found.

### **6.3.3 Applications and Outcomes for Trade Credit**

Family-owned SMEs are more likely to apply for and need trade credit when compared with all other SMEs. The findings are compatible with research question one which illustrated how family firms are more likely to use trade credit. This evidence concurs with Poutziouris (2001) who asserted that their greater preference is likely due to there being no collateral sought for this source. Micro family firms are again found to be at a disadvantage as they appear less likely to make an application for trade credit which is possibly due to unproven track records with suppliers of this source. These results are consistent with the single country German evidence of Lawrenz & Oberndorfer (2018) who show how small vulnerable firms use less trade credit compared to larger firms. Exporting family-owned SMEs are more likely to apply for and need trade credit which may be due to their greater difficulty accessing bank credit (Riding et al., 2012; Benkraiem & Miloudi, 2014). It is also likely that this cohort apply for a

range of sources to satisfy the greater working capital needs of exporting products and services to foreign markets. Somewhat intuitively, financially distressed family firms and other SMEs are found more likely to apply and need trade credit, which may be easier to obtain than other sources, notably bank credit. SMEs in the PIIGS countries (family firms have the greatest representation in these countries, Table 20, Chapter 3) are found more likely to make an application and to need trade credit, which concurs with the analysis of McGuinness & Hogan (2014) who contend that Irish SMEs, substitute trade credit for bank finance in times of economic difficulties. Moreover, we also show how Irish firms are more likely to apply for and need trade credit.

Family-owned SMEs are no more discouraged from applying for trade credit in contrast to other SMEs. Just as with bank credit lines and loans, the likelihood of discouragement appears considerably lower for medium-sized family firms compared to micro firms. The reason is probably due to the ability of larger family firms establishing credible relationships with trade credit suppliers, who are then able to offer them the benefits of this source. Family firms who are deemed to suffer trading distress and financial distress are, as expected given their greater risk levels, more likely to be discouraged by trade credit suppliers.

There is no evidence that family-owned firms are any more likely to receive everything sought compared to other SMEs. Our finding concur with Andrieu et al., (2018) who attest that European SMEs are better at signalling their quality to trade credit providers. Financially distressed SMEs and especially family firms appear less likely to receive the full amount of trade credit requested. This finding suggests that these firms may have to use a larger range of sources as they are less likely to fully satisfy their needs from a few providers. We find that German firms are more likely to receive the full amount of trade credit requested compared to all other countries. This finding concurs with the German analysis of Lawrenz & Oberndorfer, (2018).

Our results show small and medium-sized family firms are less likely to be strongly rationed by trade credit providers compared to micro firms, consistent with the European analysis of Casey & O'Toole (2014) who argue that SMEs rejected for bank finance substitute the gap with trade credit. Similarly, our findings concur with the European evidence of Demoussis et al. (2017) who contend that the smallest firms are more likely to be trade credit rationed. This is likely due to micro family firms lacking a robust relationship with suppliers of this source. Just as with the discouragement findings earlier, likely due to greater uncertainty, family-owned SMEs deemed to suffer financial distress are more likely to be rationed for trade credit. In summary, family-owned SMEs are more likely to apply for and need trade credit because they view trade credit as non-interfering in the control of the business. Hypothesis 14 is supported.

### **6.3.4 Applications and Outcomes for Other Sources**

Family ownership is not found to impact the likelihood of applying for or needing other sources of finance<sup>57</sup> in contrast to other SMEs. Small and medium family firms are more likely to apply for other sources as are export-oriented and innovative family firms. The latter finding concurs with the Canadian SME evidence of Riding et al. (2012) who show how exporters are more likely to apply for a greater range of external financing, including debt and equity sources. Similarly, in the case of European innovators Ferrando & Lekpek (2018) assert that firms who use a wide variety of sources are more likely to invest in research and development of new products and services. These findings are likely due to the greater needs of exporting and innovative firms for a range of sources as they may not receive sufficient amounts of some sources, notably bank debt. Financially distressed SMEs and family firms have a greater likelihood of applying for and needing other sources likely due to their difficulty accessing bank credit, consistent with the European SME evidence of Ferrando et al., (2017).

We find that small and medium-sized family firms, just as with bank credit lines, loans and trade credit, are less likely to be discouraged borrowers. This finding is possibly due to these firms being better placed to share information with the providers of other sources compared to the smallest firms. Family firms who experience trading distress and financial distress are found more likely to be discouraged than their counterparts who are not stressed, but this evidence is no different to other SMEs.

Family-owned SMEs are somewhat less likely to be granted the full amount of other sources in contrast to other SMEs. Just as with the other three sources, medium-sized family firms are more likely to receive the funds sought from these suppliers. This finding is in keeping with lenders being more confident in granting monies to larger firms with proven track records. Yet,

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<sup>57</sup> Other sources of finance in research question two includes but is not limited to other loans, leasing and hire purchase, factoring, grants, subordinated debt, participating loans, peer to peer lending, crowdfunding, equity capital, and debt securities (SAFE questionnaire, ECB, 2014).

more mature family firms are less likely to receive the full amount of other sources compared to older professionally owned SMEs (appendix W - mature firm robustness test). Financially distressed family-owned firms and other SMEs are less likely to be approved in full for other sources just as shown for bank credit lines, loans and trade credit. These findings reflect the more cautious approach of providers to this cohort who display greater risk levels.

SMEs who are financially distressed (family firms have a greater composition of these firms than professionally owners, but less than sole owned SMEs<sup>58</sup>) are more likely to be credit rationed for other sources of finance, consistent with the European analysis of Casey & O'Toole (2014) who show how SMEs rejected for bank finance do not turn to other sources, namely debt securities, subordinated debt and equity capital. More recently, Gómez (2019) attests that SMEs, who are constrained for bank credit, are unlikely to replace the gap with other sources of finance.

In summary, little difference is found in the likelihood of European family-owned SMEs experiencing credit constraint in other sources in contrast to other SMEs. We do, however, find that the smallest family firms are most adversely impacted for both application likelihood and the likely outcomes of other sources, as do those who are financially distressed. Hypothesis 15 is hence not supported.

### 6.3.5 Summary

Our evidence showed how family-owned SMEs were more likely to apply for and need bank credit and trade credit in contrast to other SMEs. The findings showed how family firms differ in the likelihood of they applying for, needing, but with no greater likelihood than other SMEs of being discouraged or rationed by bank lenders or trade credit providers. The findings are

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<sup>58</sup> Chapter 3, Table 24 Indices Descriptive Statistics.

consistent with the results of research question one (Chapter 4) supporting the contention that the financing choices of European SMEs are not homogeneous.

The next section presents a summary and discussion of the overall results of this study.

## **6.4 Summary Discussion**

The results of research questions one and two were discussed and presented earlier in sections 6.2 and 6.3, respectively. In the interests of completeness, this section brings the two strands together by presenting a summary and discussion of the overall findings of the study. Thus, the discussion will draw attention to similarities and differences of the likely usage of various sources of finance by family SMEs linking the likelihood of applications, discouragement, rationing in both forms and in receiving full support when compared to solely owned firms, professionally owned SMEs and all other SMEs.

Family-owned SMEs were found to use a range of sources and most of these are the more traditional sources of finance, notably retained earnings, grants and subsidised bank loans, bank credit lines, bank loans and trade credit. Moreover, this likelihood of usage was corroborated by the greater likelihood of family firms applying for, needing, being less likely to be discouraged or rationed in any way for both forms of bank finance and trade credit when compared to all other SMEs. These findings confirmed that family firms prefer the sources of finance which do not risk their control of the business.

The evidence showed how family firms were less likely to use other sources<sup>59</sup> compared to other SMEs and these firms were less likely to apply for this source of finance. Those who do apply for other sources were more likely to be discouraged borrowers and ultimately less likely

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<sup>59</sup> Other sources of finance in RQ1 include, but not limited to, subordinated debt, participating loans, peer to peer lending, crowdfunding. In RQ2 additional sources also form part of the overall other sources of finance. These are other loans, leasing and hire purchase, factoring, grants, subordinated debt, participating loans, peer to peer lending, crowdfunding, equity capital, and debt securities (SAFE questionnaire, ECB, 2017).

to get the total sum sought. These findings likely signal the conservative and control-oriented nature of family-owned SMEs in their reluctance to pursue new sources of finance, such as other sources. The EU policy of promoting a more diverse range of sources of finance for SMEs appeared to be having little impact.

Older family-owned SMEs<sup>60</sup>, especially those over 10 years of age, were more likely to use retained earnings, grants and subsidised bank loans, bank credit lines and bank loans compared to the youngest firms. On the other hand, the youngest family firms (sample c. 12.3k) appeared somewhat more likely to use other loans, equity capital and other sources in contrast to their older cohorts. However, in research question two, the youngest family firms did not appear any more likely to apply for other sources of finance and those who do apply did not appear to receive it in contrast to older family firms<sup>61</sup>. This evidence points to problems of information asymmetry, inadequate track record, and collateral, resulting in the youngest family-owned SMEs having much greater difficulty accessing the various sources of finance.

The evidence showed how medium-sized family-owned SMEs were more likely to use ten of the eleven sources of finance more than the smallest firms (Table 52, Chapter 4 – sample size approx. 12.4k). The exception is debt securities. Medium sized SMEs were more likely to apply and be granted full support for a bank credit line, bank loan and trade credit whilst they were unlikely to experience discouragement or strong rationing. These results served to highlight how the financing landscape creates significant challenges for the smallest and the youngest family-owned SMEs.

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<sup>60</sup> Family-owned SMEs represent 26,918 of the overall ownership sample (Table 20, Chapter 3) of 58,479. Older family firms i.e., over 10 years of age, account for c. 84.5 per cent or 22,746. Family firms are older than all other SMEs.

<sup>61</sup> Other Sources of finance in research question two combine a number of sources which are treated separately in the first research question, which may account for the differences outlined above.

The cyclical nature of the construction sector was evident in research question one where these family firms were shown more likely to use bank credit lines, leasing and hire purchase in contrast to other SMEs. The use of very few sources by construction sector family firms did not translate to a greater application or outcomes likelihood in research question two. This finding is likely due to the uncertainties that are prevalent for family firms in the construction sector resulting in agency concerns for lenders which curtails the financing options available to them.

Family firms who are deemed exporters were more likely to use ten of the eleven sources of finance compared to other SMEs (Page 215 – sample circa 26.5k). Whilst there was some evidence found that family-owned exporters were more likely to apply for bank credit lines and loans, trade credit and other sources, they also appeared more likely to be rationed and less likely to receive the full support sought. This finding suggested that these family firms may be forced to use a greater range of sources as they are unlikely to be granted sufficient amounts by their preferred finance providers.

Similarly, innovative family-owned SMEs were more likely to use a greater range of sources, the exception, leasing and hire purchase, likely reflects the intangible nature of their assets. Innovative family firms were more likely to apply for the four sources of finance used in research question two yet were unlikely to be approved for everything requested. This is likely due to the costly research and development projects undertaken by this cohort which carry complexity and a high degree of uncertainty. Thus, even more so than exporters, those family firms classed as innovators were likely to spread their financing across a range of sources in the knowledge that their desired levels would not be fully met by any supplier.

The evidence showed how family firms experiencing trading distress use very few sources of finance compared to those who are not stressed. Moreover, given their difficult trading situation

this cohort were not likely to apply for any of the four sources<sup>62</sup> or indeed be approved for any monies sought. This finding is expected as family firms who are restricted by factors such as increasing costs and falling sales or profits are likely to have difficulty convincing lenders and indeed equity providers of their credit worthiness. The result also suggested that these family firms were unable to substitute trade credit for bank finance sources.

Financially distressed family firms and other SMEs appeared to use a greater variety of sources compared to SMEs who are not stressed. Notably, they were not found to use retained earnings, leasing and hire purchase or equity capital. This cohort were shown to have a greater application likelihood, need all four sources of finance (research question two), were more likely to be discouraged or rationed and significantly less likely to be granted everything sought by any of the providers. This evidence is likely due to the warning signals which arise from rising interest costs or a deteriorating debt to asset ratio of firms who are suffering financial distress, resulting in greater rejection levels (strong rationing) and partial approvals (weak rationing) in contrast to non-financially stressed firms. On the other hand, it is positive that these firms were shown more likely to use most sources of finance which suggests that they are being supported by lenders and equity suppliers.

More favourable macroeconomic conditions were found to impact a family firm's greater likely use of retained earnings, bank credit and grants and subsidised bank loans in contrast to other SMEs. These conditions also appeared to enhance the likelihood of a family-owned SME applying for and being fully supported by banks especially for a loan. This result illustrated either family firms' preference for the tax shields of debt or more likely that they pursued the safest possible sources of finance to safeguard control. Italian firms appeared to use a greater range of sources in contrast to SMEs in other countries. Moreover, Italian SMEs whilst less

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<sup>62</sup> The four sources of finance used in research question two are Bank Credit Lines, Bank Loans, Trade Credit and Other Sources.

likely to be granted everything sought by providers, they were more persistent in applying for the four sources of finance (RQ2). It is possible that this finding is the result of the economic and lending circumstances prevalent in Italy at the time of this study, in the aftermath of the adverse economic and sovereign debt problems which affected this European country more than most. Similarly, this Italian evidence held true for those firms operating in the PIIGS countries, where family firms are dominant (Table 20, Chapter 3). Yet, in overall terms firm ownership and the firm level variables offer far more explanatory power of the likely use and outcomes of the sources of finance.

In summary, the findings indicated that SME ownership matters as significant differences were found in the diversity of the sources of finance used by family-owned SMEs in contrast to other SMEs. This evidence of family firms' preference for the more traditional sources is corroborated by their greater application and outcomes likelihood compared to other SMEs. These results suggested that family-owned firms pursued a deliberate and traditional finance approach of internal resources and external sources, notably bank credit, consistent with the pecking order hypothesis, agency cost theory, financial life cycle theory with lesser evidence found for trade-off theory. The intent of family-owned SMEs to safeguard control and avoid risk sources of finance is affirmed.

Chapter 7 brings the study to a conclusion.

# **Chapter Seven: Conclusion**

## **7.1 Introduction**

The purpose of this Chapter is to present the key conclusions of the study. Firstly, the Chapter restates the research objective and the two research questions together with the salient conclusions. This is followed by a synopsis of the primary policy implications implicit to the empirical outcomes. Finally, the Chapter outlines the study's limitations and suggested areas for future research.

## **7.2 Research Objective and Research Questions**

The objective of this study is to evaluate the sources of finance used by European family-owned SMEs in contrast to solely owned firms, professionally owned SMEs, and other SMEs (sole owners and professionally owned firms combined) in the period spanning 2014/2017, considered a relatively stable economic time in Europe. Four well known capital structure theories, notably agency theory, the pecking order hypothesis, financial life cycle and trade-off theory are used as well as the theory of credit constraint as the study also seeks to establish the likelihood of credit constraint in access to finance being experienced by family firms compared to other SME owners. The primary objective is to analyse the financing of European family-owned SMEs given that they represent the largest subset of the overall SME population. Solely owned SMEs are the second biggest group, and the final group is made up of a number of different SME firms, classified as professionally owned SMEs. The latter group generally concentrate on professionally managing the business and making profits.

A range of firm level and country level variables are used. Firstly, the firm level controls include firm age, firm size, firm sector, exporting, innovation and two indices being proxies for trading distress and financial distress. The macroeconomic controls comprise of each country's corporate tax rate, inflation rate and GDP growth rate. The country setting has been

found to be important in the financing of the broader SME cohort and thus this study will test for country differences in the likely use of the sources of finance by family-owned SMEs. Moreover, the study will also establish if credit constraint in access to the various sources is more evident in family-owned SMEs in different countries. In addition, the components of the lending infrastructure which was developed by Berger & Udell (2006) are used in the robustness testing. More specifically the following research questions seek to address the research objective.

RQ1 - What sources of finance are employed by European family-owned SMEs in contrast to non-family SMEs?

RQ2 – What is the likelihood of European family-owned SMEs experiencing credit constraint in contrast to non-family SMEs?

### **7.3 Key Conclusions of the study**

The results suggest that firm ownership matters in determining their financing preferences, as there are significant differences between family-owned SMEs, solely owned firms, professionally owned firms, and other SMEs (sole owners and professionally owned firms). These differences are evident firstly in the sources of finance employed more by family-owned SMEs in contrast to other SMEs, notably retained earnings, grants and subsidised bank loans, bank credit lines, bank loans and trade credit, all of which are traditional sources of finance. The assertion is that family-owned SMEs rely more on these traditional sources stemming from their desire to minimise risk and maintain control of their business. Such financing preferences are consistent with the pecking order hypothesis, the agency and financial life cycle theories. The tenets of financial life cycle theory are found in younger family firms' reliance on other loans but as they mature, they turn to bank debt whilst those over ten years of age prefer retained earnings. Secondly, family-owned firms are more likely to apply for credit and to need

it but are less likely to be discouraged borrowers and are not rationed in any way for bank finance when compared to all other SMEs. This is due to family firms' preference for sources of finance which do not risk their control of the business and possibly better ability to minimise agency concerns and thus they establish better relationships with bank lenders. The prevalence of their likely use of retained earnings positions them well when they are going to the banks, as they appear to have a pool of retained earnings to resort to. Whilst the descriptive statistics illustrate how family-owned SMEs are older than all other SMEs in the sample, nonetheless their greater preference for using retained earnings holds even comparing older sole owners and professionally owned SMEs. Many of the firm level variables are found to impact the likely use of the sources of finance and likelihood of being credit rationed. Notably, micro firms (of which there are fewer family firms) rely on much fewer sources of finance, are more likely to be discouraged borrowers and experience credit rationing compared to larger SMEs. Furthermore, exporting SMEs, innovators and those who are financially distressed appear to use a more diverse range of sources in contrast to non-exporting firms, non-innovators and those SMEs who are not financially stressed. Firm level characteristics are found to have a greater impact on the likelihood of using the sources of finance and of the likelihood of credit constraint in contrast to the country level variables.

#### **7.4 Contribution of the Study**

The key conclusions of the study endorse a number of contributions to the literature.

The study is the first to evaluate the sources of finance employed by European family-owned SMEs in contrast to other SMEs, notably solely owned firms, and professionally owned SMEs, using data spanning the period 2014/2017. Most studies treat SMEs as homogeneous and fail to acknowledge the unique hallmarks of family-owned firms as a distinct group. The results show that family-owned SMEs are different to other SMEs in the range of finance sources used and in the likelihood of credit constraint. Thus, the study builds on existing SME finance

literature by shedding light on the sources used by family-owned SMEs, albeit the more traditional sources, when compared to other SME ownership groups. The study affirms applicability of the pecking order theory, agency theory and financial life cycle to their use of the sources of finance and in family-owned SMEs access to credit.

The importance of small family firms to the European economy is widely accepted, yet there is a dearth of multi-country analysis of these firms financing preferences, particularly in a period after the economic and sovereign debt crisis. Thus, the study provides evidence of the greater importance of family-owned SMEs in certain countries, notably Portugal, Ireland, Italy, Spain and Greece (the PIIGS). The study further assesses the sources of finance used by these PIIGS-domiciled family firms and their likelihood of being discouraged or credit rationed and asserts that their usage and likelihood of being credit constrained differs not only in terms of firm ownership but also across country settings.

This research is timely in the period after the European sovereign debt crisis and the formation of the Capital Markets Union (CMU) in 2014 (European Commission, 2019). The objective of CMU is to develop a single capital market for member countries to make a range of sources of finance more readily available for firms, particularly the SME population, which is dominated by family-owned firms. SME reliance on bank finance is well established and this study shows how this reliance is even more pronounced in family firms. Thus, while development of CMU is in its infancy it is likely to change the financing landscape of European firms, most notably for SMEs and the family-owned cohort within. The methodological contribution of the study builds on recent research which used the SAFE survey to analyse European SME financing patterns and credit constraint (Artola & Genre, 2011; Ferrando & Griesshaber, 2011; Drakos, 2013; Casey & O'Toole, 2014; Holton et al., 2014; Öztürk & Mrkaic, 2014; Ferrando & Mulier, 2015a; Moritz et al. 2016; Ferrando et al., 2017; Masiak et al., 2017; Andrieu et al., 2018; Masiak et al., 2019; Mc Namara et al., 2020).

Finally, this study contributes practically to firms, policy makers, banks and other finance providers acknowledging the importance of family firms to the European economy and the current dearth of multi country analysis in a period of continual economic difficulties. This research provides the opportunity to analyse finance usage and availability across countries and particularly for those firms domiciled in the PIIGS countries or those deemed to suffer either financial or trading distress. The EU consider one of the key challenges for family firms is financing which they demonstrate through numerous policy decisions (European Commission, 2015).

## **7.5 Policy Implications**

A number of policy implications are presented based on the results of the study.

Firstly, European family-owned SMEs are found to rely more on the traditional sources in contrast to other SMEs, notably bank finance. Their dependence on bank finance, more established banking relationships and reluctance to change highlights the importance of policy implications to develop and encourage the use of alternative sources given the decline of these institutions, particularly in Europe. The Capital Markets Union (CMU) seeks to address this issue by the development of new financing avenues, notably market-based sources, which are currently not available to SMEs, including family-owned firms (European Commission, 2019). Family-owned SMEs are marginally older than other SMEs and typically risk adverse, this is likely to present challenges to CMU given their reluctance to adopt a broader range of novel financing sources.

Secondly, the country differences in firm ownership as demonstrated by the greater prevalence of family-owned firms in the so called ‘PIIGS’ nations warrant more focused policies to support and develop these firms further. Policies should recognise too the finding that family firms are older than other SMEs and thus concerned with successional issues.

Thirdly, exporter and innovative SMEs are shown to use a variety of sources of finance. These progressive firms, given their contribution to the European economy, warrant more policy initiatives such as subsidised loans schemes or credit guarantee schemes to encourage banks to provide these firms with additional finance support. CMU is likely to be most beneficial to these firms who have demonstrated an appetite to use a greater range of financing sources than other SMEs.

Fourthly, based on the results surrounding those firms deemed financially distressed again implies that policy makers should make special provision for these SMEs to nurture them for the future. These firms are shown to use a greater range of finance sources because they appear to be unable to satisfy their needs from fewer providers. This latter point is demonstrated by their greater likelihood of being discouraged borrowers, credit rationed and unlikely to be granted everything sought.

Finally, micro SMEs, who represent the largest cohort of the sample appear to use the least number of sources and these firms experience credit rationing much more than small and medium sized SMEs. Notably, micro SMEs are found less likely to avail of grants and subsidised bank loans which signals that greater policy focus is warranted for these firms.

## **7.6 Limitations of the Research**

The research objective, research questions combined with the outcomes presented, together with the key contributions of the study, give rise to a number of limitations.

Firstly, whilst the EC/ECB Survey on the Access to Finance of Enterprises in the euro area (ECB, 2017) provides a vast amount of data spanning some 38 countries in Europe, the database is unbalanced. A representative sample of twelve countries are included in the sample covering the period 2014-2017 (6 waves) and as such may not fully speak for all countries or SMEs in countries outside Europe. In addition, SAFE, unlike other large databases, is relatively

new having commenced in 2009, where the results are self-reported by participating enterprises.

Secondly, the anonymous nature of the microdata eliminates all continuous data resulting in only nominal variables with dichotomous outcomes, and independent variables which are mostly categorical.

Thirdly, endogeneity primarily an issue of omitted variable bias and reverse causality, may give rise to concerns. The omitted variable bias is mitigated by the use of several models and controlling for many relevant variables which serve to minimise likely problems here. As the main explanatory variable is the family-owned SME ownership dummy and given that the ownership of a firm is considered stable over time (La Porta et al., 1999; Zhou, 2001) the issue of reverse causality is also minimised. As such, it can be reasonably expected that firm ownership leads the way to their financing preferences and not the other way round. Furthermore, it is accepted that while endogeneity is kept to a minimum it not eliminated from the study.

Finally, the study given the nature of the secondary data does not have the capacity to assess the role of the behavioural and motivational theories which have been found to play an important role in the decision making of family-owned SMEs.

## **7.7 Recommendations for Future Research**

The main limitations of the study outlined above point to a number of future research channels. Firstly, whilst the limitations of the SAFE survey are mentioned, there remains opportunity to explore the financing of family firms by extending the number of countries in the research sample to include more recent members of the EU, particularly those from Eastern Europe thus enabling a further analysis of financing sources and credit rationing. Furthermore, the time period may shed further light on changes over time given the repeated shocks that have occurred in the interim, including Brexit and Covid 19, projected by many to be the worst

global economic downturn. It would be useful to consider the sample in 5 years' time to establish how all these affect the financing preferences of family firms then. Moreover, with the ever increasing consolidation in European banking it would be useful to analyse the impact of this consolidation on the financing of European family firms.

Scope exists to fully explore the impact of the lending infrastructure (Berger & Udell., 2006) on the financing patterns and evidence of credit constraint of European family-owned SMEs across different country settings. Similar work was completed by McNamara et al. (2017) for the SME population but did not differentiate between ownership structures.

Family firms in this study are based on self-selection by SAFE participants. This approach to family firm ownership may lack the broader dimensions of firm management and firm governance. Avenues for future research could examine family firms in the context of the F-PEC scale (Astrachan et al., 2002), or elements of familiness (Habbershon & Williams, 1999) which cannot be assessed in an anonymised dataset.

Finally, as mentioned previously in the research limitations, this study employs a self-reported dataset, with an analysis of the demand-side. Further research could enhance the findings by exploring the supply-side rationale for the findings. Future research could also benefit from the changes in the financing preferences of family-owned SMEs arising from the ongoing evolution of the Capital Markets Union.

## 7.8 Conclusion

This Chapter has restated the research objective and research questions of the study and summarised the key findings, which enable the contribution of the study to be addressed. Next the policy implications are presented followed by a number of limitations. Finally, potential channels for future research are outlined.

Family-owned firms have many differences in contrast to other SMEs. These differences include their goals, their resources, their long-term horizon, their attitude to risk including new investments and their decision making which culminate in their financing pattern. The usage and availability of finance is fundamental to all firms and especially SMEs who have greater difficulty accessing finance. This research analyses the financing of family-owned SMEs and provides evidence that their financing pattern differs to other SMEs.

Given the importance of SMEs and more especially the largest cohort which is family firms to the European Economy, the research is of interest to academics and practitioners.

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# Appendices

## RQ1 Robustness Appendices

### RQ1 Robustness A – Institutional Setting

#### Retained Earnings

	<b>Family-owned SMEs v Solely owned SMEs</b>						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0381*** (7.40)	0.0395*** (7.59)	0.0389*** (7.47)	0.0368*** (7.02)	0.0396*** (6.70)	0.0391*** (6.63)	0.0403*** (6.84)
5-10 Years	0.0192* (1.66)	0.0196* (1.69)	0.0187 (1.61)	0.0189 (1.64)	0.0210 (1.60)	0.0219* (1.67)	0.0227* (1.73)
>10 Years	0.0349*** (3.54)	0.0353*** (3.58)	0.0347*** (3.52)	0.0353*** (3.59)	0.0357*** (3.22)	0.0353*** (3.18)	0.0354*** (3.19)
Small	0.0532*** (8.93)	0.0522*** (8.71)	0.0529*** (8.82)	0.0546*** (9.08)	0.0542*** (8.07)	0.0547*** (8.17)	0.0545*** (8.14)
Medium	0.1154*** (14.25)	0.1134*** (13.90)	0.1147*** (14.02)	0.1174*** (14.27)	0.1206*** (13.20)	0.1224*** (13.37)	0.1223*** (13.38)
Construction	0.0103 (0.98)	0.0101 (0.96)	0.0102 (0.98)	0.0106 (1.02)	0.0149 (1.25)	0.0158 (1.33)	0.0175 (1.49)
Trade	-0.0086 (-1.07)	-0.0091 (-1.13)	-0.0086 (-1.06)	-0.0078 (-0.97)	-0.0068 (-0.74)	-0.0045 (-0.50)	-0.0033 (-0.37)
Services	-0.0107 (-1.43)	-0.0115 (-1.53)	-0.0106 (-1.41)	-0.0094 (-1.25)	-0.0128 (-1.53)	-0.0113 (-1.36)	-0.0101 (-1.22)
Exporters	0.0259*** (4.67)	0.0262*** (4.72)	0.0261*** (4.70)	0.0262*** (4.73)	0.0281*** (4.49)	0.0287*** (4.59)	0.0301*** (4.81)
Innovators	0.0206*** (3.78)	0.0211*** (3.86)	0.0206*** (3.78)	0.0200*** (3.66)	0.0245*** (3.98)	0.0235*** (3.82)	0.0233*** (3.79)
Trading Distress	0.0038*** (2.80)	0.0038*** (2.82)	0.0041*** (3.03)	0.0037*** (2.72)	0.0026* (1.67)	0.0022 (1.43)	0.0019 (1.26)
Financial Distress	-0.0192*** (-11.24)	-0.0190*** (-11.05)	-0.0191*** (-11.09)	-0.0198*** (-11.44)	-0.0219*** (-11.37)	-0.0224*** (-11.61)	-0.0229*** (-11.87)
Cred. Depth Index	-0.0069** (-2.17)	-0.0097*** (-2.75)	-0.0067* (-1.84)	-0.0069* (-1.87)	-0.0082 (-1.50)	-0.0202*** (-3.48)	-0.1071*** (-6.91)
Legal Rights Index	0.0031* (1.81)	0.0057*** (2.99)	0.0083*** (4.16)	0.0053 (1.16)	0.0666*** (6.34)	0.0537*** (4.97)	
Enforce Contracts Cost		0.0025*** (3.15)	0.0025*** (3.17)	0.0014 (1.07)	0.0254*** (6.45)	-0.0099 (-1.39)	
Resolve Insolvency Rate			-0.0008*** (-3.84)	-0.0017*** (-3.83)	-0.0015*** (-3.33)	0.0000 (0.09)	
Gen. Pop. Trust Edelman				-0.0024** (-2.30)	0.0026** (2.06)	-0.0003 (-0.26)	
Corp Tax Rate					0.0186*** (6.45)	-0.0026 (-0.57)	
Capital Regulatory Index						-0.1225*** (-6.02)	
Observations	21921	21921	21921	21921	15158	15158	15158

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Grants and Subsidised Bank Loans

	Family-owned SMEs v Solely owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0189*** (4.46)	0.0128*** (2.98)	0.0126*** (2.94)	0.0109** (2.51)	0.0083* (1.72)	0.0079 (1.62)	0.0084* (1.73)
5-10 Years	0.0135 (1.39)	0.0109 (1.11)	0.0101 (1.03)	0.0105 (1.07)	0.0118 (1.09)	0.0129 (1.18)	0.0130 (1.19)
>10 Years	0.0142* (1.75)	0.0114 (1.38)	0.0108 (1.29)	0.0114 (1.37)	0.0161* (1.76)	0.0152* (1.65)	0.0150 (1.63)
Small	0.0386*** (7.74)	0.0433*** (8.65)	0.0436*** (8.72)	0.0451*** (8.98)	0.0469*** (8.39)	0.0472*** (8.45)	0.0468*** (8.39)
Medium	0.0571*** (8.83)	0.0667*** (9.98)	0.0675*** (10.07)	0.0699*** (10.32)	0.0743*** (9.84)	0.0755*** (9.97)	0.0751*** (9.93)
Construction	-0.0324*** (-3.68)	-0.0311*** (-3.59)	-0.0308*** (-3.57)	-0.0306*** (-3.55)	-0.0326*** (-3.41)	-0.0320*** (-3.37)	-0.0312*** (-3.28)
Trade	-0.0323*** (-4.53)	-0.0298*** (-4.23)	-0.0292*** (-4.16)	-0.0287*** (-4.10)	-0.0288*** (-3.69)	-0.0267*** (-3.43)	-0.0261*** (-3.35)
Services	-0.0381*** (-5.72)	-0.0341*** (-5.17)	-0.0335*** (-5.09)	-0.0325*** (-4.95)	-0.0333*** (-4.58)	-0.0320*** (-4.44)	-0.0315*** (-4.37)
Exporters	0.0196*** (4.29)	0.0182*** (4.00)	0.0182*** (4.01)	0.0181*** (3.98)	0.0178*** (3.48)	0.0181*** (3.54)	0.0186*** (3.63)
Innovators	0.0352*** (8.05)	0.0334*** (7.67)	0.0333*** (7.64)	0.0328*** (7.53)	0.0350*** (7.16)	0.0344*** (7.05)	0.0343*** (7.02)
Trading Distress	-0.0013 (-1.18)	-0.0016 (-1.39)	-0.0014 (-1.25)	-0.0017 (-1.50)	-0.0029** (-2.30)	-0.0032** (-2.50)	-0.0033*** (-2.60)
Financial Distress	0.0087*** (6.21)	0.0074*** (5.28)	0.0073*** (5.26)	0.0068*** (4.85)	0.0074*** (4.74)	0.0071*** (4.53)	0.0070*** (4.44)
Cred. Depth Index	0.0088*** (3.19)	0.0216*** (6.87)	0.0234*** (7.19)	0.0235*** (7.18)	0.0363*** (7.80)	0.0259*** (5.35)	-0.0106 (-0.79)
Legal Rights Index	-0.0135*** (-9.42)	-0.0114*** (-6.98)	-0.0089*** (-5.10)	-0.0099** (-2.53)	0.0510*** (5.65)	0.0513*** (5.60)	
Enforce Contracts Cost		0.0017** (2.37)	0.0019*** (2.70)	0.0018 (1.37)	0.0257*** (7.48)	0.0131** (2.37)	
Resolve Insolvency Rate			-0.0007*** (-3.65)	-0.0020*** (-5.28)	-0.0017*** (-4.28)	-0.0011*** (-2.58)	
Gen. Pop. Trust Edelman				-0.0015* (-1.82)	0.0027*** (2.77)	0.0018* (1.78)	
Corp Tax Rate					0.0187*** (7.40)	0.0114*** (3.19)	
Capital Regulatory Index						-0.0503*** (-2.91)	
Observations	22033	22033	22033	22033	15271	15271	15271

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Credit Lines

	Family-owned SMEs v Solely owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0153** (2.11)	0.0092 (1.26)	0.0071 (0.97)	0.0136* (1.87)	0.0119 (1.47)	0.0119 (1.47)	0.0123 (1.52)
5-10 Years	0.0541*** (3.31)	0.0514*** (3.14)	0.0459*** (2.81)	0.0450*** (2.75)	0.0452** (2.49)	0.0452** (2.49)	0.0452** (2.48)
>10 Years	0.0724*** (5.22)	0.0696*** (5.01)	0.0655*** (4.70)	0.0633*** (4.54)	0.0584*** (3.77)	0.0584*** (3.77)	0.0581*** (3.76)
Small	0.0664*** (7.84)	0.0713*** (8.39)	0.0747*** (8.82)	0.0693*** (8.17)	0.0698*** (7.48)	0.0698*** (7.48)	0.0697*** (7.47)
Medium	0.1152*** (11.08)	0.1232*** (11.76)	0.1285*** (12.30)	0.1211*** (11.56)	0.1177*** (10.27)	0.1177*** (10.27)	0.1176*** (10.26)
Construction	0.0480*** (3.33)	0.0487*** (3.38)	0.0497*** (3.46)	0.0484*** (3.37)	0.0520*** (3.27)	0.0520*** (3.27)	0.0525*** (3.30)
Trade	0.0230** (1.99)	0.0245** (2.12)	0.0271** (2.35)	0.0251** (2.19)	0.0322** (2.54)	0.0322** (2.53)	0.0325** (2.56)
Services	-0.0283*** (-2.64)	-0.0254** (-2.37)	-0.0216** (-2.02)	-0.0248** (-2.32)	-0.0221* (-1.89)	-0.0222* (-1.89)	-0.0218* (-1.86)
Exporters	0.0401*** (5.16)	0.0387*** (4.99)	0.0385*** (4.97)	0.0383*** (4.95)	0.0320*** (3.71)	0.0320*** (3.71)	0.0326*** (3.78)
Innovators	0.0284*** (3.69)	0.0262*** (3.40)	0.0246*** (3.21)	0.0270*** (3.52)	0.0202** (2.37)	0.0202** (2.37)	0.0201** (2.35)
Trading Distress	-0.0080*** (-4.20)	-0.0082*** (-4.33)	-0.0070*** (-3.69)	-0.0057*** (-2.98)	-0.0064*** (-3.04)	-0.0064*** (-3.03)	-0.0065*** (-3.09)
Financial Distress	0.0220*** (9.19)	0.0207*** (8.61)	0.0204*** (8.48)	0.0227*** (9.38)	0.0241*** (9.07)	0.0241*** (9.07)	0.0238*** (8.97)
Cred. Depth Index	-0.0110** (-2.44)	0.0012 (0.25)	0.0141*** (2.75)	0.0156*** (3.04)	0.0279*** (3.73)	0.0280*** (3.50)	-0.0094 (-0.45)
Legal Rights Index	-0.0139*** (-5.79)	-0.0026 (-0.97)	-0.0102*** (-3.61)	-0.0108* (-1.72)	-0.0112 (-0.78)	-0.0112 (-0.78)	-0.0174 (-1.18)
Enforce Contracts Cost		0.0112*** (9.98)	0.0111*** (9.88)	0.0107*** (5.50)	0.0105* (1.93)	0.0105* (1.93)	-0.0046 (-0.48)
Resolve Insolvency Rate			0.0024*** (7.87)	0.0006 (1.04)	0.0006 (1.03)	0.0006 (1.03)	0.0014* (1.90)
Gen. Pop. Trust Edelman				-0.0022 (-1.58)	-0.0022 (-1.26)	-0.0022 (-1.26)	-0.0035* (-1.88)
Corp Tax Rate					-0.0001 (-0.03)	-0.0001 (-0.03)	-0.0093 (-1.51)
Capital Regulatory Index							-0.0521* (-1.93)
Observations	22315	22315	22315	22315	15451	15451	15451

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

	Family-owned SMEs v Solely owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0156*** (2.68)	0.0151** (2.55)	0.0156*** (2.64)	0.0138** (2.33)	0.0154** (2.33)	0.0147** (2.23)	0.0156** (2.37)
5-10 Years	0.0282** (2.14)	0.0280** (2.12)	0.0294** (2.23)	0.0296** (2.25)	0.0293** (1.99)	0.0303** (2.05)	0.0299** (2.03)
>10 Years	0.0364*** (3.27)	0.0362*** (3.24)	0.0373*** (3.36)	0.0378*** (3.41)	0.0341*** (2.75)	0.0337*** (2.72)	0.0330*** (2.66)
Small	0.0796*** (11.77)	0.0801*** (11.79)	0.0793*** (11.66)	0.0806*** (11.83)	0.0809*** (10.81)	0.0811*** (10.86)	0.0809*** (10.83)
Medium	0.1706*** (18.65)	0.1715*** (18.56)	0.1698*** (18.38)	0.1720*** (18.52)	0.1799*** (17.66)	0.1814*** (17.80)	0.1812*** (17.80)
Construction	-0.0058 (-0.50)	-0.0057 (-0.49)	-0.0059 (-0.51)	-0.0055 (-0.48)	0.0006 (0.05)	0.0014 (0.11)	0.0028 (0.22)
Trade	0.0117 (1.24)	0.0118 (1.26)	0.0112 (1.19)	0.0117 (1.25)	0.0260** (2.52)	0.0284*** (2.75)	0.0293*** (2.85)
Services	-0.0255*** (-2.98)	-0.0252*** (-2.94)	-0.0262*** (-3.05)	-0.0253*** (-2.94)	-0.0195** (-2.09)	-0.0179* (-1.93)	-0.0169* (-1.83)
Exporters	0.0099 (1.57)	0.0097 (1.55)	0.0098 (1.56)	0.0098 (1.56)	0.0080 (1.13)	0.0087 (1.24)	0.0100 (1.43)
Innovators	0.0237*** (3.84)	0.0235*** (3.80)	0.0240*** (3.89)	0.0234*** (3.79)	0.0279*** (4.06)	0.0269*** (3.92)	0.0268*** (3.90)
Trading Distress	-0.0047*** (-3.06)	-0.0047*** (-3.07)	-0.0050*** (-3.29)	-0.0054*** (-3.51)	-0.0064*** (-3.74)	-0.0068*** (-3.95)	-0.0071*** (-4.12)
Financial Distress	0.0062*** (3.24)	0.0061*** (3.17)	0.0062*** (3.22)	0.0056*** (2.88)	0.0037* (1.74)	0.0032 (1.50)	0.0028 (1.29)
Cred. Depth Index	-0.0274*** (-7.64)	-0.0262*** (-6.64)	-0.0293*** (-7.25)	-0.0298*** (-7.36)	-0.0233*** (-3.84)	-0.0353*** (-5.51)	-0.1135*** (-6.70)
Legal Rights Index	-0.0014 (-0.71)	-0.0048** (-2.17)	-0.0025 (-1.04)	-0.0028 (-0.54)	0.0575*** (4.83)	0.0463*** (3.81)	
Enforce Contracts Cost		-0.0032*** (-3.37)	-0.0031*** (-3.28)	-0.0046*** (-2.76)	0.0188*** (4.20)	-0.0125 (-1.61)	
Resolve Insolvency Rate			-0.0007*** (-2.70)	-0.0027*** (-5.67)	-0.0026*** (-5.34)	-0.0011** (-2.02)	
Gen. Pop. Trust Edelman				-0.0008 (-0.73)	0.0041*** (2.91)	0.0013 (0.86)	
Corp Tax Rate					0.0178*** (5.61)	-0.0013 (-0.25)	
Capital Regulatory Index						-0.1104*** (-4.97)	
Observations	22180	22180	22180	22180	15354	15354	15354

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

	Family-owned SMEs v Solely owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0450*** (8.97)	0.0400*** (7.90)	0.0387*** (7.66)	0.0343*** (6.75)	0.0265*** (4.88)	0.0265*** (4.88)	0.0262*** (4.83)
5-10 Years	0.0104 (0.90)	0.0083 (0.71)	0.0050 (0.43)	0.0057 (0.49)	0.0046 (0.36)	0.0053 (0.42)	0.0054 (0.43)
>10 Years	0.0179* (1.80)	0.0159 (1.59)	0.0135 (1.33)	0.0151 (1.50)	0.0084 (0.77)	0.0081 (0.75)	0.0082 (0.75)
Small	0.0358*** (6.04)	0.0394*** (6.64)	0.0409*** (6.90)	0.0447*** (7.53)	0.0471*** (7.50)	0.0470*** (7.50)	0.0471*** (7.50)
Medium	0.0585*** (7.80)	0.0651*** (8.54)	0.0682*** (8.92)	0.0740*** (9.58)	0.0774*** (9.44)	0.0778*** (9.49)	0.0779*** (9.50)
Construction	0.0092 (0.86)	0.0100 (0.93)	0.0109 (1.02)	0.0116 (1.10)	0.0051 (0.45)	0.0057 (0.50)	0.0051 (0.45)
Trade	0.0293*** (3.38)	0.0313*** (3.63)	0.0332*** (3.89)	0.0348*** (4.10)	0.0213** (2.33)	0.0228** (2.50)	0.0225** (2.46)
Services	-0.0631*** (-8.48)	-0.0603*** (-8.14)	-0.0578*** (-7.87)	-0.0554*** (-7.59)	-0.0597*** (-7.61)	-0.0590*** (-7.54)	-0.0593*** (-7.57)
Exporters	0.0283*** (5.23)	0.0270*** (4.99)	0.0272*** (5.05)	0.0271*** (5.03)	0.0220*** (3.82)	0.0224*** (3.91)	0.0220*** (3.83)
Innovators	0.0286*** (5.41)	0.0269*** (5.09)	0.0260*** (4.94)	0.0242*** (4.61)	0.0224*** (3.99)	0.0218*** (3.89)	0.0219*** (3.90)
Trading Distress	-0.0062*** (-4.69)	-0.0064*** (-4.87)	-0.0056*** (-4.21)	-0.0064*** (-4.85)	-0.0061*** (-4.30)	-0.0063*** (-4.47)	-0.0063*** (-4.42)
Financial Distress	0.0043** (2.55)	0.0032* (1.95)	0.0031* (1.85)	0.0015 (0.90)	0.0012 (0.66)	0.0010 (0.56)	0.0011 (0.63)
Cred. Depth Index	-0.0137*** (-4.23)	-0.0039 (-1.10)	0.0050 (1.35)	0.0038 (1.01)	-0.0070 (-1.36)	-0.0149*** (-2.71)	0.0094 (0.68)
Legal Rights Index	-0.0114*** (-6.92)	-0.0046*** (-2.66)	0.0005 (0.28)	0.0435*** (11.70)	0.0734*** (8.29)	0.0765*** (8.51)	
Enforce Contracts Cost		0.0071*** (9.61)	0.0072*** (10.00)	0.0226*** (20.56)	0.0342*** (10.35)	0.0434*** (7.46)	
Resolve Insolvency Rate			-0.0016*** (-7.86)	-0.0030*** (-7.52)	-0.0027*** (-6.67)	-0.0032*** (-6.56)	
Gen. Pop. Trust Edelman				0.0044*** (5.21)	0.0069*** (6.41)	0.0077*** (6.66)	
Corp Tax Rate					0.0093*** (3.73)	0.0146*** (3.92)	
Capital Regulatory Index						0.0330* (1.91)	
Observations	22083	22083	22083	22083	15293	15293	15293

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Loans

	Family-owned SMEs v Solely owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0072*	0.0107***	0.0108***	0.0134***	0.0129***	0.0132***	0.0126***
	(1.80)	(2.67)	(2.70)	(3.32)	(2.92)	(2.98)	(2.85)
5-10 Years	-0.0398***	-0.0383***	-0.0380***	-0.0384***	-0.0367***	-0.0372***	-0.0371***
	(-3.83)	(-3.71)	(-3.69)	(-3.71)	(-3.27)	(-3.33)	(-3.33)
>10 Years	-0.0382***	-0.0364***	-0.0362***	-0.0370***	-0.0346***	-0.0344***	-0.0343***
	(-4.10)	(-3.95)	(-3.93)	(-4.00)	(-3.46)	(-3.45)	(-3.44)
Small	0.0065	0.0035	0.0033	0.0009	-0.0002	-0.0006	-0.0007
	(1.43)	(0.76)	(0.72)	(0.19)	(-0.05)	(-0.11)	(-0.14)
Medium	0.0324***	0.0269***	0.0266***	0.0230***	0.0227***	0.0220***	0.0220***
	(5.22)	(4.37)	(4.32)	(3.75)	(3.41)	(3.32)	(3.33)
Construction	0.0128*	0.0125	0.0126	0.0123	0.0114	0.0105	0.0098
	(1.68)	(1.63)	(1.64)	(1.59)	(1.34)	(1.23)	(1.15)
Trade	0.0210***	0.0205***	0.0204***	0.0197***	0.0189***	0.0178***	0.0174***
	(3.47)	(3.37)	(3.35)	(3.23)	(2.82)	(2.66)	(2.59)
Services	0.0144***	0.0131**	0.0130**	0.0119**	0.0113*	0.0107*	0.0103*
	(2.62)	(2.39)	(2.36)	(2.15)	(1.88)	(1.77)	(1.71)
Exporters	0.0088**	0.0096**	0.0096**	0.0095**	0.0062	0.0059	0.0051
	(2.05)	(2.24)	(2.24)	(2.22)	(1.32)	(1.25)	(1.08)
Innovators	0.0244***	0.0257***	0.0258***	0.0266***	0.0280***	0.0285***	0.0285***
	(5.87)	(6.18)	(6.20)	(6.39)	(6.14)	(6.25)	(6.26)
Trading Distress	0.0009	0.0011	0.0010	0.0015	0.0020*	0.0024**	0.0025**
	(0.86)	(1.01)	(0.95)	(1.47)	(1.77)	(2.05)	(2.18)
Financial Distress	0.0057***	0.0065***	0.0065***	0.0074***	0.0068***	0.0071***	0.0074***
	(4.38)	(4.96)	(4.97)	(5.61)	(4.75)	(4.95)	(5.13)
Cred. Depth Index	0.0095***	0.0016	0.0008	0.0015	0.0019	0.0103**	0.0507***
	(3.78)	(0.58)	(0.28)	(0.52)	(0.43)	(2.24)	(4.36)
Legal Rights Index	0.0087***	0.0082***	0.0048***	0.0058*	-0.0324***	-0.0244***	
	(6.34)	(5.53)	(2.97)	(1.67)	(-3.88)	(-2.85)	
Enforce Contracts Cost			-0.0006	-0.0006	0.0002	-0.0148***	0.0018
			(-0.92)	(-0.87)	(0.16)	(-4.70)	(0.35)
Resolve Insolvency Rate				0.0010***	0.0014***	0.0012***	0.0003
				(5.80)	(3.95)	(3.51)	(0.72)
Gen. Pop. Trust Edelman					0.0003	-0.0032***	-0.0015
					(0.33)	(-3.06)	(-1.32)
Corp Tax Rate						-0.0115***	-0.0014
						(-5.05)	(-0.41)
Capital Regulatory Index							0.0566***
							(3.82)
Observations	22096	22096	22096	22096	15277	15277	15277

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Debt Securities

	Family-owned SMEs v Solely owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0032** (2.27)	0.0022 (1.59)	0.0014 (1.00)	0.0005 (0.32)	0.0003 (0.23)	0.0001 (0.09)	0.0002 (0.17)
5-10 Years	0.0035 (1.20)	0.0031 (1.05)	0.0037 (1.35)	0.0039 (1.49)	0.0034* (1.86)	0.0036* (1.93)	0.0037* (1.95)
>10 Years	0.0034 (1.47)	0.0030 (1.26)	0.0039* (1.83)	0.0044** (2.18)	0.0050*** (3.93)	0.0049*** (3.81)	0.0049*** (3.84)
Small	-0.0000 (-0.02)	0.0008 (0.50)	0.0011 (0.66)	0.0020 (1.21)	0.0016 (1.13)	0.0019 (1.34)	0.0020 (1.34)
Medium	0.0014 (0.67)	0.0030 (1.30)	0.0030 (1.35)	0.0044* (1.85)	0.0030 (1.51)	0.0035* (1.68)	0.0034* (1.65)
Construction	0.0025 (0.86)	0.0024 (0.84)	0.0019 (0.66)	0.0023 (0.79)	0.0013 (0.50)	0.0013 (0.51)	0.0014 (0.57)
Trade	0.0038 (1.60)	0.0039* (1.67)	0.0020 (0.86)	0.0020 (0.89)	-0.0001 (-0.05)	0.0003 (0.15)	0.0004 (0.18)
Services	-0.0019 (-0.95)	-0.0015 (-0.77)	-0.0021 (-1.04)	-0.0018 (-0.88)	-0.0008 (-0.44)	-0.0005 (-0.28)	-0.0004 (-0.23)
Exporters	0.0011 (0.74)	0.0008 (0.54)	0.0001 (0.07)	0.0001 (0.09)	-0.0009 (-0.65)	-0.0008 (-0.58)	-0.0007 (-0.52)
Innovators	0.0043*** (2.93)	0.0039*** (2.67)	0.0037** (2.56)	0.0035** (2.44)	0.0031** (2.41)	0.0031** (2.36)	0.0030** (2.35)
Trading Distress	0.0002 (0.67)	0.0002 (0.59)	-0.0001 (-0.19)	-0.0004 (-0.97)	-0.0005 (-1.48)	-0.0005 (-1.63)	-0.0006* (-1.71)
Financial Distress	0.0024*** (4.88)	0.0022*** (4.45)	0.0020*** (4.15)	0.0017*** (3.55)	0.0016*** (3.66)	0.0015*** (3.51)	0.0015*** (3.44)
Cred. Depth Index	-0.0036*** (-3.80)	-0.0026** (-2.49)	-0.0036*** (-3.66)	-0.0042*** (-3.92)	-0.0044*** (-3.65)	-0.0055*** (-4.20)	-0.0155*** (-3.80)
Legal Rights Index	-0.0022*** (-4.35)	-0.0058*** (-8.25)	-0.0024*** (-3.15)	-0.0015 (-1.38)	0.0071*** (3.42)	0.0052** (2.34)	
Enforce Contracts Cost		-0.0027*** (-8.98)	-0.0014*** (-4.86)	-0.0002 (-0.70)	0.0034*** (3.95)	-0.0011 (-0.58)	
Resolve Insolvency Rate			-0.0004*** (-6.86)	0.0001 (1.12)	0.0002 (1.58)	0.0003** (2.42)	
Gen. Pop. Trust Edelman				-0.0002 (-1.05)	0.0004 (1.62)	0.0002 (0.78)	
Corp Tax Rate					0.0027*** (4.31)	-0.0001 (-0.11)	
Capital Regulatory Index						-0.0141*** (-2.66)	
Observations	21893	21893	21893	21893	15113	15113	15113

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Equity Capital

	Family-owned SMEs v Solely owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0018 (0.92)	0.0043** (2.20)	0.0042** (2.14)	0.0037* (1.89)	0.0053** (2.57)	0.0054*** (2.60)	0.0052** (2.53)
5-10 Years	-0.0139** (-2.18)	-0.0128** (-2.07)	-0.0132** (-2.13)	-0.0129** (-2.13)	-0.0138** (-2.14)	-0.0138** (-2.14)	-0.0140** (-2.18)
>10 Years	-0.0212*** (-3.68)	-0.0197*** (-3.57)	-0.0199*** (-3.58)	-0.0193*** (-3.52)	-0.0175*** (-3.00)	-0.0175*** (-3.00)	-0.0176*** (-3.02)
Small	0.0086*** (3.72)	0.0069*** (3.05)	0.0071*** (3.13)	0.0078*** (3.39)	0.0085*** (3.61)	0.0084*** (3.59)	0.0084*** (3.58)
Medium	0.0139*** (4.36)	0.0105*** (3.54)	0.0109*** (3.64)	0.0117*** (3.85)	0.0122*** (3.95)	0.0121*** (3.91)	0.0121*** (3.93)
Construction	0.0015 (0.39)	0.0013 (0.34)	0.0013 (0.34)	0.0013 (0.35)	0.0013 (0.31)	0.0012 (0.30)	0.0010 (0.25)
Trade	-0.0006 (-0.20)	-0.0007 (-0.25)	-0.0007 (-0.23)	-0.0005 (-0.17)	-0.0016 (-0.54)	-0.0017 (-0.59)	-0.0019 (-0.67)
Services	0.0024 (0.87)	0.0018 (0.65)	0.0020 (0.73)	0.0025 (0.92)	0.0045 (1.60)	0.0044 (1.58)	0.0042 (1.49)
Exporters	0.0049** (2.34)	0.0054** (2.57)	0.0053** (2.53)	0.0053** (2.56)	0.0052** (2.36)	0.0052** (2.36)	0.0048** (2.20)
Innovators	0.0047** (2.28)	0.0055*** (2.72)	0.0054*** (2.65)	0.0053*** (2.63)	0.0049** (2.30)	0.0050** (2.32)	0.0050** (2.33)
Trading Distress	0.0008 (1.57)	0.0009* (1.77)	0.0010* (1.88)	0.0008 (1.60)	0.0011** (2.05)	0.0011** (2.09)	0.0011** (2.13)
Financial Distress	-0.0010 (-1.50)	-0.0005 (-0.80)	-0.0005 (-0.83)	-0.0008 (-1.24)	-0.0009 (-1.28)	-0.0008 (-1.23)	-0.0008 (-1.13)
Cred. Depth Index	-0.0016 (-1.38)	-0.0068*** (-5.52)	-0.0059*** (-4.37)	-0.0057*** (-4.18)	-0.0064*** (-2.85)	-0.0057** (-2.45)	0.0062 (1.18)
Legal Rights Index	0.0069*** (9.08)	0.0069*** (9.28)	0.0077*** (9.68)	0.0022 (1.13)	-0.0017*** (-3.08)	-0.0017 (-0.38)	0.0016 (0.34)
Enforce Contracts Cost		0.0004 (1.63)	0.0002 (0.75)	-0.0017*** (-3.08)	-0.0032* (-1.85)	0.0023 (0.85)	
Resolve Insolvency Rate			-0.0003*** (-3.91)	0.0002 (1.41)	0.0003 (1.55)	0.0000 (0.01)	
Gen. Pop. Trust Edelman				-0.0001 (-0.25)	-0.0005 (-0.83)	0.0002 (0.30)	
Corp Tax Rate					-0.0011 (-0.94)	0.0024 (1.33)	
Capital Regulatory Index						0.0183** (2.53)	
Observations	21865	21865	21865	21865	15115	15115	15115

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Leasing & Hire-purchase

	Family-owned SMEs v Solely owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	-0.0219*** (-3.64)	-0.0076 (-1.27)	-0.0058 (-0.97)	-0.0021 (-0.35)	0.0044 (0.66)	0.0045 (0.67)	0.0040 (0.60)
5-10 Years	0.0134 (0.92)	0.0183 (1.28)	0.0218 (1.53)	0.0209 (1.47)	0.0319** (2.03)	0.0318** (2.03)	0.0320** (2.04)
>10 Years	-0.0144 (-1.17)	-0.0092 (-0.76)	-0.0071 (-0.59)	-0.0084 (-0.70)	0.0001 (0.01)	0.0001 (0.01)	0.0005 (0.04)
Small	0.1593*** (22.57)	0.1484*** (21.16)	0.1463*** (20.88)	0.1430*** (20.38)	0.1459*** (18.83)	0.1458*** (18.82)	0.1459*** (18.83)
Medium	0.2743*** (28.88)	0.2520*** (26.77)	0.2480*** (26.40)	0.2430*** (25.84)	0.2399*** (23.45)	0.2396*** (23.42)	0.2397*** (23.44)
Construction	0.0482*** (4.08)	0.0463*** (3.93)	0.0463*** (3.92)	0.0458*** (3.88)	0.0481*** (3.63)	0.0480*** (3.61)	0.0471*** (3.55)
Trade	-0.0022 (-0.24)	-0.0060 (-0.67)	-0.0074 (-0.82)	-0.0085 (-0.94)	-0.0115 (-1.15)	-0.0118 (-1.18)	-0.0124 (-1.24)
Services	0.0274*** (3.26)	0.0205** (2.44)	0.0181** (2.16)	0.0163* (1.94)	0.0161* (1.72)	0.0158* (1.69)	0.0153 (1.63)
Exporters	0.0322*** (5.02)	0.0358*** (5.65)	0.0362*** (5.72)	0.0361*** (5.72)	0.0359*** (5.07)	0.0358*** (5.06)	0.0350*** (4.94)
Innovators	-0.0016 (-0.25)	0.0033 (0.52)	0.0045 (0.72)	0.0058 (0.92)	0.0066 (0.93)	0.0067 (0.95)	0.0068 (0.96)
Trading Distress	-0.0027* (-1.73)	-0.0024 (-1.51)	-0.0032** (-2.07)	-0.0024 (-1.55)	-0.0023 (-1.34)	-0.0023 (-1.30)	-0.0022 (-1.24)
Financial Distress	-0.0085*** (-4.26)	-0.0055*** (-2.77)	-0.0053*** (-2.66)	-0.0039** (-1.96)	-0.0044** (-1.99)	-0.0043** (-1.96)	-0.0041* (-1.84)
Cred. Depth Index	0.0393*** (10.89)	0.0039 (0.97)	-0.0065 (-1.55)	-0.0063 (-1.52)	-0.0311*** (-4.77)	-0.0292*** (-4.21)	0.0118 (0.68)
Legal Rights Index	0.0366*** (17.98)	0.0300*** (13.38)	0.0249*** (10.33)	0.0180*** (3.25)	0.0087 (0.68)	0.0179 (1.35)	
Enforce Contracts Cost		-0.0075*** (-7.89)	-0.0074*** (-7.73)	-0.0166*** (-10.16)	-0.0201*** (-4.21)	-0.0024 (-0.29)	
Resolve Insolvency Rate			0.0015*** (5.91)	0.0013** (2.50)	0.0013** (2.50)	0.0004 (0.69)	
Gen. Pop. Trust Edelman				0.0017 (1.41)	0.0009 (0.53)	0.0028 (1.55)	
Corp Tax Rate					-0.0027 (-0.80)	0.0082 (1.52)	
Capital Regulatory Index						0.0595*** (2.60)	
Observations	22243	22243	22243	22243	15380	15380	15380

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Factoring

	Family-owned SMEs v Solely owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0061*	0.0072**	0.0077**	0.0056	0.0043	0.0041	0.0041
	(1.79)	(2.09)	(2.23)	(1.61)	(1.13)	(1.08)	(1.07)
5-10 Years	-0.0075	-0.0068	-0.0055	-0.0052	-0.0091	-0.0090	-0.0091
	(-0.83)	(-0.76)	(-0.62)	(-0.59)	(-0.91)	(-0.91)	(-0.91)
>10 Years	-0.0094	-0.0090	-0.0084	-0.0078	-0.0137	-0.0140	-0.0140
	(-1.21)	(-1.16)	(-1.10)	(-1.03)	(-1.60)	(-1.62)	(-1.62)
Small	0.0437***	0.0431***	0.0427***	0.0443***	0.0448***	0.0449***	0.0449***
	(11.18)	(11.03)	(10.97)	(11.28)	(10.44)	(10.44)	(10.44)
Medium	0.0807***	0.0791***	0.0779***	0.0807***	0.0769***	0.0772***	0.0773***
	(13.96)	(13.71)	(13.60)	(13.88)	(12.42)	(12.44)	(12.44)
Construction	-0.0231***	-0.0232***	-0.0234***	-0.0229***	-0.0274***	-0.0270***	-0.0271***
	(-3.19)	(-3.20)	(-3.21)	(-3.18)	(-3.38)	(-3.35)	(-3.36)
Trade	-0.0256***	-0.0259***	-0.0263***	-0.0254***	-0.0338***	-0.0332***	-0.0333***
	(-4.45)	(-4.48)	(-4.53)	(-4.41)	(-5.27)	(-5.20)	(-5.20)
Services	-0.0364***	-0.0371***	-0.0379***	-0.0365***	-0.0401***	-0.0396***	-0.0397***
	(-6.88)	(-6.98)	(-7.11)	(-6.89)	(-6.73)	(-6.67)	(-6.68)
Exporters	0.0197***	0.0199***	0.0199***	0.0201***	0.0208***	0.0210***	0.0209***
	(5.33)	(5.39)	(5.41)	(5.47)	(5.11)	(5.15)	(5.13)
Innovators	0.0158***	0.0160***	0.0164***	0.0156***	0.0176***	0.0174***	0.0174***
	(4.51)	(4.57)	(4.68)	(4.48)	(4.56)	(4.51)	(4.51)
Trading Distress	-0.0028***	-0.0028***	-0.0031***	-0.0035***	-0.0033***	-0.0034***	-0.0033***
	(-3.15)	(-3.15)	(-3.48)	(-3.95)	(-3.36)	(-3.42)	(-3.41)
Financial Distress	0.0056***	0.0058***	0.0058***	0.0051***	0.0051***	0.0050***	0.0050***
	(5.07)	(5.24)	(5.24)	(4.60)	(4.21)	(4.10)	(4.11)
Cred. Depth Index	-0.0200***	-0.0220***	-0.0243***	-0.0247***	-0.0332***	-0.0357***	-0.0332***
	(-9.57)	(-9.80)	(-10.62)	(-10.67)	(-9.40)	(-9.59)	(-3.67)
Legal Rights Index	0.0027**	0.0002	0.0032**	0.0090***	0.0223***	0.0228***	
	(2.37)	(0.17)	(2.39)	(3.14)	(3.29)	(3.27)	
Enforce Contracts Cost		-0.0025***	-0.0023***	0.0001	0.0052**	0.0063	
		(-4.45)	(-4.28)	(0.16)	(2.10)	(1.45)	
Resolve Insolvency Rate			-0.0008***	-0.0006**	-0.0007**	-0.0007**	
			(-6.03)	(-2.27)	(-2.40)	(-2.24)	
Gen. Pop. Trust Edelman				-0.0012*	0.0000	0.0001	
				(-1.78)	(0.02)	(0.13)	
Corp Tax Rate					0.0039**	0.0045	
					(2.16)	(1.61)	
Capital Regulatory Index						0.0035	
						(0.29)	
Observations	21956	21956	21956	21956	15170	15170	15170

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

	Family-owned SMEs v Solely owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	-0.0009 (-0.44)	0.0003 (0.16)	0.0005 (0.23)	0.0011 (0.51)	0.0005 (0.22)	0.0006 (0.24)	-0.0003 (-0.11)
5-10 Years	-0.0155** (-2.54)	-0.0145** (-2.41)	-0.0140** (-2.34)	-0.0142** (-2.37)	-0.0148** (-2.29)	-0.0151** (-2.34)	-0.0151** (-2.37)
>10 Years	-0.0183*** (-3.29)	-0.0173*** (-3.19)	-0.0170*** (-3.15)	-0.0171*** (-3.17)	-0.0159*** (-2.73)	-0.0159*** (-2.73)	-0.0157*** (-2.72)
Small	0.0121*** (4.75)	0.0110*** (4.36)	0.0108*** (4.27)	0.0103*** (4.09)	0.0115*** (4.16)	0.0115*** (4.15)	0.0116*** (4.21)
Medium	0.0115*** (3.60)	0.0097*** (3.11)	0.0093*** (3.01)	0.0087*** (2.85)	0.0097*** (2.89)	0.0095*** (2.84)	0.0096*** (2.89)
Construction	0.0101** (2.44)	0.0102** (2.42)	0.0102** (2.41)	0.0102** (2.40)	0.0094** (2.04)	0.0094** (2.03)	0.0081* (1.77)
Trade	0.0033 (1.19)	0.0031 (1.11)	0.0030 (1.06)	0.0030 (1.05)	0.0034 (1.09)	0.0032 (1.02)	0.0025 (0.79)
Services	0.0092*** (3.44)	0.0086*** (3.20)	0.0084*** (3.11)	0.0081*** (3.01)	0.0091*** (3.07)	0.0090*** (3.04)	0.0083*** (2.77)
Exporters	0.0049** (2.20)	0.0052** (2.34)	0.0052** (2.36)	0.0052** (2.36)	0.0038 (1.56)	0.0039 (1.58)	0.0027 (1.12)
Innovators	0.0100*** (4.63)	0.0104*** (4.81)	0.0105*** (4.86)	0.0106*** (4.92)	0.0113*** (4.69)	0.0113*** (4.72)	0.0117*** (4.91)
Trading Distress	-0.0007 (-1.27)	-0.0006 (-1.18)	-0.0007 (-1.32)	-0.0006 (-1.10)	-0.0007 (-1.12)	-0.0006 (-0.97)	-0.0004 (-0.67)
Financial Distress	0.0018*** (2.58)	0.0021*** (2.96)	0.0021*** (2.98)	0.0023*** (3.23)	0.0024*** (3.08)	0.0024*** (3.16)	0.0027*** (3.47)
Cred. Depth Index	0.0016 (1.22)	-0.0016 (-1.17)	-0.0027* (-1.88)	-0.0026* (-1.83)	-0.0077*** (-3.22)	-0.0054** (-2.11)	0.0401*** (6.43)
Legal Rights Index	0.0035*** (4.69)	0.0029*** (3.53)	0.0021** (2.36)	0.0021** (3.65)	0.0067*** (-0.75)	-0.0035 (1.61)	0.0079 (1.61)
Enforce Contracts Cost			-0.0008** (-2.27)	-0.0008** (-2.20)	-0.0003 (-0.51)	-0.0042** (-2.38)	0.0153*** (5.60)
Resolve Insolvency Rate				0.0002** (2.47)	0.0000 (0.03)	0.0000 (0.27)	-0.0012*** (-4.86)
Gen. Pop. Trust Edelman					0.0005 (1.26)	-0.0005 (-0.87)	0.0023*** (3.16)
Corp Tax Rate						-0.0030** (-2.36)	0.0089*** (4.93)
Capital Regulatory Index							0.0677*** (8.24)
Observations	21630	21630	21630	21630	14992	14992	14992

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

### RQ1 Robustness B – Institutional Setting

#### Retained Earnings

	Family-owned SMEs v Professionally owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0168** (2.29)	0.0170** (2.31)	0.0163** (2.21)	0.0158** (2.15)	0.0199** (2.41)	0.0201** (2.44)	0.0223*** (2.72)
5-10 Years	0.0299* (1.88)	0.0302* (1.89)	0.0298* (1.87)	0.0293* (1.84)	0.0340* (1.87)	0.0340* (1.87)	0.0346* (1.90)
>10 Years	0.0409*** (3.01)	0.0412*** (3.03)	0.0413*** (3.04)	0.0408*** (3.00)	0.0435*** (2.81)	0.0426*** (2.75)	0.0421*** (2.71)
Small	0.0613*** (8.03)	0.0608*** (7.92)	0.0616*** (8.05)	0.0631*** (8.24)	0.0609*** (7.06)	0.0609*** (7.08)	0.0607*** (7.06)
Medium	0.1136*** (12.67)	0.1126*** (12.44)	0.1151*** (12.70)	0.1173*** (12.89)	0.1227*** (11.93)	0.1233*** (11.99)	0.1235*** (12.02)
Construction	0.0031 (0.23)	0.0029 (0.22)	0.0032 (0.24)	0.0035 (0.27)	0.0052 (0.34)	0.0057 (0.38)	0.0087 (0.57)
Trade	-0.0063 (-0.63)	-0.0065 (-0.65)	-0.0052 (-0.52)	-0.0045 (-0.46)	-0.0048 (-0.42)	-0.0033 (-0.29)	-0.0017 (-0.15)
Services	-0.0201** (-2.22)	-0.0206** (-2.26)	-0.0186** (-2.05)	-0.0174* (-1.92)	-0.0215** (-2.11)	-0.0202** (-1.99)	-0.0183* (-1.80)
Exporters	0.0160** (2.25)	0.0161** (2.27)	0.0159** (2.25)	0.0162** (2.28)	0.0166** (2.06)	0.0171** (2.13)	0.0186** (2.32)
Innovators	0.0213*** (3.07)	0.0215*** (3.11)	0.0203*** (2.93)	0.0200*** (2.89)	0.0242*** (3.07)	0.0237*** (3.01)	0.0235*** (2.98)
Trading Distress	0.0054*** (3.13)	0.0054*** (3.14)	0.0061*** (3.53)	0.0058*** (3.38)	0.0056*** (2.83)	0.0054*** (2.74)	0.0051*** (2.60)
Financial Distress	-0.0284*** (-13.05)	-0.0282*** (-12.90)	-0.0283*** (-12.98)	-0.0289*** (-13.17)	-0.0333*** (-13.49)	-0.0335*** (-13.60)	-0.0340*** (-13.78)
Cred. Depth Index	-0.0007 (-0.17)	-0.0021 (-0.47)	0.0032 (0.67)	0.0027 (0.58)	0.0043 (0.62)	-0.0043 (-0.58)	-0.0893*** (-4.63)
Legal Rights Index	0.0017 (0.77)	0.0072*** (3.04)	0.0097*** (3.81)	0.0053 (0.94)	0.0053 (3.61)	0.0475*** (2.72)	0.0366***
Enforce Contracts Cost		0.0053*** (5.14)	0.0053*** (5.23)	0.0036** (2.09)	0.0200*** (4.05)	-0.0134 (-1.55)	
Resolve Insolvency Rate			-0.0007*** (-2.58)	-0.0018*** (-3.33)	-0.0017*** (-3.03)	-0.0001 (-0.15)	
Gen. Pop. Trust Edelman				-0.0020 (-1.64)	0.0014 (0.88)	-0.0015 (-0.89)	
Corp Tax Rate					0.0127*** (3.53)	-0.0072 (-1.30)	
Capital Regulatory Index						-0.1187*** (-4.75)	
Observations	16692	16692	16692	16692	11580	11580	11580

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Grants and Subsidised Bank Loans

	Family-owned SMEs v Professionally owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0224*** (3.89)	0.0207*** (3.59)	0.0207*** (3.58)	0.0203*** (3.51)	0.0217*** (3.36)	0.0219*** (3.40)	0.0230*** (3.58)
5-10 Years	0.0239* (1.91)	0.0215* (1.70)	0.0214* (1.68)	0.0210* (1.65)	0.0238* (1.71)	0.0246* (1.74)	0.0253* (1.79)
>10 Years	0.0275*** (2.62)	0.0242** (2.26)	0.0241** (2.24)	0.0238** (2.21)	0.0332*** (2.82)	0.0317*** (2.68)	0.0317*** (2.68)
Small	0.0375*** (6.03)	0.0420*** (6.79)	0.0421*** (6.82)	0.0435*** (7.04)	0.0433*** (6.29)	0.0436*** (6.35)	0.0431*** (6.28)
Medium	0.0528*** (7.40)	0.0616*** (8.48)	0.0623*** (8.55)	0.0645*** (8.80)	0.0687*** (8.31)	0.0696*** (8.43)	0.0692*** (8.37)
Construction	-0.0432*** (-4.10)	-0.0414*** (-3.98)	-0.0411*** (-3.96)	-0.0407*** (-3.93)	-0.0461*** (-4.00)	-0.0457*** (-4.01)	-0.0443*** (-3.88)
Trade	-0.0359*** (-4.30)	-0.0337*** (-4.08)	-0.0333*** (-4.03)	-0.0327*** (-3.98)	-0.0335*** (-3.63)	-0.0310*** (-3.37)	-0.0301*** (-3.28)
Services	-0.0374*** (-4.83)	-0.0335*** (-4.35)	-0.0329*** (-4.28)	-0.0319*** (-4.15)	-0.0324*** (-3.79)	-0.0307*** (-3.62)	-0.0298*** (-3.52)
Exporters	0.0271*** (4.72)	0.0258*** (4.51)	0.0259*** (4.52)	0.0259*** (4.53)	0.0262*** (4.06)	0.0263*** (4.08)	0.0270*** (4.19)
Innovators	0.0329*** (6.03)	0.0310*** (5.70)	0.0308*** (5.66)	0.0305*** (5.61)	0.0320*** (5.21)	0.0314*** (5.13)	0.0312*** (5.09)
Trading Distress	-0.0025* (-1.76)	-0.0025* (-1.78)	-0.0023* (-1.67)	-0.0025* (-1.82)	-0.0038** (-2.39)	-0.0041** (-2.55)	-0.0043*** (-2.69)
Financial Distress	0.0101*** (5.79)	0.0086*** (4.90)	0.0085*** (4.89)	0.0080*** (4.58)	0.0092*** (4.69)	0.0090*** (4.57)	0.0088*** (4.48)
Cred. Depth Index	0.0100*** (2.85)	0.0212*** (5.41)	0.0224*** (5.60)	0.0222*** (5.51)	0.0335*** (5.84)	0.0215*** (3.60)	-0.0270* (-1.65)
Legal Rights Index	-0.0128*** (-7.41)	-0.0111*** (-5.48)	-0.0083*** (-3.79)	-0.0085* (-1.79)	0.0636*** (5.73)	0.0657*** (5.76)	
Enforce Contracts Cost		0.0014 (1.61)	0.0017* (1.95)	0.0007 (0.42)	0.0287*** (6.83)	0.0126* (1.90)	
Resolve Insolvency Rate			-0.0007*** (-2.90)	-0.0023*** (-5.09)	-0.0021*** (-4.36)	-0.0013** (-2.51)	
Gen. Pop. Trust Edelman				-0.0006 (-0.57)	0.0044*** (3.75)	0.0032*** (2.61)	
Corp Tax Rate					0.0218*** (7.10)	0.0125*** (2.95)	
Capital Regulatory Index						-0.0674*** (-3.16)	
Observations	16774	16774	16774	16774	11649	11649	11649

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Credit Lines

	Family-owned SMEs v Professionally owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.1043*** (10.96)	0.1023*** (10.75)	0.1007*** (10.62)	0.1019*** (10.77)	0.1079*** (10.36)	0.1078*** (10.35)	0.1091*** (10.48)
5-10 Years	0.0541*** (2.60)	0.0496** (2.38)	0.0459** (2.21)	0.0475** (2.29)	0.0569** (2.46)	0.0569** (2.46)	0.0570** (2.47)
>10 Years	0.0578*** (3.24)	0.0522*** (2.92)	0.0500*** (2.80)	0.0513*** (2.88)	0.0514*** (2.60)	0.0518*** (2.61)	0.0511*** (2.58)
Small	0.0643*** (6.30)	0.0717*** (7.02)	0.0744*** (7.33)	0.0695*** (6.82)	0.0619*** (5.51)	0.0618*** (5.50)	0.0617*** (5.48)
Medium	0.0984*** (8.67)	0.1099*** (9.62)	0.1161*** (10.21)	0.1092*** (9.55)	0.1042*** (8.26)	0.1040*** (8.24)	0.1041*** (8.25)
Construction	0.0416** (2.46)	0.0429** (2.54)	0.0438*** (2.61)	0.0424** (2.53)	0.0416** (2.23)	0.0415** (2.23)	0.0430** (2.31)
Trade	0.0275** (2.12)	0.0299** (2.31)	0.0335*** (2.60)	0.0315** (2.45)	0.0417*** (2.92)	0.0412*** (2.88)	0.0419*** (2.93)
Services	-0.0316*** (-2.68)	-0.0275** (-2.33)	-0.0226* (-1.93)	-0.0261** (-2.23)	-0.0218* (-1.69)	-0.0221* (-1.71)	-0.0212 (-1.64)
Exporters	0.0461*** (5.08)	0.0445*** (4.91)	0.0445*** (4.93)	0.0438*** (4.85)	0.0346*** (3.45)	0.0345*** (3.43)	0.0355*** (3.53)
Innovators	0.0239*** (2.67)	0.0209** (2.33)	0.0183** (2.05)	0.0195** (2.19)	0.0126 (1.26)	0.0127 (1.28)	0.0125 (1.25)
Trading Distress	-0.0030 (-1.35)	-0.0031 (-1.38)	-0.0013 (-0.57)	-0.0004 (-0.19)	0.0003 (0.11)	0.0003 (0.14)	0.0002 (0.06)
Financial Distress	0.0208*** (7.41)	0.0186*** (6.59)	0.0181*** (6.43)	0.0200*** (7.08)	0.0199*** (6.37)	0.0200*** (6.39)	0.0197*** (6.29)
Cred. Depth Index	-0.0197*** (-3.58)	-0.0048 (-0.81)	0.0086 (1.42)	0.0109* (1.81)	0.0270*** (3.12)	0.0299*** (3.23)	-0.0229 (-0.96)
Legal Rights Index	-0.0189*** (-6.93)	-0.0039 (-1.27)	-0.0116*** (-3.49)	-0.0134* (-1.89)	-0.0266 (-1.62)	-0.0335** (-2.01)	
Enforce Contracts Cost		0.0141*** (10.69)	0.0137*** (10.31)	0.0127*** (5.66)	0.0075 (1.20)	-0.0130 (-1.23)	
Resolve Insolvency Rate			0.0021*** (5.99)	0.0002 (0.22)	0.0001 (0.12)	0.0012 (1.40)	
Gen. Pop. Trust Edelman				-0.0020 (-1.29)	-0.0031 (-1.56)	-0.0049** (-2.33)	
Corp Tax Rate					-0.0040 (-0.90)	-0.0163** (-2.40)	
Capital Regulatory Index						-0.0731** (-2.40)	
Observations	16978	16978	16978	16978	11771	11771	11771

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

	Family-owned SMEs v Professionally owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0638*** (8.51)	0.0636*** (8.47)	0.0638*** (8.50)	0.0634*** (8.45)	0.0676*** (8.16)	0.0682*** (8.26)	0.0700*** (8.48)
5-10 Years	0.0310* (1.83)	0.0305* (1.79)	0.0310* (1.82)	0.0307* (1.80)	0.0356* (1.87)	0.0363* (1.90)	0.0364* (1.90)
>10 Years	0.0442*** (3.06)	0.0436*** (3.01)	0.0438*** (3.03)	0.0435*** (3.01)	0.0453*** (2.79)	0.0440*** (2.71)	0.0431*** (2.65)
Small	0.0841*** (10.41)	0.0850*** (10.48)	0.0846*** (10.43)	0.0859*** (10.57)	0.0846*** (9.41)	0.0849*** (9.47)	0.0846*** (9.44)
Medium	0.1512*** (15.87)	0.1527*** (15.86)	0.1516*** (15.73)	0.1536*** (15.86)	0.1571*** (14.64)	0.1585*** (14.78)	0.1587*** (14.79)
Construction	-0.0311** (-2.26)	-0.0309** (-2.24)	-0.0311** (-2.25)	-0.0307** (-2.23)	-0.0320** (-2.10)	-0.0310** (-2.04)	-0.0291* (-1.91)
Trade	0.0118 (1.07)	0.0121 (1.10)	0.0115 (1.04)	0.0121 (1.10)	0.0229* (1.86)	0.0257** (2.09)	0.0266** (2.18)
Services	-0.0416*** (-4.26)	-0.0410*** (-4.20)	-0.0418*** (-4.27)	-0.0408*** (-4.16)	-0.0391*** (-3.62)	-0.0370*** (-3.44)	-0.0357*** (-3.33)
Exporters	0.0078 (1.03)	0.0075 (0.99)	0.0075 (0.99)	0.0077 (1.01)	0.0037 (0.43)	0.0045 (0.53)	0.0057 (0.68)
Innovators	0.0244*** (3.31)	0.0240*** (3.26)	0.0245*** (3.32)	0.0242*** (3.27)	0.0288*** (3.48)	0.0278*** (3.36)	0.0274*** (3.32)
Trading Distress	-0.0063*** (-3.41)	-0.0063*** (-3.40)	-0.0066*** (-3.56)	-0.0068*** (-3.68)	-0.0078*** (-3.76)	-0.0082*** (-3.94)	-0.0085*** (-4.08)
Financial Distress	0.0082*** (3.57)	0.0079*** (3.42)	0.0080*** (3.46)	0.0075*** (3.21)	0.0065** (2.51)	0.0061** (2.35)	0.0058** (2.23)
Cred. Depth Index	-0.0259*** (-5.77)	-0.0239*** (-4.95)	-0.0259*** (-5.27)	-0.0266*** (-5.40)	-0.0301*** (-4.16)	-0.0448*** (-5.85)	-0.1126*** (-5.67)
Legal Rights Index	-0.0026 (-1.13)	-0.0054** (-2.02)	-0.0028 (-0.99)	-0.0019 (-0.30)	0.0721*** (5.12)	0.0649*** (4.56)	
Enforce Contracts Cost	-0.0025** (-2.14)	-0.0023** (-1.97)	-0.0062*** (-3.05)	0.0224*** (4.22)	-0.0028*** (-4.87)	-0.0036 (-0.41)	
Resolve Insolvency Rate	-0.0006** (-2.12)	-0.0030*** (-5.19)	-0.0028*** (-4.87)	-0.0015** (-2.24)			
Gen. Pop. Trust Edelman		0.0010 (0.77)	0.0069*** (4.25)	0.0045*** (2.60)			
Corp Tax Rate			0.0216*** (5.80)	0.0059 (1.05)			
Capital Regulatory Index					-0.0954*** (-3.69)		
Observations	16903	16903	16903	16903	11738	11738	11738

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

	Family-owned SMEs v Professionally owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0176** (2.43)	0.0158** (2.17)	0.0150** (2.06)	0.0139* (1.91)	0.0067 (0.86)	0.0069 (0.88)	0.0058 (0.74)
5-10 Years	-0.0026 (-0.16)	-0.0058 (-0.35)	-0.0075 (-0.46)	-0.0080 (-0.49)	-0.0070 (-0.39)	-0.0069 (-0.39)	-0.0067 (-0.38)
>10 Years	0.0007 (0.05)	-0.0026 (-0.18)	-0.0034 (-0.24)	-0.0038 (-0.26)	-0.0077 (-0.50)	-0.0084 (-0.54)	-0.0077 (-0.50)
Small	0.0389*** (5.04)	0.0438*** (5.70)	0.0446*** (5.85)	0.0481*** (6.32)	0.0442*** (5.45)	0.0442*** (5.45)	0.0443*** (5.46)
Medium	0.0451*** (5.25)	0.0532*** (6.14)	0.0563*** (6.51)	0.0615*** (7.07)	0.0606*** (6.50)	0.0608*** (6.53)	0.0607*** (6.52)
Construction	0.0074 (0.54)	0.0088 (0.64)	0.0098 (0.73)	0.0106 (0.79)	0.0000 (0.00)	0.0003 (0.02)	-0.0014 (-0.09)
Trade	0.0340*** (3.20)	0.0365*** (3.45)	0.0392*** (3.74)	0.0407*** (3.91)	0.0205* (1.81)	0.0215* (1.90)	0.0207* (1.82)
Services	-0.0751*** (-8.45)	-0.0716*** (-8.09)	-0.0686*** (-7.82)	-0.0659*** (-7.54)	-0.0742*** (-7.79)	-0.0737*** (-7.75)	-0.0746*** (-7.82)
Exporters	0.0368*** (5.34)	0.0354*** (5.15)	0.0359*** (5.24)	0.0364*** (5.32)	0.0296*** (4.01)	0.0297*** (4.03)	0.0289*** (3.92)
Innovators	0.0268*** (4.01)	0.0243*** (3.63)	0.0225*** (3.38)	0.0215*** (3.23)	0.0176** (2.45)	0.0173** (2.40)	0.0175** (2.43)
Trading Distress	-0.0095*** (-5.67)	-0.0096*** (-5.75)	-0.0084*** (-5.03)	-0.0090*** (-5.34)	-0.0089*** (-4.86)	-0.0090*** (-4.94)	-0.0088*** (-4.86)
Financial Distress	0.0061*** (2.88)	0.0045** (2.10)	0.0042** (2.00)	0.0029 (1.37)	0.0027 (1.20)	0.0026 (1.16)	0.0028 (1.25)
Cred. Depth Index	-0.0098** (-2.30)	0.0020 (0.44)	0.0112** (2.36)	0.0092* (1.92)	-0.0045 (-0.68)	-0.0103 (-1.47)	0.0313* (1.79)
Legal Rights Index	-0.0149*** (-7.32)	-0.0058*** (-2.65)	-0.0005 (-0.22)	0.0499*** (10.73)	0.0723*** (6.42)	0.0764*** (6.73)	
Enforce Contracts Cost		0.0090*** (9.40)	0.0093*** (9.88)	0.0274*** (19.23)	0.0360*** (8.56)	0.0513*** (7.16)	
Resolve Insolvency Rate			-0.0015*** (-5.66)	-0.0030*** (-6.10)	-0.0028*** (-5.62)	-0.0038*** (-6.09)	
Gen. Pop. Trust Edelman				0.0048*** (4.63)	0.0066*** (4.98)	0.0080*** (5.58)	
Corp Tax Rate					0.0068** (2.18)	0.0156*** (3.41)	
Capital Regulatory Index						0.0563*** (2.62)	
Observations	16846	16846	16846	16846	11689	11689	11689

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Loans

	Family-owned SMEs v Professionally owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	-0.0216*** (-3.54)	-0.0208*** (-3.43)	-0.0207*** (-3.42)	-0.0199*** (-3.30)	-0.0240*** (-3.63)	-0.0242*** (-3.66)	-0.0260*** (-3.90)
5-10 Years	-0.0525*** (-3.66)	-0.0501*** (-3.53)	-0.0500*** (-3.53)	-0.0485*** (-3.44)	-0.0556*** (-3.56)	-0.0558*** (-3.59)	-0.0557*** (-3.60)
>10 Years	-0.0535*** (-4.12)	-0.0505*** (-3.95)	-0.0505*** (-3.94)	-0.0489*** (-3.85)	-0.0522*** (-3.67)	-0.0514*** (-3.63)	-0.0508*** (-3.61)
Small	0.0078 (1.32)	0.0045 (0.75)	0.0044 (0.73)	0.0011 (0.19)	0.0002 (0.03)	0.0003 (0.05)	0.0002 (0.03)
Medium	0.0243*** (3.56)	0.0192*** (2.80)	0.0190*** (2.77)	0.0146** (2.12)	0.0124 (1.64)	0.0120 (1.59)	0.0119 (1.58)
Construction	-0.0053 (-0.55)	-0.0058 (-0.60)	-0.0058 (-0.60)	-0.0061 (-0.63)	-0.0103 (-0.95)	-0.0112 (-1.03)	-0.0127 (-1.17)
Trade	0.0070 (0.93)	0.0065 (0.86)	0.0064 (0.85)	0.0054 (0.71)	-0.0009 (-0.11)	-0.0021 (-0.25)	-0.0028 (-0.33)
Services	0.0041 (0.61)	0.0029 (0.43)	0.0028 (0.42)	0.0011 (0.16)	-0.0042 (-0.54)	-0.0051 (-0.67)	-0.0061 (-0.79)
Exporters	0.0098* (1.83)	0.0105* (1.96)	0.0105* (1.96)	0.0100* (1.88)	0.0064 (1.09)	0.0062 (1.05)	0.0052 (0.88)
Innovators	0.0248*** (4.80)	0.0261*** (5.06)	0.0262*** (5.07)	0.0265*** (5.12)	0.0277*** (4.85)	0.0282*** (4.95)	0.0284*** (4.99)
Trading Distress	-0.0006 (-0.47)	-0.0006 (-0.45)	-0.0006 (-0.48)	-0.0002 (-0.14)	0.0001 (0.09)	0.0004 (0.28)	0.0007 (0.45)
Financial Distress	0.0075*** (4.58)	0.0085*** (5.13)	0.0085*** (5.13)	0.0095*** (5.69)	0.0082*** (4.52)	0.0084*** (4.63)	0.0087*** (4.80)
Cred. Depth Index	0.0124*** (3.83)	0.0049 (1.41)	0.0044 (1.24)	0.0058 (1.64)	0.0057 (1.09)	0.0141** (2.50)	0.0666*** (4.71)
Legal Rights Index	0.0086*** (5.24)	0.0083*** (4.53)	0.0037* (1.83)	0.0059 (1.43)	-0.0318*** (-3.16)	-0.0229** (-2.25)	
Enforce Contracts Cost		-0.0004 (-0.49)	-0.0006 (-0.69)	0.0007 (0.60)	-0.0140*** (-3.69)	0.0068 (1.09)	
Resolve Insolvency Rate			0.0012*** (5.51)	0.0016*** (3.61)	0.0014*** (3.21)	0.0002 (0.30)	
Gen. Pop. Trust Edelman				0.0001 (0.15)	-0.0032*** (-2.60)	-0.0011 (-0.82)	
Corp Tax Rate					-0.0113*** (-4.14)	0.0012 (0.29)	
Capital Regulatory Index						0.0729*** (4.09)	
Observations	16802	16802	16802	16802	11637	11637	11637

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Debt Securities

	Family-owned SMEs v Professionally owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0025 (1.31)	0.0022 (1.17)	0.0018 (0.92)	0.0014 (0.70)	0.0005 (0.32)	0.0006 (0.35)	0.0008 (0.51)
5-10 Years	0.0041 (1.00)	0.0036 (0.86)	0.0037 (0.92)	0.0038 (0.96)	0.0035 (1.15)	0.0037 (1.18)	0.0038 (1.20)
>10 Years	0.0021 (0.66)	0.0017 (0.49)	0.0019 (0.57)	0.0021 (0.66)	0.0033 (1.44)	0.0033 (1.39)	0.0033 (1.41)
Small	0.0003 (0.12)	0.0009 (0.45)	0.0014 (0.68)	0.0024 (1.16)	0.0013 (0.73)	0.0015 (0.85)	0.0014 (0.79)
Medium	-0.0006 (-0.25)	0.0005 (0.22)	0.0003 (0.14)	0.0014 (0.59)	-0.0000 (-0.01)	0.0004 (0.19)	0.0003 (0.13)
Construction	0.0005 (0.12)	0.0005 (0.14)	-0.0002 (-0.05)	0.0003 (0.08)	-0.0006 (-0.15)	-0.0008 (-0.22)	-0.0005 (-0.14)
Trade	0.0021 (0.67)	0.0023 (0.73)	-0.0002 (-0.06)	-0.0001 (-0.02)	-0.0024 (-0.83)	-0.0020 (-0.72)	-0.0020 (-0.72)
Services	-0.0066*** (-2.59)	-0.0063** (-2.48)	-0.0074*** (-2.75)	-0.0070*** (-2.69)	-0.0057** (-2.27)	-0.0055** (-2.22)	-0.0053** (-2.19)
Exporters	-0.0020 (-1.04)	-0.0022 (-1.17)	-0.0026 (-1.40)	-0.0024 (-1.29)	-0.0024 (-1.43)	-0.0024 (-1.44)	-0.0023 (-1.36)
Innovators	0.0032* (1.78)	0.0028 (1.58)	0.0025 (1.37)	0.0022 (1.22)	-0.0000 (-0.01)	0.0000 (0.02)	-0.0000 (-0.00)
Trading Distress	0.0006 (1.23)	0.0005 (1.22)	0.0002 (0.47)	-0.0000 (-0.08)	-0.0003 (-0.74)	-0.0003 (-0.83)	-0.0004 (-0.95)
Financial Distress	0.0014** (2.46)	0.0012** (2.06)	0.0011* (1.86)	0.0007 (1.25)	0.0007 (1.32)	0.0006 (1.15)	0.0005 (1.07)
Cred. Depth Index	-0.0032*** (-2.70)	-0.0025* (-1.95)	-0.0036*** (-3.02)	-0.0043*** (-3.29)	-0.0031** (-2.19)	-0.0040*** (-2.63)	-0.0164*** (-3.34)
Legal Rights Index	-0.0018*** (-2.98)	-0.0054*** (-6.66)	-0.0020** (-2.22)	-0.0025* (-1.84)	0.0055*** (2.10)	0.0037 (1.31)	
Enforce Contracts Cost		-0.0029*** (-7.83)	-0.0017*** (-4.57)	-0.0005 (-1.07)	0.0029*** (2.71)	-0.0024 (-1.09)	
Resolve Insolvency Rate			-0.0004*** (-5.75)	0.0002* (1.93)	0.0003*** (2.10)	0.0004*** (2.88)	
Gen. Pop. Trust Edelman				-0.0005* (-1.75)	0.0001 (0.35)	-0.0001 (-0.47)	
Corp Tax Rate					0.0025*** (3.19)	-0.0008 (-0.61)	
Capital Regulatory Index						-0.0175*** (-2.69)	
Observations	16655	16655	16655	16655	11521	11521	11521

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Equity Capital

	Family-owned SMEs v Professionally owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	-0.0077** (-2.47)	-0.0072** (-2.35)	-0.0073** (-2.36)	-0.0075** (-2.42)	-0.0076** (-2.32)	-0.0076** (-2.31)	-0.0081** (-2.45)
5-10 Years	-0.0155* (-1.73)	-0.0145* (-1.67)	-0.0145* (-1.68)	-0.0149* (-1.72)	-0.0140 (-1.52)	-0.0141 (-1.53)	-0.0145 (-1.58)
>10 Years	-0.0253*** (-3.12)	-0.0236*** (-3.02)	-0.0236*** (-3.02)	-0.0239*** (-3.04)	-0.0195** (-2.33)	-0.0196** (-2.34)	-0.0195** (-2.34)
Small	0.0144*** (4.75)	0.0126*** (4.13)	0.0127*** (4.14)	0.0133*** (4.34)	0.0147*** (4.48)	0.0147*** (4.49)	0.0149*** (4.54)
Medium	0.0144*** (4.31)	0.0116*** (3.54)	0.0117*** (3.54)	0.0124*** (3.75)	0.0132*** (3.84)	0.0133*** (3.86)	0.0134*** (3.89)
Construction	0.0037 (0.70)	0.0034 (0.63)	0.0034 (0.63)	0.0033 (0.63)	0.0016 (0.28)	0.0017 (0.29)	0.0009 (0.16)
Trade	0.0014 (0.38)	0.0012 (0.32)	0.0012 (0.32)	0.0012 (0.32)	-0.0013 (-0.33)	-0.0012 (-0.30)	-0.0018 (-0.45)
Services	0.0031 (0.91)	0.0023 (0.69)	0.0024 (0.70)	0.0027 (0.81)	0.0023 (0.61)	0.0023 (0.63)	0.0017 (0.45)
Exporters	0.0015 (0.53)	0.0018 (0.67)	0.0018 (0.66)	0.0018 (0.67)	0.0017 (0.58)	0.0018 (0.58)	0.0011 (0.36)
Innovators	0.0064** (2.40)	0.0075*** (2.78)	0.0074*** (2.77)	0.0074*** (2.75)	0.0066** (2.24)	0.0066** (2.23)	0.0067** (2.28)
Trading Distress	-0.0001 (-0.10)	-0.0000 (-0.02)	-0.0000 (-0.00)	-0.0001 (-0.10)	-0.0000 (-0.04)	-0.0000 (-0.06)	0.0000 (0.06)
Financial Distress	-0.0015* (-1.76)	-0.0010 (-1.14)	-0.0010 (-1.15)	-0.0012 (-1.36)	-0.0011 (-1.14)	-0.0011 (-1.16)	-0.0010 (-1.09)
Cred. Depth Index	0.0047*** (2.86)	-0.0011 (-0.63)	-0.0009 (-0.49)	-0.0008 (-0.43)	-0.0024 (-0.81)	-0.0029 (-0.95)	0.0169** (2.43)
Legal Rights Index	0.0065*** (6.87)	0.0066*** (6.82)	0.0073*** (7.14)	0.0009 (0.38)	0.0042 (0.73)	0.0089 (1.50)	
Enforce Contracts Cost		0.0001 (0.25)	0.0000 (0.01)	-0.0018*** (-2.67)	-0.0005 (-0.25)	0.0081** (2.40)	
Resolve Insolvency Rate			-0.0003** (-2.34)	0.0006** (2.55)	0.0006** (2.52)	0.0002 (0.57)	
Gen. Pop. Trust Edelman				-0.0004 (-0.71)	-0.0001 (-0.09)	0.0010 (1.19)	
Corp Tax Rate					0.0010 (0.63)	0.0064*** (2.83)	
Capital Regulatory Index						0.0299*** (3.19)	
Observations	16631	16631	16631	16631	11527	11527	11527

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Leasing & Hire-purchase

	Family-owned SMEs v Professionally owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0076 (0.94)	0.0117 (1.46)	0.0129 (1.62)	0.0144* (1.81)	0.0295*** (3.42)	0.0293*** (3.40)	0.0275*** (3.18)
5-10 Years	-0.0164 (-0.84)	-0.0081 (-0.43)	-0.0061 (-0.32)	-0.0050 (-0.26)	0.0002 (0.01)	0.0002 (0.01)	0.0003 (0.01)
>10 Years	-0.0427** (-2.53)	-0.0322** (-1.96)	-0.0315* (-1.92)	-0.0303* (-1.86)	-0.0285 (-1.57)	-0.0277 (-1.53)	-0.0265 (-1.47)
Small	0.1735*** (21.00)	0.1618*** (19.52)	0.1610*** (19.41)	0.1559*** (18.72)	0.1633*** (17.74)	0.1632*** (17.72)	0.1635*** (17.76)
Medium	0.2669*** (27.51)	0.2446*** (25.21)	0.2416*** (24.92)	0.2341*** (24.05)	0.2338*** (21.91)	0.2329*** (21.85)	0.2327*** (21.87)
Construction	0.0534*** (3.70)	0.0513*** (3.57)	0.0514*** (3.58)	0.0504*** (3.51)	0.0539*** (3.33)	0.0534*** (3.30)	0.0508*** (3.14)
Trade	0.0026 (0.25)	-0.0012 (-0.11)	-0.0025 (-0.24)	-0.0045 (-0.43)	-0.0124 (-1.07)	-0.0139 (-1.19)	-0.0153 (-1.31)
Services	0.0311*** (3.24)	0.0232** (2.43)	0.0209** (2.19)	0.0174* (1.82)	0.0133 (1.25)	0.0120 (1.13)	0.0104 (0.97)
Exporters	0.0328*** (4.21)	0.0361*** (4.70)	0.0362*** (4.72)	0.0353*** (4.61)	0.0296*** (3.47)	0.0292*** (3.42)	0.0275*** (3.21)
Innovators	0.0022 (0.28)	0.0078 (1.03)	0.0094 (1.23)	0.0104 (1.37)	0.0127 (1.50)	0.0131 (1.54)	0.0133 (1.57)
Trading Distress	-0.0011 (-0.55)	-0.0011 (-0.60)	-0.0021 (-1.12)	-0.0013 (-0.66)	-0.0003 (-0.12)	-0.0001 (-0.04)	0.0001 (0.06)
Financial Distress	-0.0096*** (-3.96)	-0.0053** (-2.21)	-0.0051** (-2.10)	-0.0031 (-1.28)	-0.0039 (-1.46)	-0.0037 (-1.37)	-0.0033 (-1.23)
Cred. Depth Index	0.0374*** (8.31)	0.0014 (0.28)	-0.0071 (-1.42)	-0.0056 (-1.14)	-0.0277*** (-3.65)	-0.0195** (-2.41)	0.0561*** (2.83)
Legal Rights Index	0.0399*** (16.99)	0.0327*** (12.44)	0.0240*** (8.28)	0.0165*** (2.64)	-0.0219 (-1.47)	-0.0066 (-0.43)	
Enforce Contracts Cost		-0.0074*** (-6.44)	-0.0076*** (-6.56)	-0.0160*** (-8.53)	-0.0309*** (-5.56)	0.0009 (0.10)	
Resolve Insolvency Rate			0.0024*** (7.69)	0.0023*** (3.87)	0.0023*** (3.86)	0.0007 (0.91)	
Gen. Pop. Trust Edelman				0.0022 (1.60)	-0.0013 (-0.72)	0.0021 (1.03)	
Corp Tax Rate					-0.0112*** (-2.84)	0.0082 (1.35)	
Capital Regulatory Index						0.1087*** (4.18)	
Observations	16924	16924	16924	16924	11717	11717	11717

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Factoring

	Family-owned SMEs v Professionally owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	0.0086*	0.0089*	0.0091*	0.0083*	0.0097*	0.0099*	0.0098*
	(1.80)	(1.84)	(1.90)	(1.73)	(1.88)	(1.91)	(1.89)
5-10 Years	0.0034	0.0037	0.0042	0.0033	-0.0083	-0.0086	-0.0086
	(0.27)	(0.30)	(0.34)	(0.27)	(-0.59)	(-0.60)	(-0.61)
>10 Years	-0.0056	-0.0053	-0.0054	-0.0060	-0.0162	-0.0170	-0.0170
	(-0.53)	(-0.50)	(-0.51)	(-0.57)	(-1.32)	(-1.38)	(-1.37)
Small	0.0477***	0.0474***	0.0474***	0.0491***	0.0486***	0.0485***	0.0486***
	(9.88)	(9.80)	(9.79)	(10.15)	(9.19)	(9.18)	(9.19)
Medium	0.0817***	0.0808***	0.0799***	0.0828***	0.0787***	0.0790***	0.0790***
	(13.51)	(13.33)	(13.23)	(13.59)	(12.03)	(12.05)	(12.06)
Construction	-0.0233**	-0.0234**	-0.0236**	-0.0226**	-0.0291***	-0.0287***	-0.0289***
	(-2.44)	(-2.45)	(-2.46)	(-2.38)	(-2.77)	(-2.74)	(-2.76)
Trade	-0.0295***	-0.0297***	-0.0301***	-0.0288***	-0.0380***	-0.0371***	-0.0372***
	(-4.12)	(-4.13)	(-4.18)	(-4.03)	(-4.84)	(-4.74)	(-4.75)
Services	-0.0457***	-0.0461***	-0.0469***	-0.0449***	-0.0480***	-0.0472***	-0.0473***
	(-7.12)	(-7.17)	(-7.28)	(-7.03)	(-6.72)	(-6.63)	(-6.64)
Exporters	0.0268***	0.0269***	0.0268***	0.0273***	0.0279***	0.0282***	0.0281***
	(5.48)	(5.51)	(5.49)	(5.60)	(5.21)	(5.25)	(5.23)
Innovators	0.0086*	0.0088*	0.0094**	0.0088*	0.0105**	0.0102**	0.0102**
	(1.86)	(1.91)	(2.04)	(1.92)	(2.07)	(2.00)	(2.01)
Trading Distress	-0.0038***	-0.0039***	-0.0042***	-0.0046***	-0.0042***	-0.0042***	-0.0042***
	(-3.32)	(-3.34)	(-3.60)	(-3.96)	(-3.25)	(-3.29)	(-3.28)
Financial Distress	0.0077***	0.0079***	0.0079***	0.0070***	0.0064***	0.0062***	0.0063***
	(5.25)	(5.35)	(5.36)	(4.76)	(3.99)	(3.86)	(3.87)
Cred. Depth Index	-0.0267***	-0.0279***	-0.0297***	-0.0308***	-0.0434***	-0.0474***	-0.0433***
	(-9.45)	(-9.41)	(-9.91)	(-10.15)	(-9.60)	(-9.93)	(-3.82)
Legal Rights Index	0.0019	-0.0007	0.0034**	0.0122***	0.0334***	0.0340***	
	(1.29)	(-0.44)	(1.96)	(3.44)	(3.89)	(3.90)	
Enforce Contracts Cost		-0.0025***	-0.0021***	0.0012	0.0092***	0.0109**	
		(-3.42)	(-3.06)	(1.09)	(2.92)	(2.05)	
Resolve Insolvency Rate			-0.0011***	-0.0009***	-0.0010***	-0.0011***	
			(-6.04)	(-2.74)	(-2.91)	(-2.72)	
Gen. Pop. Trust Edelman				-0.0012	0.0007	0.0009	
				(-1.43)	(0.67)	(0.77)	
Corp Tax Rate					0.0062***	0.0072**	
					(2.70)	(2.08)	
Capital Regulatory Index						0.0059	
						(0.39)	
Observations	16705	16705	16705	16705	11576	11576	11576

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

	Family-owned SMEs v Professionally owned SMEs						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family Firms	-0.0110*** (-3.27)	-0.0105*** (-3.17)	-0.0104*** (-3.15)	-0.0103*** (-3.11)	-0.0113*** (-3.11)	-0.0113*** (-3.12)	-0.0133*** (-3.57)
5-10 Years	-0.0100 (-1.23)	-0.0089 (-1.13)	-0.0088 (-1.11)	-0.0086 (-1.09)	-0.0073 (-0.84)	-0.0070 (-0.81)	-0.0076 (-0.90)
>10 Years	-0.0157** (-2.17)	-0.0144** (-2.04)	-0.0142** (-2.03)	-0.0141** (-2.01)	-0.0130* (-1.68)	-0.0122 (-1.61)	-0.0119 (-1.58)
Small	0.0098*** (3.09)	0.0084*** (2.64)	0.0083*** (2.59)	0.0080** (2.50)	0.0114*** (3.23)	0.0115*** (3.25)	0.0117*** (3.31)
Medium	0.0101*** (2.89)	0.0083** (2.36)	0.0080** (2.28)	0.0077** (2.19)	0.0097** (2.56)	0.0096** (2.54)	0.0095** (2.56)
Construction	0.0084 (1.47)	0.0084 (1.45)	0.0084 (1.45)	0.0084 (1.45)	0.0061 (0.97)	0.0063 (0.99)	0.0046 (0.74)
Trade	0.0012 (0.33)	0.0011 (0.29)	0.0010 (0.26)	0.0010 (0.25)	0.0011 (0.26)	0.0007 (0.15)	-0.0000 (-0.00)
Services	0.0035 (1.00)	0.0028 (0.82)	0.0026 (0.76)	0.0025 (0.72)	0.0026 (0.68)	0.0024 (0.63)	0.0016 (0.41)
Exporters	0.0065** (2.26)	0.0068** (2.37)	0.0068** (2.37)	0.0067** (2.35)	0.0064** (2.03)	0.0064** (2.03)	0.0055* (1.74)
Innovators	0.0086*** (3.15)	0.0092*** (3.35)	0.0094*** (3.41)	0.0094*** (3.43)	0.0088*** (2.86)	0.0090*** (2.93)	0.0096*** (3.13)
Trading Distress	-0.0008 (-1.18)	-0.0008 (-1.18)	-0.0009 (-1.32)	-0.0009 (-1.26)	-0.0009 (-1.09)	-0.0008 (-0.96)	-0.0005 (-0.68)
Financial Distress	0.0024*** (2.71)	0.0028*** (3.13)	0.0028*** (3.16)	0.0029*** (3.24)	0.0032*** (3.22)	0.0033*** (3.31)	0.0035*** (3.51)
Cred. Depth Index	0.0039** (2.25)	0.0003 (0.17)	-0.0007 (-0.38)	-0.0007 (-0.36)	-0.0048 (-1.64)	-0.0006 (-0.19)	0.0466*** (5.68)
Legal Rights Index	0.0040*** (4.33)	0.0033*** (3.19)	0.0028** (2.52)	0.0028** (3.14)	0.0071*** (-1.81)	-0.0111* (-0.51)	-0.0031 (-0.51)
Enforce Contracts Cost		-0.0008* (-1.85)	-0.0008* (-1.86)	-0.0003 (-0.41)	-0.0003 (-3.12)	-0.0071*** (3.41)	0.0113*** (3.41)
Resolve Insolvency Rate			0.0001 (1.00)	-0.0002 (-0.74)	-0.0001 (-0.33)	-0.0001 (-4.26)	-0.0013*** (-4.26)
Gen. Pop. Trust Edelman				0.0003 (0.58)	-0.0015* (-1.95)	0.0009 (1.10)	
Corp Tax Rate					-0.0052*** (-3.18)	0.0058*** (2.67)	
Capital Regulatory Index						0.0659*** (6.60)	
Observations	16428	16428	16428	16428	11426	11426	11426

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

### RQ1 Robustness C – PIIGS Sub-sample

#### Retained Earnings

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0607*** (11.25)	0.0588*** (10.85)	0.0398*** (7.08)	0.0390*** (6.91)	0.0385*** (6.76)	0.0418*** (5.25)	0.0405*** (5.08)	0.0396*** (5.00)
5-10 Years		0.0154 (1.23)	0.0150 (1.12)	0.0144 (1.07)	0.0110 (0.80)	-0.0066 (-0.35)	-0.0055 (-0.30)	-0.0119 (-0.63)
>10 Years		0.0424*** (3.98)	0.0250** (2.18)	0.0244** (2.12)	0.0216* (1.83)	0.0111 (0.68)	0.0132 (0.81)	0.0079 (0.48)
Small			0.0715*** (10.63)	0.0687*** (10.09)	0.0658*** (9.56)	0.0677*** (7.02)	0.0637*** (6.61)	0.0598*** (6.25)
Medium			0.1549*** (15.46)	0.1483*** (14.34)	0.1401*** (13.36)	0.1470*** (9.91)	0.1364*** (9.21)	0.1219*** (8.45)
Construction				-0.0077 (-0.75)	0.0028 (0.26)	0.0092 (0.60)	0.0097 (0.63)	0.0130 (0.86)
Trade				-0.0228*** (-2.70)	-0.0165* (-1.95)	-0.0249** (-2.09)	-0.0243** (-2.04)	-0.0229* (-1.94)
Services				-0.0134* (-1.67)	-0.0051 (-0.63)	-0.0131 (-1.14)	-0.0149 (-1.30)	-0.0144 (-1.27)
Exporters					0.0242*** (4.10)	0.0172** (2.07)	0.0151* (1.82)	0.0112 (1.36)
Innovators						0.0188** (2.36)	0.0178** (2.23)	0.0162** (2.05)
Trading Distress							-0.0070*** (-3.73)	0.0019 (0.91)
Financial Distress								-0.0253*** (-9.50)
Observations	21773	21773	21773	21773	21584	9904	9904	9904

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Grants and Subsidised Bank Loans

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0247*** (4.62)	0.0231*** (4.30)	0.0072 (1.29)	0.0042 (0.75)	0.0024 (0.42)	0.0028 (0.35)	0.0027 (0.35)	0.0027 (0.34)
5-10 Years		0.0102 (0.84)	0.0089 (0.69)	0.0074 (0.57)	0.0071 (0.54)	0.0317* (1.90)	0.0317* (1.90)	0.0328** (1.98)
>10 Years		0.0341*** (3.28)	0.0199* (1.80)	0.0171 (1.52)	0.0181 (1.60)	0.0326** (2.33)	0.0326** (2.33)	0.0334** (2.40)
Small			0.0746*** (11.16)	0.0665*** (9.87)	0.0600*** (8.87)	0.0483*** (5.25)	0.0482*** (5.20)	0.0490*** (5.29)
Medium			0.0977*** (10.61)	0.0810*** (8.76)	0.0680*** (7.41)	0.0688*** (5.39)	0.0686*** (5.29)	0.0713*** (5.44)
Construction				-0.0368*** (-3.53)	-0.0213** (-2.00)	-0.0245* (-1.65)	-0.0245* (-1.65)	-0.0253* (-1.70)
Trade				-0.0398*** (-4.51)	-0.0286*** (-3.27)	-0.0352*** (-2.91)	-0.0352*** (-2.91)	-0.0356*** (-2.94)
Services				-0.0553*** (-6.73)	-0.0433*** (-5.28)	-0.0465*** (-4.07)	-0.0466*** (-4.08)	-0.0470*** (-4.11)
Exporters					0.0388*** (6.91)	0.0341*** (4.38)	0.0341*** (4.36)	0.0349*** (4.46)
Innovators						0.0308*** (4.14)	0.0307*** (4.13)	0.0312*** (4.19)
Trading Distress							-0.0002 (-0.09)	-0.0024 (-1.20)
Financial Distress								0.0061** (2.44)
Observations	22011	22011	22011	22011	21796	9999	9999	9999

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Bank Credit Lines

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0306*** (3.81)	0.0272*** (3.38)	0.0069 (0.85)	0.0053 (0.65)	0.0045 (0.55)	0.0174 (1.47)	0.0170 (1.43)	0.0180 (1.53)
5-10 Years		0.0928*** (4.97)	0.0916*** (4.86)	0.0892*** (4.72)	0.0834*** (4.36)	0.0979*** (3.73)	0.0983*** (3.75)	0.1056*** (4.06)
>10 Years		0.1141*** (7.26)	0.0973*** (6.08)	0.0924*** (5.75)	0.0882*** (5.40)	0.0923*** (4.11)	0.0931*** (4.14)	0.0995*** (4.48)
Small		0.0939*** (10.11)	0.0877*** (9.28)	0.0831*** (8.68)	0.0919*** (6.72)	0.0907*** (6.58)	0.0957*** (6.98)	
Medium		0.1231*** (10.25)	0.1142*** (9.19)	0.1086*** (8.53)	0.1137*** (6.28)	0.1112*** (6.05)	0.1249*** (6.81)	
Construction			0.0155 (1.05)	0.0224 (1.48)	0.0414* (1.92)	0.0415* (1.92)	0.0364* (1.69)	
Trade			-0.0167 (-1.36)	-0.0104 (-0.84)	-0.0074 (-0.42)	-0.0071 (-0.40)	-0.0096 (-0.54)	
Services			-0.0493*** (-4.29)	-0.0435*** (-3.70)	-0.0422** (-2.52)	-0.0426** (-2.54)	-0.0446*** (-2.67)	
Exporters				0.0201** (2.40)	0.0245** (2.05)	0.0239** (2.00)	0.0276** (2.31)	
Innovators					0.0121 (1.04)	0.0117 (1.01)	0.0143 (1.24)	
Trading Distress						-0.0021 (-0.79)	-0.0144*** (-4.81)	
Financial Distress							0.0343*** (8.96)	
Observations	22254	22254	22254	22254	22038	10099	10099	10099

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0452*** (6.85)	0.0414*** (6.25)	0.0106 (1.56)	0.0083 (1.21)	0.0070 (1.02)	-0.0067 (-0.69)	-0.0083 (-0.85)	-0.0079 (-0.81)
5-10 Years		0.0422*** (2.96)	0.0421*** (2.79)	0.0419*** (2.76)	0.0436*** (2.85)	0.0679*** (3.44)	0.0689*** (3.51)	0.0716*** (3.68)
>10 Years		0.0901*** (7.53)	0.0655*** (5.15)	0.0630*** (4.92)	0.0661*** (5.13)	0.0807*** (4.90)	0.0828*** (5.08)	0.0847*** (5.25)
Small			0.1156*** (14.54)	0.1102*** (13.68)	0.1045*** (12.85)	0.1051*** (9.22)	0.1007*** (8.81)	0.1026*** (8.98)
Medium			0.2237*** (19.77)	0.2114*** (18.13)	0.1990*** (16.79)	0.1915*** (11.58)	0.1811*** (10.87)	0.1881*** (11.21)
Construction				-0.0415*** (-3.46)	-0.0270** (-2.19)	-0.0179 (-1.05)	-0.0176 (-1.03)	-0.0198 (-1.16)
Trade				-0.0078 (-0.75)	0.0029 (0.28)	0.0128 (0.89)	0.0134 (0.93)	0.0123 (0.86)
Services				-0.0525*** (-5.54)	-0.0409*** (-4.27)	-0.0353*** (-2.66)	-0.0367*** (-2.77)	-0.0377*** (-2.85)
Exporters					0.0366*** (5.36)	0.0298*** (3.11)	0.0274*** (2.85)	0.0292*** (3.05)
Innovators						0.0306*** (3.32)	0.0293*** (3.17)	0.0303*** (3.29)
Trading Distress							-0.0075*** (-3.49)	-0.0127*** (-5.25)
Financial Distress								0.0144*** (4.71)
Observations	22109	22109	22109	22109	21897	10030	10030	10030

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0589*** (8.85)	0.0569*** (8.50)	0.0251*** (3.66)	0.0203*** (2.97)	0.0190*** (2.76)	0.0178* (1.84)	0.0162* (1.68)	0.0162* (1.67)
5-10 Years		-0.0133 (-0.83)	-0.0165 (-0.99)	-0.0203 (-1.21)	-0.0231 (-1.35)	-0.0213 (-0.94)	-0.0192 (-0.85)	-0.0196 (-0.87)
>10 Years		0.0276** (1.98)	-0.0028 (-0.19)	-0.0128 (-0.88)	-0.0145 (-0.98)	-0.0085 (-0.42)	-0.0054 (-0.27)	-0.0057 (-0.29)
Small			0.1212*** (14.98)	0.1106*** (13.64)	0.1041*** (12.70)	0.1016*** (8.90)	0.0968*** (8.45)	0.0966*** (8.43)
Medium			0.2379*** (20.81)	0.2184*** (18.76)	0.2044*** (17.27)	0.1832*** (11.14)	0.1721*** (10.39)	0.1713*** (10.31)
Construction				-0.0216* (-1.69)	-0.0046 (-0.35)	0.0095 (0.52)	0.0095 (0.52)	0.0097 (0.53)
Trade				0.0036 (0.33)	0.0173 (1.60)	0.0149 (1.00)	0.0158 (1.06)	0.0159 (1.06)
Services				-0.1089*** (-11.30)	-0.0949*** (-9.74)	-0.0833*** (-6.20)	-0.0849*** (-6.32)	-0.0848*** (-6.31)
Exporters					0.0425*** (6.17)	0.0358*** (3.72)	0.0335*** (3.47)	0.0333*** (3.45)
Innovators						0.0236** (2.54)	0.0221** (2.36)	0.0219** (2.35)
Trading Distress							-0.0080*** (-3.70)	-0.0075*** (-3.09)
Financial Distress								-0.0016 (-0.51)
Observations	22073	22073	22073	22073	21864	10005	10005	10005

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Loans

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0014 (0.32)	0.0027 (0.64)	0.0041 (0.95)	0.0045 (1.06)	0.0040 (0.93)	0.0088 (1.49)	0.0096 (1.63)	0.0099* (1.69)
5-10 Years		-0.0605*** (-4.83)	-0.0598*** (-4.82)	-0.0593*** (-4.80)	-0.0603*** (-4.81)	-0.0524*** (-3.28)	-0.0538*** (-3.33)	-0.0524*** (-3.27)
>10 Years		-0.0621*** (-5.45)	-0.0603*** (-5.32)	-0.0594*** (-5.26)	-0.0603*** (-5.26)	-0.0453*** (-3.07)	-0.0473*** (-3.17)	-0.0458*** (-3.09)
Small			-0.0046 (-0.95)	-0.0029 (-0.58)	-0.0037 (-0.74)	-0.0021 (-0.30)	-0.0004 (-0.06)	0.0004 (0.06)
Medium			-0.0111* (-1.85)	-0.0079 (-1.26)	-0.0107* (-1.70)	0.0001 (0.01)	0.0037 (0.39)	0.0059 (0.61)
Construction				0.0151** (1.97)	0.0172** (2.20)	0.0233** (2.16)	0.0231** (2.15)	0.0226** (2.10)
Trade				0.0048 (0.79)	0.0065 (1.07)	0.0111 (1.37)	0.0107 (1.32)	0.0104 (1.29)
Services				0.0151*** (2.58)	0.0173*** (2.94)	0.0230*** (2.93)	0.0236*** (3.01)	0.0234*** (2.98)
Exporters					0.0095** (2.17)	0.0112* (1.86)	0.0120** (1.98)	0.0124** (2.06)
Innovators						0.0187*** (3.21)	0.0194*** (3.31)	0.0198*** (3.39)
Trading Distress							0.0030** (2.21)	0.0008 (0.54)
Financial Distress								0.0059*** (3.03)
Observations	21935	21935	21935	21935	21718	9983	9983	9983

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Debt Securities

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0008 (0.39)	0.0009 (0.43)	0.0019 (0.94)	0.0019 (0.95)	0.0017 (0.85)	0.0020 (0.73)	0.0023 (0.83)	0.0024 (0.85)
5-10 Years		-0.0043 (-0.80)	-0.0042 (-0.81)	-0.0044 (-0.83)	-0.0055 (-1.01)	0.0036 (0.60)	0.0033 (0.52)	0.0037 (0.59)
>10 Years		-0.0045 (-0.94)	-0.0036 (-0.78)	-0.0043 (-0.91)	-0.0051 (-1.05)	0.0028 (0.55)	0.0022 (0.42)	0.0024 (0.47)
Small			-0.0064*** (-3.00)	-0.0060*** (-2.76)	-0.0069*** (-3.12)	-0.0054* (-1.81)	-0.0045 (-1.48)	-0.0042 (-1.38)
Medium			-0.0042 (-1.46)	-0.0030 (-0.99)	-0.0044 (-1.45)	-0.0010 (-0.22)	0.0014 (0.29)	0.0021 (0.42)
Construction				0.0045 (1.18)	0.0058 (1.51)	0.0071 (1.31)	0.0069 (1.30)	0.0067 (1.25)
Trade				0.0110*** (3.33)	0.0120*** (3.68)	0.0119*** (2.73)	0.0113*** (2.62)	0.0110** (2.55)
Services				-0.0030 (-1.12)	-0.0020 (-0.78)	-0.0018 (-0.53)	-0.0016 (-0.46)	-0.0018 (-0.52)
Exporters					0.0049** (2.36)	0.0041 (1.44)	0.0046 (1.62)	0.0049* (1.71)
Innovators						0.0062** (2.26)	0.0066** (2.39)	0.0066** (2.39)
Trading Distress							0.0018*** (2.74)	0.0010 (1.41)
Financial Distress								0.0022** (2.31)
Observations	21615	21615	21615	21615	21416	9836	9836	9836

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Equity Capital

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0023*	0.0025**	0.0013	0.0013	0.0013	0.0033*	0.0033	0.0032
	(1.86)	(2.04)	(0.99)	(1.02)	(0.96)	(1.67)	(1.64)	(1.63)
5-10 Years	-0.0037	-0.0045	-0.0045	-0.0050	-0.0062	-0.0060	-0.0061	
	(-0.89)	(-0.93)	(-0.95)	(-1.02)	(-0.86)	(-0.84)	(-0.85)	
>10 Years	-0.0063*	-0.0086**	-0.0084**	-0.0089**	-0.0110*	-0.0108*	-0.0109*	
	(-1.69)	(-2.00)	(-1.98)	(-2.02)	(-1.70)	(-1.67)	(-1.68)	
Small		0.0049***	0.0049***	0.0046***	0.0060**	0.0059**	0.0058**	
		(3.01)	(2.96)	(2.79)	(2.27)	(2.22)	(2.20)	
Medium		0.0108***	0.0107***	0.0098***	0.0092**	0.0088**	0.0086**	
		(3.85)	(3.70)	(3.46)	(2.28)	(2.19)	(2.15)	
Construction			0.0003	0.0010	0.0004	0.0004	0.0005	
			(0.11)	(0.41)	(0.10)	(0.10)	(0.12)	
Trade			-0.0015	-0.0011	-0.0012	-0.0012	-0.0011	
			(-0.87)	(-0.64)	(-0.41)	(-0.41)	(-0.39)	
Services			0.0008	0.0014	0.0010	0.0010	0.0010	
			(0.42)	(0.75)	(0.36)	(0.34)	(0.36)	
Exporters				0.0020	0.0010	0.0009	0.0008	
				(1.43)	(0.47)	(0.42)	(0.40)	
Innovators					0.0056***	0.0056***	0.0056***	
					(2.69)	(2.67)	(2.65)	
Trading Distress						-0.0003	-0.0001	
						(-0.53)	(-0.22)	
Financial Distress							-0.0004	
							(-0.59)	
Observations	21594	21594	21594	21594	21395	9828	9828	9828

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Leasing & Hire-purchase

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0344*** (6.85)	0.0333*** (6.60)	0.0061 (1.15)	0.0074 (1.40)	0.0073 (1.37)	0.0037 (0.47)	0.0025 (0.31)	0.0025 (0.32)
5-10 Years		0.0059 (0.50)	0.0056 (0.43)	0.0051 (0.39)	0.0026 (0.20)	-0.0008 (-0.04)	0.0007 (0.04)	0.0008 (0.04)
>10 Years		0.0231** (2.27)	-0.0004 (-0.04)	0.0001 (0.01)	-0.0020 (-0.17)	-0.0132 (-0.80)	-0.0110 (-0.68)	-0.0109 (-0.67)
Small		0.1083*** (16.70)	0.1106*** (16.79)	0.1090*** (16.41)	0.1149*** (11.86)	0.1113*** (11.51)	0.1114*** (11.51)	
Medium		0.1851*** (18.74)	0.1937*** (18.66)	0.1893*** (17.96)	0.2024*** (13.23)	0.1922*** (12.59)	0.1925*** (12.55)	
Construction			0.0363*** (4.00)	0.0424*** (4.54)	0.0327** (2.42)	0.0329** (2.43)	0.0329** (2.42)	
Trade			0.0098 (1.40)	0.0136* (1.94)	0.0084 (0.81)	0.0087 (0.84)	0.0087 (0.84)	
Services			0.0234*** (3.57)	0.0274*** (4.11)	0.0232** (2.35)	0.0221** (2.25)	0.0221** (2.25)	
Exporters				0.0132** (2.50)	0.0091 (1.17)	0.0071 (0.92)	0.0071 (0.92)	
Innovators					0.0136* (1.82)	0.0123 (1.64)	0.0123 (1.65)	
Trading Distress						-0.0065*** (-3.69)	-0.0066*** (-3.39)	
Financial Distress							0.0005 (0.21)	
Observations	22092	22092	22092	22092	21875	10033	10033	10033

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Factoring

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0268*** (7.52)	0.0261*** (7.28)	0.0091** (2.35)	0.0075* (1.93)	0.0072* (1.83)	0.0133** (2.36)	0.0130** (2.31)	0.0131** (2.32)
5-10 Years		0.0088 (1.07)	0.0108 (1.11)	0.0098 (0.98)	0.0088 (0.86)	0.0112 (0.77)	0.0119 (0.82)	0.0123 (0.85)
>10 Years		0.0191*** (2.76)	0.0057 (0.70)	0.0028 (0.33)	0.0023 (0.26)	-0.0027 (-0.22)	-0.0018 (-0.14)	-0.0015 (-0.13)
Small			0.0582*** (12.54)	0.0551*** (11.93)	0.0530*** (11.45)	0.0585*** (8.64)	0.0571*** (8.44)	0.0572*** (8.45)
Medium			0.1376*** (16.50)	0.1301*** (15.45)	0.1225*** (14.55)	0.1278*** (10.58)	0.1228*** (10.17)	0.1236*** (10.15)
Construction				-0.0059 (-0.85)	0.0012 (0.16)	0.0025 (0.24)	0.0027 (0.25)	0.0025 (0.24)
Trade				-0.0008 (-0.13)	0.0037 (0.64)	0.0002 (0.02)	0.0003 (0.03)	0.0003 (0.03)
Services				-0.0286*** (-5.73)	-0.0235*** (-4.68)	-0.0262*** (-3.57)	-0.0266*** (-3.62)	-0.0266*** (-3.62)
Exporters					0.0147*** (3.77)	0.0107* (1.88)	0.0099* (1.74)	0.0101* (1.77)
Innovators						0.0117** (2.17)	0.0112** (2.09)	0.0113** (2.10)
Trading Distress							-0.0026** (-2.01)	-0.0030** (-2.10)
Financial Distress								0.0011 (0.65)
Observations	21673	21673	21673	21673	21478	9882	9882	9882

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0013 (0.72)	0.0014 (0.82)	0.0006 (0.33)	0.0007 (0.40)	0.0007 (0.40)	0.0012 (0.42)	0.0012 (0.40)	0.0013 (0.44)
5-10 Years		-0.0087* (-1.67)	-0.0093* (-1.70)	-0.0095* (-1.73)	-0.0086 (-1.58)	-0.0121 (-1.52)	-0.0120 (-1.51)	-0.0114 (-1.46)
>10 Years		-0.0086* (-1.82)	-0.0101** (-2.01)	-0.0102** (-2.03)	-0.0091* (-1.83)	-0.0090 (-1.22)	-0.0090 (-1.21)	-0.0084 (-1.15)
Small		0.0037* (1.73)	0.0038* (1.78)	0.0032 (1.49)	0.0086** (2.35)	0.0085** (2.31)	0.0090** (2.42)	
Medium		0.0067** (2.19)	0.0074** (2.28)	0.0053* (1.73)	0.0070 (1.47)	0.0068 (1.42)	0.0080 (1.59)	
Construction			0.0063* (1.87)	0.0075** (2.16)	0.0133** (2.31)	0.0134** (2.31)	0.0132** (2.30)	
Trade			-0.0002 (-0.09)	0.0007 (0.29)	0.0013 (0.40)	0.0014 (0.40)	0.0013 (0.38)	
Services			0.0034 (1.46)	0.0045** (1.96)	0.0083** (2.34)	0.0082** (2.32)	0.0082** (2.32)	
Exporters				0.0048*** (2.63)	0.0058** (1.96)	0.0057* (1.94)	0.0060** (2.04)	
Innovators					0.0053* (1.87)	0.0053* (1.86)	0.0055* (1.92)	
Trading Distress						-0.0001 (-0.20)	-0.0009 (-1.24)	
Financial Distress							0.0022** (2.33)	
Observations	21419	21419	21419	21419	21225	9723	9723	9723

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

### RQ1 Robustness D – PIIGS Sub-sample

#### Retained Earnings

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-0.0208** (-2.47)	-0.0219*** (-2.60)	0.0139* (1.75)	0.0116 (1.45)	0.0117 (1.45)	0.0197* (1.78)	0.0213* (1.93)	0.0177 (1.59)
5-10 Years		0.0156 (0.99)	0.0169 (0.99)	0.0160 (0.94)	0.0132 (0.76)	-0.0104 (-0.44)	-0.0081 (-0.35)	-0.0146 (-0.62)
>10 Years		0.0495*** (3.68)	0.0281* (1.93)	0.0266* (1.82)	0.0243 (1.63)	0.0100 (0.48)	0.0131 (0.64)	0.0078 (0.38)
Small			0.0773*** (10.27)	0.0736*** (9.62)	0.0714*** (9.21)	0.0743*** (6.92)	0.0706*** (6.54)	0.0658*** (6.12)
Medium			0.1405*** (14.64)	0.1322*** (13.24)	0.1264*** (12.38)	0.1370*** (9.52)	0.1273*** (8.79)	0.1141*** (8.02)
Construction				-0.0122 (-0.99)	-0.0021 (-0.17)	-0.0020 (-0.11)	-0.0007 (-0.04)	0.0048 (0.26)
Trade				-0.0221** (-2.25)	-0.0160 (-1.61)	-0.0326** (-2.33)	-0.0325** (-2.32)	-0.0312** (-2.26)
Services				-0.0249*** (-2.75)	-0.0165* (-1.77)	-0.0336** (-2.54)	-0.0355*** (-2.68)	-0.0335** (-2.56)
Exporters					0.0221*** (3.13)	0.0110 (1.11)	0.0092 (0.93)	0.0042 (0.43)
Innovators						0.0234** (2.46)	0.0225** (2.36)	0.0209** (2.22)
Trading Distress							-0.0079*** (-3.51)	0.0022 (0.91)
Financial Distress								-0.0301*** (-9.66)
Observations	18149	18149	18149	18149	17995	8315	8315	8315

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Grants and Subsidised Bank Loans

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0171** (2.38)	0.0165** (2.30)	0.0364*** (5.29)	0.0314*** (4.47)	0.0307*** (4.35)	0.0201** (2.02)	0.0200** (2.01)	0.0212** (2.14)
5-10 Years		0.0096 (0.64)	0.0081 (0.50)	0.0078 (0.48)	0.0068 (0.42)	0.0389* (1.92)	0.0387* (1.91)	0.0407** (2.02)
>10 Years		0.0258** (2.01)	0.0076 (0.55)	0.0056 (0.40)	0.0067 (0.47)	0.0290* (1.71)	0.0287* (1.69)	0.0302* (1.80)
Small			0.0774*** (10.95)	0.0680*** (9.47)	0.0614*** (8.46)	0.0476*** (4.76)	0.0479*** (4.76)	0.0492*** (4.90)
Medium			0.0848*** (9.94)	0.0660*** (7.59)	0.0528*** (6.08)	0.0421*** (3.56)	0.0427*** (3.54)	0.0464*** (3.81)
Construction				-0.0535*** (-4.73)	-0.0343*** (-2.94)	-0.0495*** (-3.14)	-0.0496*** (-3.14)	-0.0514*** (-3.26)
Trade				-0.0425*** (-4.46)	-0.0288*** (-3.06)	-0.0329** (-2.53)	-0.0330** (-2.53)	-0.0339*** (-2.60)
Services				-0.0608*** (-6.98)	-0.0448*** (-5.13)	-0.0445*** (-3.64)	-0.0444*** (-3.63)	-0.0453*** (-3.70)
Exporters					0.0466*** (7.34)	0.0444*** (5.03)	0.0446*** (5.03)	0.0459*** (5.18)
Innovators						0.0371*** (4.42)	0.0372*** (4.42)	0.0373*** (4.45)
Trading Distress							0.0005 (0.26)	-0.0028 (-1.26)
Financial Distress								0.0096*** (3.46)
Observations	18334	18334	18334	18334	18162	8392	8392	8392

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Bank Credit Lines

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0532*** (5.05)	0.0522*** (4.97)	0.0815*** (7.65)	0.0746*** (6.93)	0.0731*** (6.75)	0.0762*** (4.93)	0.0760*** (4.92)	0.0792*** (5.15)
5-10 Years		0.0794*** (3.61)	0.0790*** (3.53)	0.0782*** (3.49)	0.0717*** (3.16)	0.1038*** (3.37)	0.1035*** (3.36)	0.1108*** (3.62)
>10 Years		0.1029*** (5.51)	0.0815*** (4.27)	0.0775*** (4.04)	0.0724*** (3.72)	0.0932*** (3.53)	0.0929*** (3.51)	0.0994*** (3.79)
Small			0.0933*** (9.35)	0.0849*** (8.35)	0.0793*** (7.70)	0.0785*** (5.36)	0.0790*** (5.36)	0.0836*** (5.70)
Medium			0.1131*** (9.73)	0.1011*** (8.32)	0.0926*** (7.42)	0.0901*** (5.09)	0.0911*** (5.07)	0.1019*** (5.68)
Construction				-0.0074 (-0.46)	0.0034 (0.21)	0.0195 (0.82)	0.0194 (0.82)	0.0138 (0.59)
Trade				-0.0119 (-0.91)	-0.0035 (-0.27)	-0.0108 (-0.58)	-0.0109 (-0.58)	-0.0127 (-0.68)
Services				-0.0562*** (-4.71)	-0.0460*** (-3.73)	-0.0407** (-2.31)	-0.0405** (-2.30)	-0.0430*** (-2.45)
Exporters					0.0315*** (3.41)	0.0343*** (2.60)	0.0345*** (2.61)	0.0377*** (2.86)
Innovators						0.0072 (0.56)	0.0074 (0.57)	0.0092 (0.71)
Trading Distress							0.0010 (0.32)	-0.0093*** (-2.80)
Financial Distress								0.0297*** (7.09)
Observations	18530	18530	18530	18530	18357	8477	8477	8477

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0128 (1.42)	0.0112 (1.23)	0.0600*** (7.11)	0.0542*** (6.32)	0.0540*** (6.27)	0.0348*** (2.86)	0.0366*** (3.01)	0.0383*** (3.17)
5-10 Years		0.0353** (2.05)	0.0360* (1.93)	0.0367** (1.96)	0.0379** (2.02)	0.0493** (2.00)	0.0513** (2.10)	0.0538** (2.22)
>10 Years		0.0892*** (6.10)	0.0574*** (3.63)	0.0547*** (3.44)	0.0574*** (3.58)	0.0617*** (2.95)	0.0646*** (3.13)	0.0663*** (3.24)
Small			0.1215*** (14.43)	0.1133*** (13.26)	0.1086*** (12.56)	0.0996*** (8.32)	0.0955*** (7.93)	0.0976*** (8.12)
Medium			0.2035*** (19.26)	0.1883*** (17.15)	0.1780*** (15.86)	0.1592*** (10.30)	0.1499*** (9.60)	0.1561*** (9.94)
Construction				-0.0534*** (-3.98)	-0.0393*** (-2.84)	-0.0473** (-2.48)	-0.0462** (-2.42)	-0.0493*** (-2.59)
Trade				-0.0066 (-0.59)	0.0039 (0.35)	0.0074 (0.47)	0.0076 (0.48)	0.0063 (0.40)
Services				-0.0617*** (-6.12)	-0.0490*** (-4.74)	-0.0548*** (-3.81)	-0.0564*** (-3.92)	-0.0582*** (-4.04)
Exporters					0.0364*** (4.70)	0.0274** (2.53)	0.0254** (2.34)	0.0272** (2.51)
Innovators						0.0306*** (2.94)	0.0295*** (2.83)	0.0300*** (2.88)
Trading Distress							-0.0081*** (-3.28)	-0.0132*** (-4.86)
Financial Distress								0.0152*** (4.46)
Observations	18432	18432	18432	18432	18260	8438	8438	8438

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-	-	0.0218**	0.0045	0.0048	-0.0007	0.0018	0.0016
	0.0343*** (-3.52)	0.0355*** (-3.64)	(2.37)	(0.47)	(0.50)	(-0.05)	(0.14)	(0.12)
5-10 Years		-0.0313 (-1.57)	-0.0348* (-1.67)	-0.0374* (-1.79)	-0.0399* (-1.89)	-0.0484* (-1.70)	-0.0449 (-1.59)	-0.0455 (-1.61)
>10 Years		0.0103 (0.59)	-0.0298 (-1.63)	-0.0416** (-2.28)	-0.0441** (-2.38)	-0.0452* (-1.80)	-0.0406 (-1.63)	-0.0410 (-1.64)
Small			0.1243*** (14.23)	0.1081*** (12.35)	0.1022*** (11.52)	0.0948*** (7.69)	0.0897*** (7.23)	0.0894*** (7.20)
Medium			0.2215*** (20.44)	0.1993*** (17.86)	0.1861*** (16.31)	0.1533*** (9.75)	0.1421*** (8.95)	0.1411*** (8.85)
Construction				-0.0106 (-0.72)	0.0090 (0.59)	0.0183 (0.87)	0.0195 (0.92)	0.0200 (0.94)
Trade				0.0202* (1.70)	0.0346*** (2.89)	0.0206 (1.24)	0.0208 (1.25)	0.0209 (1.26)
Services				- 0.1218*** (-11.82)	- 0.1058*** (-10.04)	- 0.0957*** (-6.49)	- 0.0977*** (-6.63)	- 0.0974*** (-6.61)
Exporters					0.0461*** (5.81)	0.0363*** (3.26)	0.0339*** (3.05)	0.0336*** (3.02)
Innovators						0.0191* (1.77)	0.0174 (1.61)	0.0173 (1.60)
Trading Distress						- 0.0099*** (-3.90)	- 0.0090*** (-3.23)	- 0.0025 (-0.71)
Financial Distress								
Observations	18418	18418	18418	18418	18251	8425	8425	8425

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Loans

	Model 1	Model 2	Model 3	Family-owned SMEs v Professionally owned SMEs	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-	-	-	Family-owned SMEs v Professionally owned SMEs	-	-	-	-	-
	0.0434*** (-6.42)	0.0435*** (-6.44)	0.0454*** (-6.36)	0.0444*** (-6.22)	0.0453*** (-6.30)	0.0401*** (-4.04)	0.0408*** (-4.09)	0.0399*** (-4.01)	
5-10 Years	-	-	-	-	-	-	-	-	-
	0.0803*** (-5.18)	0.0796*** (-5.17)	0.0796*** (-5.18)	0.0827*** (-5.28)	0.0571*** (-2.95)	0.0582*** (-2.99)	0.0582*** (-2.95)	0.0571*** (-2.95)	
>10 Years	-	-	-	-	-	-0.0433** (-0.448)	-0.0448** (-0.437)	-0.0448** (-0.437)	
	0.0732*** (-5.12)	0.0715*** (-5.00)	0.0711*** (-4.98)	0.0746*** (-5.12)	(-2.42)	(-2.48)	(-2.48)	(-2.43)	
Small		-0.0060 (-1.08)	-0.0042 (-0.75)	-0.0040 (-0.71)	-0.0066 (-0.83)	-0.0054 (-0.68)	-0.0054 (-0.68)	-0.0048 (-0.60)	
Medium		-0.0057 (-0.90)	-0.0025 (-0.37)	-0.0031 (-0.45)	-0.0072 (-0.77)	-0.0050 (-0.53)	-0.0050 (-0.53)	-0.0033 (-0.34)	
Construction			0.0155* (1.70)	0.0149 (1.60)	0.0140 (1.09)	0.0140 (1.07)	0.0136 (1.00)	0.0128	
Trade			0.0047 (0.67)	0.0052 (0.73)	0.0008 (0.08)	0.0008 (0.06)	0.0005 (0.04)	0.0004	
Services			0.0117* (1.81)	0.0125* (1.89)	0.0175* (1.89)	0.0179* (1.93)	0.0179* (1.93)	0.0173* (1.86)	
Exporters				0.0025 (0.49)	0.0105 (1.47)	0.0105 (1.52)	0.0109 (1.58)	0.0113	
Innovators					0.0106 (1.53)	0.0106 (1.58)	0.0109 (1.61)	0.0112	
Trading Distress						0.0022 (1.34)	0.0022 (1.34)	0.0004 (0.20)	
Financial Distress							0.0052** (2.27)	0.0052** (2.27)	
Observations	18241	18241	18241	18241	18062	8373	8373	8373	

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Debt Securities

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0044*	0.0045*	0.0037	0.0023	0.0023	0.0051	0.0045	0.0045
	(1.84)	(1.89)	(1.43)	(0.86)	(0.83)	(1.54)	(1.30)	(1.30)
5-10 Years	-0.0054	-0.0053	-0.0053	-0.0061	0.0071	0.0065	0.0068	
	(-0.78)	(-0.81)	(-0.79)	(-0.88)	(0.95)	(0.85)	(0.90)	
>10 Years	-0.0090	-0.0079	-0.0088	-0.0095	0.0014	0.0006	0.0009	
	(-1.49)	(-1.36)	(-1.47)	(-1.54)	(0.24)	(0.10)	(0.14)	
Small		-0.0059**	-0.0063***	-0.0067***	-0.0029	-0.0019	-0.0017	
		(-2.48)	(-2.63)	(-2.75)	(-0.88)	(-0.58)	(-0.50)	
Medium		-0.0035	-0.0035	-0.0039	-0.0012	0.0009	0.0015	
		(-1.20)	(-1.14)	(-1.25)	(-0.29)	(0.20)	(0.33)	
Construction		0.0010	0.0013	0.0029	0.0027	0.0024		
		(0.23)	(0.31)	(0.49)	(0.46)	(0.42)		
Trade		0.0094**	0.0098***	0.0094*	0.0088*	0.0087*		
		(2.53)	(2.61)	(1.89)	(1.80)	(1.77)		
Services		-0.0060**	-0.0056*	-0.0056	-0.0054	-0.0056		
		(-2.08)	(-1.94)	(-1.48)	(-1.43)	(-1.46)		
Exporters		0.0015	-0.0011	-0.0004	-0.0003			
		(0.65)	(-0.34)	(-0.14)	(-0.10)			
Innovators			0.0066**	0.0069**	0.0069**			
			(2.22)	(2.31)	(2.29)			
Trading Distress				0.0020***	0.0015*			
					(2.80)	(1.84)		
Financial Distress						0.0017*		
						(1.65)		
Observations	17976	17976	17976	17976	17816	8253	8253	8253

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Equity Capital

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-0.0099*** (-3.67)	-0.0097*** (-3.64)	-0.0065*** (-2.67)	-0.0065*** (-2.66)	-0.0065*** (-2.65)	-0.0062* (-1.67)	-0.0060 (-1.61)	-0.0062* (-1.66)
5-10 Years		-0.0052 (-0.90)	-0.0060 (-0.92)	-0.0060 (-0.93)	-0.0062 (-0.94)	-0.0107 (-1.04)	-0.0102 (-1.01)	-0.0108 (-1.05)
>10 Years		-0.0083 (-1.62)	-0.0110* (-1.91)	-0.0111* (-1.90)	-0.0114* (-1.92)	-0.0183* (-1.96)	-0.0177* (-1.92)	-0.0182* (-1.95)
Small			0.0055*** (2.83)	0.0054*** (2.75)	0.0052*** (2.59)	0.0070** (2.17)	0.0067** (2.09)	0.0066** (2.04)
Medium			0.0093*** (3.62)	0.0089*** (3.39)	0.0082*** (3.13)	0.0084** (2.11)	0.0077** (1.96)	0.0071* (1.83)
Construction				-0.0007 (-0.20)	0.0001 (0.04)	0.0023 (0.42)	0.0024 (0.44)	0.0028 (0.52)
Trade				-0.0018 (-0.73)	-0.0014 (-0.56)	-0.0010 (-0.27)	-0.0009 (-0.26)	-0.0007 (-0.21)
Services				-0.0007 (-0.33)	-0.0002 (-0.08)	0.0020 (0.58)	0.0019 (0.55)	0.0022 (0.63)
Exporters					0.0019 (1.03)	0.0034 (1.21)	0.0033 (1.15)	0.0031 (1.08)
Innovators						0.0070** (2.54)	0.0069** (2.52)	0.0069** (2.53)
Trading Distress							-0.0007 (-1.02)	-0.0002 (-0.24)
Financial Distress								-0.0015* (-1.68)
Observations	17974	17974	17974	17974	17814	8252	8252	8252

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Leasing & Hire-purchase

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-0.0197*** (-2.58)	-0.0203*** (-2.65)	0.0221*** (3.28)	0.0225*** (3.34)	0.0227*** (3.34)	0.0239** (2.45)	0.0250** (2.58)	0.0249** (2.56)
5-10 Years		0.0163 (1.13)	0.0168 (1.02)	0.0148 (0.90)	0.0107 (0.64)	0.0152 (0.64)	0.0166 (0.71)	0.0163 (0.69)
>10 Years		0.0339*** (2.77)	0.0032 (0.23)	0.0017 (0.12)	-0.0016 (-0.11)	-0.0119 (-0.59)	-0.0102 (-0.51)	-0.0104 (-0.52)
Small			0.1126*** (16.52)	0.1147*** (16.70)	0.1130*** (16.31)	0.1229*** (12.32)	0.1206*** (12.06)	0.1205*** (12.04)
Medium			0.1742*** (19.29)	0.1841*** (19.32)	0.1782*** (18.40)	0.1939*** (13.93)	0.1870*** (13.37)	0.1865*** (13.28)
Construction				0.0576*** (5.19)	0.0677*** (5.90)	0.0597*** (3.62)	0.0608*** (3.67)	0.0610*** (3.68)
Trade				0.0189** (2.36)	0.0243*** (3.02)	0.0157 (1.34)	0.0155 (1.32)	0.0156 (1.33)
Services				0.0222*** (3.05)	0.0287*** (3.86)	0.0196* (1.80)	0.0188* (1.72)	0.0188* (1.73)
Exporters					0.0213*** (3.42)	0.0177** (1.96)	0.0162* (1.80)	0.0161* (1.78)
Innovators						0.0064 (0.73)	0.0055 (0.62)	0.0054 (0.61)
Trading Distress							-0.0058*** (-2.80)	-0.0054** (-2.37)
Financial Distress								-0.0011 (-0.40)
Observations	18396	18396	18396	18396	18214	8415	8415	8415

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Factoring

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-	-	0.0137***	0.0096*	0.0099*	0.0112	0.0118	0.0122
	0.0201*** (-3.32)	0.0206*** (-3.39)	(2.76)	(1.88)	(1.94)	(1.50)	(1.59)	(1.64)
5-10 Years		0.0048 (0.46)	0.0081 (0.64)	0.0073 (0.56)	0.0070 (0.53)	0.0113 (0.60)	0.0126 (0.68)	0.0133 (0.72)
>10 Years		0.0228** (2.52)	0.0055 (0.51)	0.0022 (0.20)	0.0019 (0.17)	-0.0022 (-0.14)	-0.0009 (-0.05)	-0.0004 (-0.03)
Small			0.0602*** (12.34)	0.0566*** (11.69)	0.0548*** (11.21)	0.0626*** (8.62)	0.0617*** (8.47)	0.0618*** (8.49)
Medium			0.1407*** (18.08)	0.1327*** (16.73)	0.1244*** (15.67)	0.1255*** (11.12)	0.1219*** (10.75)	0.1232*** (10.76)
Construction				-0.0015 (-0.18)	0.0082 (0.90)	0.0058 (0.44)	0.0065 (0.49)	0.0059 (0.44)
Trade				-0.0015 (-0.22)	0.0034 (0.51)	-0.0010 (-0.10)	-0.0010 (-0.10)	-0.0011 (-0.11)
Services				-	-	-	-	-
			0.0309*** (-5.37)	0.0242*** (-4.15)	0.0262*** (-3.02)	0.0265*** (-3.06)	0.0266*** (-3.07)	
Exporters					0.0199*** (4.13)	0.0187*** (2.66)	0.0181** (2.57)	0.0185*** (2.63)
Innovators						0.0085 (1.28)	0.0082 (1.22)	0.0082 (1.24)
Trading Distress							-0.0027* (-1.67)	-0.0035** (-2.04)
Financial Distress								0.0027 (1.26)
Observations	18053	18053	18053	18053	17897	8295	8295	8295

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-0.0077*** (-2.61)	-0.0078*** (-2.62)	-0.0055* (-1.88)	-0.0058* (-1.95)	-0.0059** (-1.98)	-0.0090* (-1.84)	-0.0087* (-1.79)	-0.0083* (-1.73)
5-10 Years		-0.0095 (-1.46)	-0.0100 (-1.47)	-0.0105 (-1.52)	-0.0109 (-1.56)	-0.0172 (-1.54)	-0.0166 (-1.51)	-0.0161 (-1.47)
>10 Years		-0.0091 (-1.52)	-0.0104* (-1.66)	-0.0109* (-1.71)	-0.0113* (-1.75)	-0.0175* (-1.68)	-0.0168 (-1.64)	-0.0164 (-1.62)
Small		0.0012 (0.50)	0.0013 (0.55)	0.0007 (0.30)	0.0043 (1.11)	0.0036 (0.92)	0.0040 (1.01)	
Medium		0.0071** (2.32)	0.0077** (2.37)	0.0058* (1.82)	0.0099* (1.90)	0.0083 (1.60)	0.0091* (1.73)	
Construction			0.0088** (1.99)	0.0099** (2.16)	0.0156** (2.06)	0.0159** (2.07)	0.0157** (2.05)	
Trade			0.0000 (0.01)	0.0009 (0.30)	0.0020 (0.45)	0.0020 (0.45)	0.0019 (0.43)	
Services			0.0016 (0.61)	0.0028 (1.06)	0.0051 (1.20)	0.0048 (1.13)	0.0047 (1.11)	
Exporters				0.0044** (1.99)	0.0038 (1.06)	0.0036 (1.01)	0.0038 (1.06)	
Innovators					0.0072** (2.06)	0.0070** (2.01)	0.0071** (2.04)	
Trading Distress						-0.0013 (-1.51)	-0.0019** (-1.99)	
Financial Distress							0.0017 (1.49)	
Observations	17788	17788	17788	17788	17639	8141	8141	8141

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

### RQ1 Robustness E – Non-PIIGS Sub-sample

#### Retained Earnings

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0776*** (15.39)	0.0752*** (14.92)	0.0508*** (10.06)	0.0499*** (9.86)	0.0464*** (9.12)	0.0404*** (5.65)	0.0404*** (5.65)	0.0397*** (5.56)
5-10 Years		0.0572*** (5.68)	0.0573*** (5.25)	0.0583*** (5.32)	0.0544*** (4.87)	0.0421*** (2.85)	0.0419*** (2.83)	0.0397*** (2.67)
>10 Years		0.0754*** (9.26)	0.0553*** (6.16)	0.0550*** (6.12)	0.0516*** (5.59)	0.0542*** (4.48)	0.0537*** (4.42)	0.0521*** (4.25)
Small			0.0507*** (9.49)	0.0491*** (9.12)	0.0480*** (8.81)	0.0493*** (6.35)	0.0496*** (6.39)	0.0447*** (5.72)
Medium			0.1366*** (19.79)	0.1299*** (18.43)	0.1237*** (17.37)	0.1120*** (11.21)	0.1127*** (11.25)	0.1050*** (10.48)
Construction				-0.0261*** (-2.70)	-0.0018 (-0.18)	0.0071 (0.50)	0.0069 (0.48)	0.0100 (0.69)
Trade				-0.0207*** (-2.61)	-0.0062 (-0.79)	0.0076 (0.69)	0.0076 (0.69)	0.0057 (0.52)
Services				-0.0305*** (-4.27)	-0.0126* (-1.74)	-0.0079 (-0.79)	-0.0077 (-0.77)	-0.0071 (-0.71)
Exporters					0.0408*** (7.73)	0.0340*** (4.55)	0.0345*** (4.60)	0.0346*** (4.62)
Innovators						0.0251*** (3.35)	0.0257*** (3.42)	0.0263*** (3.51)
Trading Distress							0.0016 (0.99)	0.0060*** (3.34)
Financial Distress								-0.0145*** (-6.35)
Observations	26047	26047	26047	26047	25794	12017	12017	12017

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Grants and Subsidised Bank Loans

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0273*** (7.69)	0.0267*** (7.50)	0.0120*** (3.40)	0.0103*** (2.92)	0.0091** (2.57)	0.0080 (1.56)	0.0079 (1.55)	0.0081 (1.59)
5-10 Years		-0.0077 (-0.96)	-0.0128 (-1.41)	-0.0127 (-1.40)	-0.0113 (-1.25)	-0.0055 (-0.45)	-0.0058 (-0.48)	-0.0043 (-0.35)
>10 Years		0.0060 (0.86)	-0.0115 (-1.44)	-0.0115 (-1.45)	-0.0103 (-1.29)	-0.0051 (-0.49)	-0.0055 (-0.53)	-0.0045 (-0.44)
Small			0.0493*** (13.14)	0.0475*** (12.50)	0.0474*** (12.35)	0.0437*** (7.92)	0.0440*** (7.97)	0.0458*** (8.28)
Medium			0.0813*** (16.40)	0.0713*** (14.50)	0.0685*** (13.86)	0.0681*** (9.50)	0.0687*** (9.55)	0.0720*** (9.87)
Construction				-0.0540*** (-8.05)	-0.0474*** (-6.71)	-0.0422*** (-4.20)	-0.0424*** (-4.23)	-0.0434*** (-4.36)
Trade				-0.0396*** (-6.61)	-0.0353*** (-5.83)	-0.0292*** (-3.45)	-0.0293*** (-3.47)	-0.0284*** (-3.34)
Services				-0.0399*** (-7.22)	-0.0343*** (-6.02)	-0.0274*** (-3.46)	-0.0274*** (-3.45)	-0.0276*** (-3.49)
Exporters					0.0124*** (3.31)	0.0068 (1.25)	0.0073 (1.34)	0.0075 (1.37)
Innovators						0.0320*** (6.12)	0.0325*** (6.20)	0.0319*** (6.08)
Trading Distress							0.0016 (1.33)	-0.0004 (-0.29)
Financial Distress								0.0066*** (4.09)
Observations	26067	26067	26067	26067	25807	12034	12034	12034

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Bank Credit Lines

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0403*** (6.13)	0.0373*** (5.67)	0.0174*** (2.59)	0.0168** (2.50)	0.0116* (1.72)	0.0110 (1.14)	0.0109 (1.14)	0.0114 (1.19)
5-10 Years		0.0314** (2.07)	0.0273* (1.78)	0.0290* (1.89)	0.0241 (1.56)	0.0200 (0.95)	0.0198 (0.94)	0.0231 (1.10)
>10 Years		0.0747*** (5.80)	0.0542*** (4.13)	0.0501*** (3.81)	0.0447*** (3.36)	0.0553*** (3.11)	0.0549*** (3.09)	0.0573*** (3.23)
Small			0.0572*** (7.58)	0.0553*** (7.32)	0.0509*** (6.66)	0.0368*** (3.37)	0.0370*** (3.38)	0.0421*** (3.84)
Medium			0.1141*** (13.16)	0.1088*** (12.24)	0.0978*** (10.83)	0.0954*** (7.39)	0.0959*** (7.41)	0.1028*** (7.90)
Construction				0.0000 (0.00)	0.0363*** (2.67)	0.0610*** (3.13)	0.0609*** (3.13)	0.0591*** (3.04)
Trade				0.0204* (1.91)	0.0418*** (3.86)	0.0484*** (3.16)	0.0483*** (3.16)	0.0508*** (3.32)
Services				-0.0547*** (-5.68)	-0.0288*** (-2.89)	-0.0119 (-0.85)	-0.0118 (-0.84)	-0.0117 (-0.83)
Exporters					0.0656*** (9.21)	0.0483*** (4.72)	0.0487*** (4.75)	0.0488*** (4.76)
Innovators						0.0419*** (4.05)	0.0423*** (4.08)	0.0418*** (4.04)
Trading Distress							0.0012 (0.54)	-0.0030 (-1.23)
Financial Distress								0.0139*** (4.43)
Observations	26507	26507	26507	26507	26241	12216	12216	12216

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0572*** (10.60)	0.0552*** (10.22)	0.0289*** (5.33)	0.0286*** (5.26)	0.0278*** (5.08)	0.0263*** (3.37)	0.0262*** (3.36)	0.0263*** (3.37)
5-10 Years		0.0036 (0.30)	-0.0020 (-0.16)	-0.0012 (-0.09)	-0.0010 (-0.08)	0.0053 (0.31)	0.0051 (0.29)	0.0053 (0.30)
>10 Years		0.0365*** (3.57)	0.0095 (0.87)	0.0076 (0.69)	0.0081 (0.74)	0.0089 (0.60)	0.0084 (0.57)	0.0085 (0.57)
Small			0.0625*** (10.65)	0.0615*** (10.45)	0.0613*** (10.30)	0.0574*** (6.77)	0.0577*** (6.81)	0.0580*** (6.81)
Medium			0.1506*** (20.43)	0.1472*** (19.48)	0.1469*** (19.11)	0.1514*** (13.76)	0.1521*** (13.79)	0.1525*** (13.72)
Construction				-0.0040 (-0.38)	-0.0010 (-0.09)	0.0108 (0.69)	0.0107 (0.68)	0.0106 (0.67)
Trade				0.0071 (0.83)	0.0091 (1.03)	0.0129 (1.04)	0.0129 (1.04)	0.0130 (1.05)
Services				-0.0281*** (-3.69)	-0.0264*** (-3.30)	-0.0126 (-1.12)	-0.0124 (-1.11)	-0.0124 (-1.11)
Exporters					0.0045 (0.78)	-0.0049 (-0.59)	-0.0043 (-0.52)	-0.0043 (-0.52)
Innovators						0.0172** (2.07)	0.0178** (2.13)	0.0178** (2.13)
Trading Distress							0.0018 (0.97)	0.0015 (0.78)
Financial Distress								0.0008 (0.31)
Observations	26373	26373	26373	26373	26105	12150	12150	12150

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Trade Credit

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0277*** (6.94)	0.0269*** (6.73)	0.0165*** (4.08)	0.0162*** (4.05)	0.0141*** (3.50)	0.0166*** (2.97)	0.0166*** (2.97)	0.0166*** (2.97)
5-10 Years		0.0132 (1.52)	0.0112 (1.20)	0.0122 (1.29)	0.0112 (1.15)	0.0199 (1.63)	0.0202* (1.66)	0.0201* (1.66)
>10 Years		0.0219*** (3.00)	0.0111 (1.41)	0.0065 (0.81)	0.0041 (0.49)	0.0179* (1.78)	0.0186* (1.87)	0.0186* (1.86)
Small			0.0215*** (4.98)	0.0200*** (4.63)	0.0181*** (4.11)	0.0208*** (3.36)	0.0203*** (3.28)	0.0202*** (3.24)
Medium			0.0616*** (11.14)	0.0567*** (10.14)	0.0507*** (9.03)	0.0434*** (5.66)	0.0423*** (5.51)	0.0421*** (5.44)
Construction				-0.0077 (-0.96)	0.0110 (1.30)	0.0112 (0.96)	0.0114 (0.97)	0.0114 (0.98)
Trade				0.0397*** (5.65)	0.0510*** (7.41)	0.0502*** (5.28)	0.0503*** (5.29)	0.0502*** (5.28)
Services				-0.0481*** (-8.52)	-0.0354*** (-6.36)	-0.0288*** (-3.78)	-0.0291*** (-3.81)	-0.0291*** (-3.81)
Exporters					0.0321*** (7.60)	0.0212*** (3.59)	0.0202*** (3.41)	0.0203*** (3.41)
Innovators						0.0218*** (3.71)	0.0207*** (3.53)	0.0207*** (3.53)
Trading Distress							-0.0028** (-2.13)	-0.0027* (-1.88)
Financial Distress								-0.0004 (-0.23)
Observations	26238	26238	26238	26238	25975	12078	12078	12078

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Loans

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0304*** (7.74)	0.0311*** (7.89)	0.0260*** (6.48)	0.0258*** (6.42)	0.0242*** (6.00)	0.0135** (2.40)	0.0135** (2.40)	0.0137** (2.44)
5-10 Years		-0.0183* (-1.86)	-0.0201** (-1.98)	-0.0197* (-1.95)	-0.0197* (-1.91)	-0.0320** (-2.35)	-0.0324** (-2.37)	-0.0306** (-2.25)
>10 Years			0.0223*** (-2.61)	0.0285*** (-3.21)	0.0289*** (-3.25)	0.0306*** (-3.39)	0.0318*** (-2.65)	0.0327*** (-2.71)
Small				0.0094** (2.16)	0.0098** (2.25)	0.0093** (2.09)	0.0042 (0.69)	0.0047 (0.76)
Medium					0.0300*** (5.70)	0.0306*** (5.66)	0.0265*** (4.87)	0.0329*** (4.18)
Construction						-0.0159** (-2.21)	-0.0050 (-0.67)	0.0033 (0.30)
Trade							0.0266*** (3.01)	0.0264*** (2.99)
Services								0.0281*** (3.18)
Exporters								0.0019 (0.18)
Innovators								
Trading Distress								
Financial Distress								
Observations	26277	26277	26277	26277	26017	12113	12113	12113

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Debt Securities

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0007 (0.66)	0.0006 (0.59)	0.0004 (0.33)	0.0002 (0.20)	0.0004 (0.34)	0.0011 (0.74)	0.0011 (0.73)	0.0014 (0.94)
5-10 Years		0.0002 (0.07)	0.0000 (0.01)	0.0001 (0.04)	-0.0004 (-0.17)	0.0020 (0.76)	0.0020 (0.73)	0.0022 (0.81)
>10 Years		0.0021 (1.09)	0.0018 (0.87)	0.0017 (0.82)	0.0017 (0.81)	0.0032 (1.53)	0.0030 (1.42)	0.0031 (1.47)
Small			0.0018 (1.46)	0.0015 (1.18)	0.0014 (1.05)	0.0035** (2.09)	0.0036** (2.18)	0.0042** (2.50)
Medium			0.0015 (1.05)	0.0007 (0.47)	0.0007 (0.49)	0.0026 (1.40)	0.0030 (1.55)	0.0039* (1.92)
Construction				-0.0019 (-0.77)	-0.0025 (-0.94)	0.0002 (0.05)	0.0001 (0.02)	-0.0003 (-0.09)
Trade				-0.0046** (-2.34)	-0.0050** (-2.36)	-0.0025 (-1.02)	-0.0025 (-1.04)	-0.0024 (-0.99)
Services				-0.0044** (-2.36)	-0.0049** (-2.42)	-0.0015 (-0.66)	-0.0015 (-0.66)	-0.0016 (-0.68)
Exporters					-0.0008 (-0.65)	-0.0017 (-1.05)	-0.0016 (-0.96)	-0.0015 (-0.95)
Innovators						0.0014 (0.92)	0.0016 (1.00)	0.0013 (0.86)
Trading Distress							0.0005 (1.50)	-0.0002 (-0.51)
Financial Distress								0.0021*** (4.00)
Observations	26084	26084	26084	26084	25830	12057	12057	12057

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Equity Capital

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0083*** (4.19)	0.0093*** (4.62)	0.0075*** (3.67)	0.0075*** (3.70)	0.0070*** (3.45)	0.0080** (2.56)	0.0080** (2.56)	0.0080** (2.56)
5-10 Years		-0.0108* (-1.79)	-0.0119* (-1.88)	-0.0119* (-1.89)	-0.0109* (-1.72)	-0.0159* (-1.76)	-0.0160* (-1.77)	-0.0160* (-1.77)
>10 Years			0.0205*** (-3.87)	0.0236*** (-4.19)	0.0232*** (-4.13)	0.0224*** (-3.98)	0.0238*** (-2.97)	0.0243*** (-3.00)
Small				0.0046** (2.10)	0.0048** (2.21)	0.0045** (2.02)	0.0047 (1.35)	0.0049 (1.42)
Medium					0.0097*** (3.56)	0.0103*** (3.68)	0.0090*** (3.20)	0.0076* (1.80)
Construction						-0.0018 (-0.51)	0.0017 (0.46)	0.0032 (0.50)
Trade						0.0027 (0.91)	0.0044 (1.53)	-0.0004 (-0.08)
Services						0.0039 (1.47)	0.0064** (2.42)	0.0017 (0.41)
Exporters							0.0073*** (3.50)	0.0077** (2.35)
Innovators								0.0080** (2.44)
Trading Distress								0.0062* (1.93)
Financial Distress								0.0062* (1.93)
Observations	26057	26057	26057	26057	25809	12037	12037	12037

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Leasing & Hire-purchase

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0817*** (13.34)	0.0795*** (12.96)	0.0277*** (4.59)	0.0273*** (4.53)	0.0245*** (4.03)	0.0131 (1.49)	0.0132 (1.50)	0.0131 (1.49)
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5-10 Years	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
>10 Years	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
	0.0402*** (2.93)	0.0328** (2.28)	0.0325** (2.26)	0.0302** (2.08)	0.0255 (1.26)	0.0262 (1.30)	0.0249 (1.23)	
Small	0.0636*** (5.48)	0.0112 (0.91)	0.0110 (0.90)	0.0066 (0.53)	-0.0056 (-0.32)	-0.0040 (-0.23)	-0.0051 (-0.30)	
Medium	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	
Construction	0.1697*** (25.50)	0.1677*** (25.12)	0.1634*** (24.20)	0.1673*** (16.92)	0.1666*** (16.85)	0.1647*** (16.56)		
	0.2889***	0.2836***	0.2730***	0.2771***	0.2754***	0.2725***		
Trade	(35.91)	(34.34)	(32.47)	(22.83)	(22.65)	(22.24)		
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Services	(.)	(.)	(.)	(.)	(.)	(.)		
	0.0157 (1.33)	0.0442*** (3.58)	0.0499*** (2.78)	0.0503*** (2.80)	0.0512*** (2.85)			
Exporters	-0.0471*** (-5.05)	-0.0315*** (-3.34)	-0.0204 (-1.49)	-0.0203 (-1.49)	-0.0212 (-1.55)			
Innovators	-0.0152* (-1.78)	0.0041 (0.46)	0.0099 (0.78)	0.0094 (0.74)	0.0094 (0.74)			
Trading Distress		0.0494*** (7.71)	0.0569*** (6.10)	0.0553*** (5.91)	0.0553*** (5.91)			
Financial Distress				0.0053 (0.56)	0.0037 (0.39)	0.0039 (0.41)		
Family Firms					-0.0047** (-2.23)	-0.0030 (-1.31)		
5-10 Years						-0.0057** (-1.98)		
Observations	26464	26464	26464	26464	26197	12210	12210	12210

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Factoring

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0177*** (5.64)	0.0172*** (5.48)	0.0054* (1.73)	0.0033 (1.08)	0.0020 (0.66)	0.0015 (0.33)	0.0014 (0.32)	0.0013 (0.30)
5-10 Years		-0.0120* (-1.66)	-0.0177** (-2.12)	-0.0167** (-1.99)	-0.0186** (-2.17)	-0.0181 (-1.63)	-0.0184* (-1.65)	-0.0162 (-1.47)
>10 Years		-0.0002 (-0.03)	-0.0162** (-2.19)	-0.0164** (-2.22)	-0.0189** (-2.48)	-0.0108 (-1.10)	-0.0113 (-1.14)	-0.0095 (-0.98)
Small			0.0363*** (11.12)	0.0336*** (10.10)	0.0326*** (9.60)	0.0288*** (5.91)	0.0290*** (5.95)	0.0315*** (6.47)
Medium			0.0688*** (15.31)	0.0548*** (12.61)	0.0496*** (11.43)	0.0501*** (7.97)	0.0504*** (8.00)	0.0548*** (8.55)
Construction				-0.0501*** (-7.55)	-0.0341*** (-4.83)	-0.0376*** (-3.82)	-0.0376*** (-3.82)	-0.0385*** (-3.99)
Trade				-0.0563*** (-10.02)	-0.0468*** (-8.56)	-0.0428*** (-5.54)	-0.0427*** (-5.53)	-0.0413*** (-5.36)
Services				-0.0562*** (-10.62)	-0.0442*** (-8.41)	-0.0413*** (-5.59)	-0.0412*** (-5.58)	-0.0406*** (-5.55)
Exporters					0.0229*** (6.82)	0.0235*** (4.83)	0.0239*** (4.90)	0.0244*** (5.00)
Innovators						0.0176*** (3.81)	0.0180*** (3.88)	0.0177*** (3.83)
Trading Distress							0.0012 (1.09)	-0.0016 (-1.36)
Financial Distress								0.0087*** (6.00)
Observations	26133	26133	26133	26133	25880	12074	12074	12074

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

	Family-owned SMEs v Solely owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0030*	0.0037**	0.0023	0.0024	0.0015	0.0006	0.0006	0.0006
	(1.66)	(2.04)	(1.26)	(1.32)	(0.80)	(0.19)	(0.19)	(0.19)
5-10 Years	-0.0100*	-0.0109*	-0.0108*	-0.0098*	-0.0179**	-0.0179**	-0.0172**	
	(-1.79)	(-1.85)	(-1.86)	(-1.66)	(-2.07)	(-2.07)	(-2.00)	
>10 Years	-0.0181***	-0.0208***	-0.0202***	-0.0200***	-0.0241***	-0.0242***	-0.0236***	
	(-3.71)	(-3.98)	(-3.91)	(-3.84)	(-3.10)	(-3.11)	(-3.06)	
Small		0.0078***	0.0080***	0.0088***	0.0114***	0.0114***	0.0120***	
		(3.74)	(3.87)	(4.21)	(3.32)	(3.32)	(3.49)	
Medium		0.0074***	0.0082***	0.0080***	0.0098**	0.0098**	0.0107***	
		(3.06)	(3.27)	(3.22)	(2.42)	(2.42)	(2.61)	
Construction			0.0012	0.0031	0.0075	0.0074	0.0072	
			(0.36)	(0.91)	(1.26)	(1.26)	(1.22)	
Trade			0.0018	0.0029	0.0046	0.0046	0.0048	
			(0.67)	(1.13)	(1.10)	(1.10)	(1.14)	
Services			0.0057**	0.0064***	0.0091**	0.0091**	0.0089**	
			(2.36)	(2.65)	(2.36)	(2.36)	(2.32)	
Exporters				0.0041**	0.0041	0.0041	0.0041	
				(2.13)	(1.30)	(1.31)	(1.31)	
Innovators					0.0145***	0.0146***	0.0145***	
					(4.69)	(4.69)	(4.66)	
Trading Distress						0.0001	-0.0005	
						(0.17)	(-0.68)	
Financial Distress							0.0020**	
							(2.05)	
Observations	25894	25894	25894	25894	25637	11907	11907	11907

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

### RQ1 Robustness F – Non-PIIGS Sub-sample

#### Retained Earnings

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0142** (2.02)	0.0134* (1.90)	0.0338*** (4.89)	0.0322*** (4.65)	0.0315*** (4.51)	0.0201** (2.03)	0.0200** (2.02)	0.0159 (1.60)
5-10 Years		0.0612*** (4.09)	0.0583*** (3.54)	0.0599*** (3.62)	0.0536*** (3.17)	0.0766*** (3.57)	0.0766*** (3.57)	0.0693*** (3.18)
>10 Years		0.0878*** (7.15)	0.0579*** (4.20)	0.0576*** (4.17)	0.0520*** (3.66)	0.0752*** (4.30)	0.0749*** (4.27)	0.0690*** (3.83)
Small			0.0635*** (8.26)	0.0620*** (7.96)	0.0614*** (7.76)	0.0585*** (5.27)	0.0587*** (5.29)	0.0525*** (4.67)
Medium			0.1425*** (17.52)	0.1349*** (16.04)	0.1307*** (15.24)	0.1208*** (9.99)	0.1213*** (10.01)	0.1091*** (8.92)
Construction				-0.0269** (-2.02)	-0.0096 (-0.68)	-0.0042 (-0.21)	-0.0042 (-0.21)	-0.0001 (-0.00)
Trade				-0.0103 (-0.99)	-0.0010 (-0.10)	0.0232 (1.58)	0.0233 (1.59)	0.0199 (1.37)
Services				-0.0373*** (-4.19)	-0.0253*** (-2.74)	-0.0104 (-0.82)	-0.0102 (-0.80)	-0.0083 (-0.66)
Exporters					0.0309*** (4.27)	0.0250** (2.44)	0.0253** (2.47)	0.0253** (2.48)
Innovators						0.0219** (2.16)	0.0224** (2.20)	0.0237** (2.34)
Trading Distress							0.0014 (0.61)	0.0089*** (3.63)
Financial Distress								-0.0265*** (-8.56)
Observations	17865	17865	17865	17865	17688	8377	8377	8377

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Grants and Subsidised Bank Loans

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0073 (1.49)	0.0070 (1.42)	0.0193*** (4.07)	0.0199*** (4.22)	0.0197*** (4.14)	0.0174** (2.54)	0.0174** (2.54)	0.0183*** (2.69)
5-10 Years		-0.0043 (-0.40)	-0.0114 (-0.88)	-0.0106 (-0.83)	-0.0071 (-0.55)	0.0033 (0.20)	0.0033 (0.20)	0.0046 (0.28)
>10 Years		0.0197** (2.07)	-0.0028 (-0.25)	-0.0011 (-0.10)	0.0017 (0.15)	0.0155 (1.09)	0.0155 (1.10)	0.0167 (1.20)
Small			0.0432*** (8.79)	0.0423*** (8.32)	0.0419*** (8.10)	0.0450*** (6.18)	0.0450*** (6.18)	0.0455*** (6.30)
Medium			0.0872*** (15.87)	0.0774*** (13.76)	0.0741*** (12.97)	0.0775*** (9.56)	0.0775*** (9.54)	0.0800*** (9.80)
Construction				-0.0485*** (-5.36)	-0.0442*** (-4.62)	-0.0378*** (-2.78)	-0.0378*** (-2.78)	-0.0386*** (-2.86)
Trade				-0.0508*** (-7.03)	-0.0470*** (-6.38)	-0.0396*** (-3.86)	-0.0397*** (-3.86)	-0.0390*** (-3.79)
Services				-0.0359*** (-5.41)	-0.0316*** (-4.52)	-0.0237** (-2.44)	-0.0237** (-2.44)	-0.0239** (-2.46)
Exporters					0.0102** (2.00)	0.0099 (1.35)	0.0099 (1.34)	0.0100 (1.36)
Innovators						0.0232*** (3.29)	0.0231*** (3.28)	0.0225*** (3.19)
Trading Distress							-0.0001 (-0.07)	-0.0019 (-1.08)
Financial Distress								0.0064*** (2.93)
Observations	17853	17853	17853	17853	17676	8382	8382	8382

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Bank Credit Lines

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.1049*** (12.47)	0.1042*** (12.39)	0.1194*** (14.14)	0.1128*** (13.31)	0.1130*** (13.25)	0.1104*** (9.07)	0.1099*** (9.03)	0.1120*** (9.20)
5-10 Years		0.0096 (0.47)	0.0039 (0.19)	0.0065 (0.31)	0.0047 (0.23)	0.0046 (0.16)	0.0038 (0.13)	0.0082 (0.29)
>10 Years		0.0505*** (2.88)	0.0252 (1.40)	0.0203 (1.13)	0.0136 (0.75)	0.0207 (0.85)	0.0186 (0.76)	0.0219 (0.90)
Small		0.0595*** (5.84)	0.0563*** (5.51)	0.0491*** (4.74)	0.0359** (2.44)	0.0371** (2.52)	0.0400*** (2.72)	
Medium		0.1053*** (10.33)	0.0981*** (9.33)	0.0828*** (7.71)	0.0785*** (5.10)	0.0812*** (5.27)	0.0868*** (5.62)	
Construction			0.0147 (0.90)	0.0588*** (3.44)	0.0742*** (3.04)	0.0744*** (3.05)	0.0728*** (2.98)	
Trade			0.0426*** (3.37)	0.0639*** (5.02)	0.0666*** (3.69)	0.0673*** (3.74)	0.0695*** (3.86)	
Services			-0.0588*** (-5.43)	-0.0289** (-2.57)	-0.0180 (-1.13)	-0.0167 (-1.05)	-0.0168 (-1.06)	
Exporters				0.0786*** (9.04)	0.0526*** (4.20)	0.0550*** (4.39)	0.0550*** (4.39)	
Innovators					0.0379*** (3.02)	0.0406*** (3.24)	0.0403*** (3.22)	
Trading Distress						0.0077*** (2.73)	0.0041 (1.35)	
Financial Distress							0.0125*** (3.22)	
Observations	18153	18153	18153	18153	17965	8501	8501	8501

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0534*** (7.66)	0.0527*** (7.56)	0.0719*** (10.49)	0.0694*** (10.08)	0.0702*** (10.13)	0.0720*** (7.33)	0.0719*** (7.32)	0.0723*** (7.35)
5-10 Years		0.0201 (1.27)	0.0150 (0.88)	0.0162 (0.94)	0.0209 (1.20)	0.0152 (0.65)	0.0151 (0.64)	0.0158 (0.67)
>10 Years		0.0656*** (4.86)	0.0350** (2.37)	0.0333** (2.25)	0.0382** (2.57)	0.0278 (1.38)	0.0274 (1.36)	0.0279 (1.38)
Small		0.0646*** (8.16)	0.0629*** (7.90)	0.0628*** (7.82)	0.0602*** (5.31)	0.0604*** (5.33)	0.0608*** (5.36)	
Medium		0.1385*** (16.75)	0.1340*** (15.68)	0.1346*** (15.47)	0.1331*** (10.74)	0.1336*** (10.77)	0.1345*** (10.78)	
Construction			0.0012 (0.09)	-0.0003 (-0.02)	-0.0080 (-0.39)	-0.0079 (-0.39)	-0.0081 (-0.40)	
Trade			0.0102 (0.97)	0.0100 (0.93)	0.0153 (1.00)	0.0155 (1.02)	0.0159 (1.04)	
Services			-0.0300*** (-3.36)	-0.0304*** (-3.21)	-0.0255* (-1.91)	-0.0252* (-1.89)	-0.0252* (-1.89)	
Exporters				-0.0014 (-0.18)	-0.0097 (-0.92)	-0.0092 (-0.87)	-0.0092 (-0.87)	
Innovators					0.0177* (1.69)	0.0183* (1.75)	0.0183* (1.74)	
Trading Distress						0.0018 (0.76)	0.0012 (0.47)	
Financial Distress							0.0021 (0.66)	
Observations	18065	18065	18065	18065	17883	8465	8465	8465

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Trade Credit

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-0.0025 (-0.45)	-0.0027 (-0.49)	0.0067 (1.21)	0.0015 (0.26)	0.0019 (0.34)	0.0069 (0.89)	0.0070 (0.90)	0.0074 (0.96)
5-10 Years		0.0101 (0.79)	0.0067 (0.48)	0.0102 (0.71)	0.0075 (0.51)	0.0194 (1.08)	0.0196 (1.10)	0.0203 (1.14)
>10 Years		0.0179 (1.64)	0.0028 (0.23)	-0.0011 (-0.09)	-0.0055 (-0.44)	0.0115 (0.76)	0.0125 (0.83)	0.0130 (0.87)
Small			0.0329*** (5.31)	0.0303*** (4.82)	0.0266*** (4.10)	0.0185** (2.02)	0.0180** (1.97)	0.0184** (2.02)
Medium			0.0620*** (9.62)	0.0528*** (7.96)	0.0440*** (6.46)	0.0269*** (2.83)	0.0259*** (2.72)	0.0269*** (2.81)
Construction				-0.0262** (-2.44)	0.0010 (0.08)	-0.0091 (-0.60)	-0.0092 (-0.60)	-0.0095 (-0.62)
Trade				0.0404*** (4.36)	0.0532*** (5.89)	0.0574*** (4.60)	0.0569*** (4.56)	0.0575*** (4.60)
Services				-0.0624*** (-8.88)	-0.0444*** (-6.36)	-0.0337*** (-3.52)	-0.0342*** (-3.56)	-0.0341*** (-3.56)
Exporters					0.0468*** (8.19)	0.0349*** (4.40)	0.0338*** (4.26)	0.0338*** (4.27)
Innovators						0.0223*** (2.91)	0.0210*** (2.73)	0.0211*** (2.73)
Trading Distress							-0.0032* (-1.83)	-0.0038** (-2.04)
Financial Distress								0.0023 (0.95)
Observations	17971	17971	17971	17971	17792	8421	8421	8421

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Other Loans

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-0.0085 (-1.51)	-0.0081 (-1.44)	-0.0034 (-0.60)	-0.0043 (-0.76)	-0.0032 (-0.57)	-0.0059 (-0.74)	-0.0060 (-0.76)	-0.0038 (-0.49)
5-10 Years		-0.0233 (-1.58)	-0.0266* (-1.74)	-0.0256* (-1.66)	-0.0246 (-1.58)	-0.0516** (-2.46)	-0.0518** (-2.47)	-0.0470** (-2.27)
>10 Years		-0.0325** (-2.53)	-0.0421*** (-3.13)	-0.0430*** (-3.18)	-0.0434*** (-3.16)	-0.0645*** (-3.44)	-0.0649*** (-3.45)	-0.0601*** (-3.25)
Small			0.0205*** (3.16)	0.0201*** (3.07)	0.0179*** (2.68)	0.0162* (1.82)	0.0163* (1.84)	0.0181** (2.06)
Medium			0.0319*** (4.87)	0.0289*** (4.27)	0.0225*** (3.26)	0.0342*** (3.59)	0.0345*** (3.62)	0.0391*** (4.10)
Construction				-0.0382*** (-3.90)	-0.0206** (-1.97)	-0.0289** (-2.04)	-0.0289** (-2.04)	-0.0298** (-2.12)
Trade				0.0112 (1.30)	0.0193** (2.29)	0.0124 (1.05)	0.0125 (1.06)	0.0147 (1.25)
Services				-0.0192*** (-2.70)	-0.0061 (-0.85)	-0.0126 (-1.25)	-0.0125 (-1.24)	-0.0125 (-1.24)
Exporters					0.0349*** (6.12)	0.0077 (0.98)	0.0080 (1.01)	0.0079 (1.01)
Innovators						0.0414*** (5.46)	0.0417*** (5.49)	0.0416*** (5.48)
Trading Distress							0.0010 (0.56)	-0.0023 (-1.23)
Financial Distress								0.0113*** (4.74)
Observations	17967	17967	17967	17967	17789	8429	8429	8429

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Debt Securities

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-0.0016 (-1.03)	-0.0016 (-1.03)	-0.0016 (-1.02)	-0.0019 (-1.17)	-0.0018 (-1.09)	-0.0004 (-0.18)	-0.0004 (-0.18)	-0.0003 (-0.13)
5-10 Years		-0.0004 (-0.11)	-0.0004 (-0.11)	-0.0003 (-0.07)	-0.0003 (-0.09)	0.0004 (0.09)	0.0004 (0.08)	0.0006 (0.14)
>10 Years		0.0008 (0.25)	0.0007 (0.24)	0.0007 (0.22)	0.0006 (0.20)	0.0019 (0.50)	0.0018 (0.48)	0.0020 (0.54)
Small		0.0003 (0.18)	-0.0002 (-0.09)	0.0002 (0.09)	0.0040 (1.57)	0.0040 (1.59)	0.0040 (1.65)	0.0041* (1.65)
Medium		-0.0000 (-0.00)	-0.0013 (-0.64)	-0.0005 (-0.26)	0.0008 (0.36)	0.0010 (0.41)	0.0012 (0.52)	
Construction			0.0011 (0.29)	-0.0017 (-0.45)	-0.0009 (-0.18)	-0.0009 (-0.18)	-0.0011 (-0.21)	
Trade			-0.0050** (-2.00)	-0.0065** (-2.30)	-0.0058 (-1.54)	-0.0058 (-1.52)	-0.0057 (-1.49)	
Services			-0.0060*** (-2.72)	-0.0079*** (-3.01)	-0.0072** (-2.06)	-0.0072** (-2.05)	-0.0072** (-2.06)	
Exporters				-0.0035** (-2.12)	-0.0032 (-1.44)	-0.0032 (-1.42)	-0.0032 (-1.43)	
Innovators					-0.0020 (-0.87)	-0.0019 (-0.84)	-0.0020 (-0.86)	
Trading Distress						0.0002 (0.43)	-0.0000 (-0.10)	
Financial Distress							0.0008 (1.20)	
Observations	17883	17883	17883	17883	17707	8402	8402	8402

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Equity Capital

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-0.0127*** (-3.92)	-0.0124*** (-3.82)	-0.0101*** (-3.15)	-0.0101*** (-3.16)	-0.0101*** (-3.14)	-0.0054 (-1.14)	-0.0053 (-1.12)	-0.0053 (-1.12)
5-10 Years		-0.0215** (-2.34)	-0.0258** (-2.56)	-0.0256** (-2.54)	-0.0218** (-2.16)	-0.0167 (-1.25)	-0.0166 (-1.25)	-0.0166 (-1.25)
>10 Years		-0.0256*** (-3.09)	-0.0334*** (-3.62)	-0.0335*** (-3.62)	-0.0304*** (-3.31)	-0.0253** (-2.11)	-0.0251** (-2.10)	-0.0251** (-2.09)
Small			0.0141*** (4.14)	0.0144*** (4.25)	0.0153*** (4.50)	0.0171*** (3.31)	0.0171*** (3.30)	0.0171*** (3.30)
Medium			0.0156*** (4.60)	0.0168*** (4.78)	0.0171*** (4.84)	0.0139*** (2.66)	0.0137*** (2.62)	0.0137*** (2.61)
Construction				0.0005 (0.09)	0.0005 (0.09)	0.0029 (0.32)	0.0030 (0.33)	0.0030 (0.33)
Trade				0.0073* (1.66)	0.0076* (1.71)	0.0025 (0.38)	0.0024 (0.37)	0.0025 (0.37)
Services				0.0044 (1.22)	0.0049 (1.31)	0.0010 (0.18)	0.0010 (0.18)	0.0010 (0.18)
Exporters					0.0021 (0.67)	0.0003 (0.06)	0.0002 (0.04)	0.0002 (0.04)
Innovators						0.0078* (1.73)	0.0075* (1.65)	0.0075* (1.65)
Trading Distress							-0.0006 (-0.60)	-0.0006 (-0.57)
Financial Distress								0.0001 (0.05)
Observations	17875	17875	17875	17875	17701	8379	8379	8379

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Leasing & Hire-purchase

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	0.0074 (0.89)	0.0065 (0.77)	0.0473*** (5.90)	0.0484*** (6.03)	0.0490*** (6.06)	0.0303** (2.56)	0.0307*** (2.59)	0.0300** (2.53)
5-10 Years		-0.0243 (-1.22)	-0.0430** (-2.08)	-0.0436** (-2.11)	-0.0475** (-2.27)	-0.0300 (-1.05)	-0.0295 (-1.04)	-0.0310 (-1.09)
>10 Years		0.0360** (2.10)	-0.0388** (-2.16)	-0.0372** (-2.07)	-0.0444** (-2.43)	-0.0421* (-1.71)	-0.0408* (-1.66)	-0.0421* (-1.71)
Small			0.1913*** (21.35)	0.1903*** (21.16)	0.1858*** (20.30)	0.1890*** (14.22)	0.1887*** (14.18)	0.1880*** (14.09)
Medium			0.2899*** (32.17)	0.2856*** (30.66)	0.2730*** (28.56)	0.2739*** (19.67)	0.2724*** (19.53)	0.2708*** (19.28)
Construction				-0.0021 (-0.13)	0.0292* (1.81)	0.0374 (1.60)	0.0372 (1.59)	0.0377 (1.62)
Trade				-0.0420*** (-3.62)	-0.0276** (-2.36)	-0.0189 (-1.12)	-0.0194 (-1.15)	-0.0200 (-1.18)
Services				-0.0101 (-0.99)	0.0115 (1.09)	0.0165 (1.08)	0.0156 (1.03)	0.0157 (1.03)
Exporters					0.0551 *** (6.64)	0.0539 *** (4.47)	0.0523 *** (4.33)	0.0523 *** (4.33)
Innovators						0.0194 (1.61)	0.0174 (1.44)	0.0175 (1.44)
Trading Distress							-0.0052* (-1.90)	-0.0041 (-1.37)
Financial Distress								-0.0041 (-1.08)
Observations	18141	18141	18141	18141	17959	8509	8509	8509

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Factoring

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-	-	-0.0048	-0.0057	-0.0063	-0.0040	-0.0041	-0.0024
	0.0153*** (-3.27)	0.0156*** (-3.31)	(-1.06)	(-1.26)	(-1.39)	(-0.61)	(-0.63)	(-0.38)
5-10 Years	0.0020 (0.19)	-0.0037 (-0.30)	-0.0017 (-0.14)	-0.0055 (-0.44)	-0.0055 (-0.33)	-0.0056 (-0.34)	-0.0056 (-0.09)	-0.0014
>10 Years	0.0092 (1.02)	-0.0099 (-0.92)	-0.0082 (-0.78)	-0.0112 (-1.03)	-0.0095 (-0.66)	-0.0098 (-0.68)	-0.0098 (-0.41)	-0.0058
Small		0.0403*** (8.81)	0.0384*** (7.83)	0.0367*** (7.24)	0.0298*** (4.12)	0.0299*** (4.14)	0.0318*** (4.51)	
Medium		0.0690*** (13.93)	0.0517*** (10.20)	0.0463*** (8.89)	0.0454*** (5.98)	0.0456*** (6.01)	0.0502*** (6.64)	
Construction			0.0603*** (-6.59)	0.0413*** (-4.14)	0.0456*** (-3.26)	0.0455*** (-3.25)	0.0467*** (-3.39)	
Trade			0.0673*** (-9.18)	0.0573*** (-7.97)	0.0561*** (-5.50)	0.0559*** (-5.48)	0.0539*** (-5.29)	
Services			-	-	-	-	-	
		0.0753*** (-11.46)	0.0619*** (-9.28)	0.0604*** (-6.37)	0.0602*** (-6.35)	0.0602*** (-6.37)	0.0599*** (-6.37)	
Exporters				0.0275*** (5.79)	0.0312*** (4.54)	0.0315*** (4.58)	0.0319*** (4.65)	
Innovators					0.0064 (1.00)	0.0068 (1.05)	0.0067 (1.05)	
Trading Distress						0.0011 (0.73)	-0.0023 (-1.48)	
Financial Distress							0.0116*** (5.71)	
Observations	17926	17926	17926	17926	17752	8410	8410	8410

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

	Family-owned SMEs v Professionally owned SMEs							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Family Firms	-0.0059** (-2.17)	-0.0058** (-2.13)	-0.0046* (-1.71)	-0.0046* (-1.68)	-0.0055** (-2.02)	-0.0109** (-2.37)	-0.0109** (-2.38)	-0.0102** (-2.24)
5-10 Years		-0.0013 (-0.18)	-0.0026 (-0.33)	-0.0026 (-0.33)	-0.0002 (-0.03)	-0.0049 (-0.42)	-0.0051 (-0.43)	-0.0033 (-0.28)
>10 Years		-0.0100 (-1.58)	-0.0132* (-1.92)	-0.0132* (-1.92)	-0.0120* (-1.74)	-0.0143 (-1.40)	-0.0147 (-1.43)	-0.0132 (-1.32)
Small			0.0085*** (2.86)	0.0087*** (2.92)	0.0097*** (3.24)	0.0125** (2.46)	0.0125** (2.48)	0.0132*** (2.65)
Medium			0.0084*** (2.84)	0.0087*** (2.88)	0.0084*** (2.78)	0.0067 (1.35)	0.0070 (1.41)	0.0087* (1.74)
Construction				-0.0024 (-0.52)	0.0008 (0.17)	-0.0003 (-0.03)	-0.0002 (-0.02)	-0.0003 (-0.04)
Trade				0.0020 (0.54)	0.0038 (1.02)	-0.0002 (-0.03)	-0.0001 (-0.01)	0.0004 (0.07)
Services				0.0019 (0.59)	0.0033 (1.04)	0.0004 (0.08)	0.0006 (0.11)	0.0003 (0.06)
Exporters					0.0064** (2.42)	0.0086** (1.97)	0.0089** (2.02)	0.0088** (2.00)
Innovators						0.0111*** (2.67)	0.0115*** (2.75)	0.0115*** (2.75)
Trading Distress							0.0009 (0.92)	-0.0002 (-0.21)
Financial Distress								0.0036*** (2.69)
Observations	17693	17693	17693	17693	17515	8287	8287	8287

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

### RQ1 Robustness G – PIIGS Dummy Summarised

Family-owned SMEs v Solely owned SMEs

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0398*** (7.49)	0.0065 (1.49)	0.0148** (1.99)	0.0135** (2.24)	0.0167*** (3.24)	0.0125*** (3.04)	0.0017 (1.19)	0.0059*** (2.96)	0.0089 (1.47)	0.0054 (1.52)	0.0008 (0.39)
5-10 Years	0.0200* (1.73)	0.0100 (1.01)	0.0551*** (3.37)	0.0299** (2.26)	0.0056 (0.47)	-0.0393*** (-3.82)	0.0034 (1.14)	-0.0120** (-1.97)	0.0152 (1.07)	-0.0061 (-0.69)	-0.0151** (-2.52)
>10 Years	0.0356*** (3.62)	0.0097 (1.16)	0.0725*** (5.22)	0.0362*** (3.24)	0.0098 (0.96)	-0.0364*** (-3.94)	0.0031 (1.30)	-0.0190*** (-3.48)	-0.0067 (-0.56)	-0.0080 (-1.03)	-0.0175*** (-3.21)
Small	0.0514*** (8.56)	0.0484*** (9.58)	0.0656*** (7.68)	0.0787*** (11.54)	0.0527*** (8.94)	0.0035 (0.76)	0.0011 (0.65)	0.0056** (2.44)	0.1418*** (20.30)	0.0426*** (10.86)	0.0110*** (4.34)
Medium	0.1123*** (13.69)	0.0752*** (10.94)	0.1144*** (10.84)	0.1698*** (18.23)	0.0897*** (11.43)	0.0268*** (4.32)	0.0031 (1.32)	0.0083*** (2.87)	0.2388*** (25.53)	0.0789*** (13.50)	0.0096*** (3.06)
Construction	0.0112 (1.07)	-0.0334*** (-3.90)	0.0494*** (3.42)	-0.0024 (-0.21)	0.0110 (1.07)	0.0121 (1.57)	0.0028 (0.97)	0.0018 (0.45)	0.0433*** (3.67)	-0.0205*** (-2.82)	0.0103** (2.45)
Trade	-0.0086 (-1.06)	-0.0308*** (-4.38)	0.0236** (2.04)	0.0128 (1.37)	0.0349*** (4.18)	0.0204*** (3.34)	0.0036 (1.58)	-0.0010 (-0.32)	-0.0071 (-0.79)	-0.0251*** (-4.39)	0.0031 (1.12)
Services	-0.0107 (-1.43)	-0.0342*** (-5.18)	-0.0273** (-2.54)	-0.0227*** (-2.66)	-0.0525*** (-7.29)	0.0124** (2.24)	-0.0013 (-0.69)	0.0012 (0.44)	0.0154* (1.84)	-0.0352*** (-6.67)	0.0087*** (3.24)
Exporters	0.0260*** (4.68)	0.0188*** (4.13)	0.0400*** (5.15)	0.0093 (1.47)	0.0272*** (5.10)	0.0090** (2.11)	0.0009 (0.62)	0.0051** (2.41)	0.0343*** (5.42)	0.0191*** (5.17)	0.0050** (2.28)
Innovators	0.0210*** (3.84)	0.0319*** (7.33)	0.0281*** (3.64)	0.0227*** (3.66)	0.0203*** (3.89)	0.0261*** (6.27)	0.0038*** (2.58)	0.0061*** (2.98)	0.0081 (1.28)	0.0154*** (4.39)	0.0104*** (4.82)
Trading Distress	0.0038*** (2.83)	-0.0011 (-0.94)	-0.0077*** (-4.08)	-0.0041*** (-2.68)	-0.0052*** (-3.96)	0.0007 (0.65)	0.0003 (0.89)	0.0007 (1.30)	-0.0046*** (-3.00)	-0.0026*** (-2.88)	-0.0008 (-1.38)
Financial Distress	-0.0189*** (-10.96)	0.0064*** (4.58)	0.0220*** (9.07)	0.0059*** (3.03)	-0.0010 (-0.61)	0.0067*** (5.06)	0.0022*** (4.50)	-0.0002 (-0.30)	-0.0030 (-1.51)	0.0059*** (5.23)	0.0021*** (2.98)
PIIGS	-0.0044 (-0.79)	0.0484*** (10.84)	0.0062 (0.81)	0.0197*** (3.17)	0.1181*** (22.80)	-0.0268*** (-6.20)	0.0062*** (3.95)	-0.0197*** (-7.77)	-0.1544*** (-24.48)	0.0083** (2.31)	-0.0084*** (-3.63)
Observations	21921	22033	22315	22180	22083	22096	21893	21865	22243	21956	21630

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Family-owned SMEs v Professionally owned SMEs

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0166** (2.25)	0.0205*** (3.56)	0.0996*** (10.45)	0.0588*** (7.77)	0.0046 (0.63)	-0.0175*** (-2.93)	0.0014 (0.71)	-0.0056* (-1.88)	0.0267*** (3.45)	0.0024 (0.48)	-0.0094*** (-2.88)
5-10 Years	0.0299* (1.88)	0.0218* (1.70)	0.0540*** (2.59)	0.0313* (1.83)	-0.0086 (-0.52)	-0.0511*** (-3.61)	0.0039 (0.93)	-0.0142* (-1.65)	-0.0083 (-0.45)	0.0032 (0.26)	-0.0094 (-1.17)
>10 Years	0.0408*** (3.00)	0.0236** (2.19)	0.0561*** (3.14)	0.0429*** (2.95)	-0.0113 (-0.79)	-0.0504*** (-3.93)	0.0018 (0.52)	-0.0226*** (-2.93)	-0.0273* (-1.69)	-0.0065 (-0.61)	-0.0147** (-2.07)
Small	0.0615*** (8.00)	0.0456*** (7.41)	0.0649*** (6.32)	0.0838*** (10.31)	0.0566*** (7.62)	0.0051 (0.85)	0.0009 (0.43)	0.0123*** (4.00)	0.1563*** (18.84)	0.0476*** (9.81)	0.0090*** (2.81)
Medium	0.1139*** (12.49)	0.0688*** (9.33)	0.1000*** (8.65)	0.1513*** (15.58)	0.0786*** (9.06)	0.0196*** (2.83)	0.0003 (0.15)	0.0110*** (3.33)	0.2304*** (23.83)	0.0817*** (13.26)	0.0087** (2.49)
Construction	0.0032 (0.24)	-0.0433*** (-4.21)	0.0434** (2.57)	-0.0285** (-2.06)	0.0069 (0.53)	-0.0061 (-0.64)	0.0008 (0.22)	0.0032 (0.61)	0.0519*** (3.62)	-0.0212** (-2.20)	0.0084 (1.45)
Trade	-0.0062 (-0.62)	-0.0344*** (-4.18)	0.0285** (2.20)	0.0125 (1.14)	0.0394*** (3.85)	0.0062 (0.81)	0.0020 (0.63)	0.0010 (0.26)	-0.0016 (-0.16)	-0.0294*** (-4.11)	0.0011 (0.29)
Services	-0.0200** (-2.20)	-0.0328*** (-4.26)	-0.0297** (-2.51)	-0.0393*** (-4.02)	-0.0629*** (-7.28)	0.0021 (0.31)	-0.0062** (-2.47)	0.0020 (0.57)	0.0176* (1.85)	-0.0448*** (-6.98)	0.0029 (0.83)
Exporters	0.0160** (2.25)	0.0263*** (4.59)	0.0458*** (5.05)	0.0073 (0.97)	0.0358*** (5.29)	0.0100* (1.87)	-0.0020 (-1.07)	0.0020 (0.72)	0.0350*** (4.58)	0.0263*** (5.35)	0.0066** (2.31)
Innovators	0.0212*** (3.05)	0.0300*** (5.52)	0.0228** (2.54)	0.0237*** (3.20)	0.0185*** (2.82)	0.0261*** (5.03)	0.0028 (1.54)	0.0075*** (2.80)	0.0111 (1.47)	0.0077* (1.65)	0.0090*** (3.29)
Trading Distress	0.0054*** (3.15)	-0.0018 (-1.28)	-0.0024 (-1.05)	-0.0055*** (-2.97)	-0.0069*** (-4.18)	-0.0012 (-0.88)	0.0007 (1.51)	-0.0004 (-0.64)	-0.0048** (-2.57)	-0.0033*** (-2.80)	-0.0010 (-1.49)
Financial Distress	-0.0284*** (-12.95)	0.0079*** (4.48)	0.0201*** (7.08)	0.0076*** (3.28)	-0.0001 (-0.07)	0.0084*** (5.09)	0.0013** (2.12)	-0.0008 (-0.97)	-0.0025 (-1.04)	0.0077*** (5.20)	0.0027*** (3.01)
PIIGS	0.0016 (0.24)	0.0460*** (8.41)	0.0201** (2.30)	0.0189*** (2.62)	0.1371*** (21.44)	-0.0250*** (-4.82)	0.0048** (2.55)	-0.0198*** (-6.59)	-0.1668*** (-23.58)	0.0149*** (3.27)	-0.0090*** (-3.19)
Observations	16692	16774	16978	16903	16846	16802	16655	16631	16924	16705	16428

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

### RQ1 Robustness H – OLS Summarised

Family-owned SMEs v Solely owned SMEs

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0421*** (8.07)	0.0176*** (4.12)	0.0218*** (3.00)	0.0182*** (3.10)	0.0353*** (6.97)	0.0061 (1.52)	0.0011 (0.75)	0.0026 (1.32)	-0.0119** (-1.98)	0.0063* (1.81)	0.0001 (0.07)
5-10 Years	0.0164 (1.37)	0.0128 (1.31)	0.0555*** (3.33)	0.0301** (2.24)	0.0057 (0.50)	-0.0407*** (-4.42)	0.0031 (0.96)	-0.0120*** (-2.63)	0.0082 (0.60)	-0.0046 (-0.58)	-0.0157*** (-3.26)
>10 Years	0.0320*** (3.12)	0.0146* (1.73)	0.0736*** (5.16)	0.0365*** (3.17)	0.0124 (1.25)	-0.0387*** (-4.89)	0.0030 (1.07)	-0.0187*** (-4.78)	-0.0137 (-1.16)	-0.0059 (-0.88)	-0.0179*** (-4.35)
Small	0.0476*** (7.84)	0.0397*** (7.98)	0.0590*** (6.98)	0.0763*** (11.16)	0.0426*** (7.24)	0.0083* (1.77)	0.0019 (1.15)	0.0074*** (3.20)	0.1530*** (21.90)	0.0407*** (10.11)	0.0113*** (4.61)
Medium	0.1161*** (15.77)	0.0616*** (10.19)	0.1053*** (10.26)	0.1669*** (20.15)	0.0688*** (9.65)	0.0336*** (5.90)	0.0036* (1.81)	0.0121*** (4.31)	0.2690*** (31.72)	0.0802*** (16.46)	0.0097*** (3.27)
Construction	0.0086 (0.84)	-0.0394*** (-4.67)	0.0483*** (3.37)	-0.0000 (-0.00)	0.0019 (0.19)	0.0115 (1.45)	0.0031 (1.11)	0.0014 (0.37)	0.0443*** (3.75)	-0.0311*** (-4.57)	0.0101** (2.44)
Trade	-0.0090 (-1.08)	-0.0386*** (-5.65)	0.0222* (1.92)	0.0150 (1.60)	0.0178** (2.21)	0.0198*** (3.07)	0.0045** (1.98)	-0.0011 (-0.35)	-0.0002 (-0.02)	-0.0369*** (-6.71)	0.0040 (1.19)
Services	-0.0140* (-1.81)	-0.0441*** (-6.93)	-0.0306*** (-2.83)	-0.0227*** (-2.60)	-0.0668*** (-8.89)	0.0137** (2.28)	-0.0006 (-0.28)	0.0020 (0.68)	0.0243*** (2.72)	-0.0462*** (-8.99)	0.0096*** (3.07)
Exporters	0.0281*** (5.02)	0.0215*** (4.67)	0.0395*** (5.06)	0.0126** (1.99)	0.0321*** (5.91)	0.0086** (1.98)	0.0016 (1.03)	0.0046** (2.17)	0.0292*** (4.52)	0.0205*** (5.52)	0.0043* (1.91)
Innovators	0.0228*** (4.11)	0.0376*** (8.26)	0.0306*** (3.96)	0.0264*** (4.23)	0.0255*** (4.74)	0.0250*** (5.83)	0.0041*** (2.68)	0.0049** (2.32)	0.0016 (0.26)	0.0159*** (4.31)	0.0110*** (4.91)
Trading Distress	0.0036*** (2.62)	-0.0026** (-2.29)	-0.0080*** (-4.16)	-0.0059*** (-3.78)	-0.0031** (-2.29)	0.0013 (1.23)	0.0004 (0.96)	0.0009* (1.71)	-0.0041** (-2.57)	-0.0028*** (-3.06)	-0.0008 (-1.42)
Financial Distress	-0.0199*** (-11.35)	0.0082*** (5.71)	0.0244*** (9.98)	0.0057*** (2.88)	0.0027 (1.57)	0.0062*** (4.59)	0.0019*** (4.05)	-0.0007 (-1.03)	-0.0063*** (-3.12)	0.0062*** (5.29)	0.0022*** (3.11)
Corp Tax Rate	0.0063*** (8.18)	0.0043*** (6.73)	-0.0002 (-0.22)	0.0102*** (11.81)	-0.0046*** (-6.15)	-0.0016*** (-2.76)	0.0003 (1.38)	-0.0005* (-1.74)	0.0015* (1.66)	0.0014*** (2.84)	-0.0004 (-1.40)
Inflation Rate	0.0090 (1.63)	-0.0115** (-2.52)	0.0441*** (5.71)	-0.0219*** (-3.52)	-0.0871*** (-16.21)	0.0019 (0.44)	-0.0161*** (-10.68)	0.0058*** (2.74)	0.1038*** (16.28)	-0.0133*** (-3.61)	0.0114*** (5.13)
GDPGrowthRate	0.0087*** (5.56)	0.0000 (0.04)	0.0060*** (2.73)	0.0064*** (3.63)	0.0074*** (4.81)	0.0021* (1.75)	-0.0022*** (-5.12)	0.0005 (0.82)	0.0067*** (3.70)	0.0005 (0.52)	0.0003 (0.40)
Constant	-0.1635*** (-5.98)	-0.0602*** (-2.68)	0.2550*** (6.71)	-0.2087*** (-6.79)	0.2273*** (8.59)	0.1226*** (5.80)	-0.0002 (-0.02)	0.0357*** (3.43)	0.0419 (1.33)	0.0155 (0.86)	0.0299*** (2.71)

Observations	18430	18552	18748	18633	18548	18588	18416	18388	18693	18451	18196
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t statistics in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

### Family-owned SMEs v Professionally owned SMEs

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0222*** (2.91)	0.0284*** (4.61)	0.1019*** (10.34)	0.0679*** (8.32)	0.0115 (1.55)	-0.0214*** (-3.67)	0.0017 (0.86)	-0.0077** (-2.57)	0.0187** (2.22)	0.0047 (0.91)	-0.0108*** (-3.50)
5-10 Years	0.0267 (1.63)	0.0227* (1.71)	0.0560*** (2.66)	0.0322* (1.84)	-0.0054 (-0.34)	-0.0520*** (-4.18)	0.0034 (0.80)	-0.0137** (-2.12)	-0.0121 (-0.67)	0.0034 (0.30)	-0.0091 (-1.38)
>10 Years	0.0377*** (2.66)	0.0256** (2.24)	0.0611*** (3.36)	0.0428*** (2.83)	-0.0033 (-0.24)	-0.0530*** (-4.93)	0.0010 (0.28)	-0.0216*** (-3.86)	-0.0311** (-2.00)	-0.0062 (-0.64)	-0.0140** (-2.45)
Small	0.0565*** (7.00)	0.0402*** (6.20)	0.0549*** (5.30)	0.0835*** (9.73)	0.0469*** (6.04)	0.0088 (1.44)	0.0020 (0.97)	0.0136*** (4.29)	0.1629*** (18.42)	0.0457*** (8.31)	0.0081** (2.47)
Medium	0.1118*** (12.56)	0.0576*** (8.04)	0.0846*** (7.39)	0.1500*** (15.84)	0.0568*** (6.63)	0.0248*** (3.67)	0.0019 (0.82)	0.0133*** (3.79)	0.2549*** (26.11)	0.0809*** (13.35)	0.0075** (2.09)
Construction	0.0018 (0.14)	-0.0465*** (-4.44)	0.0414** (2.48)	-0.0253* (-1.83)	0.0006 (0.05)	-0.0083 (-0.84)	0.0013 (0.37)	0.0030 (0.58)	0.0494*** (3.47)	-0.0313*** (-3.52)	0.0065 (1.24)
Trade	-0.0062 (-0.61)	-0.0395*** (-4.87)	0.0254** (1.96)	0.0146 (1.36)	0.0234** (2.41)	0.0040 (0.53)	0.0029 (1.09)	0.0012 (0.29)	0.0037 (0.34)	-0.0402*** (-5.85)	0.0006 (0.14)
Services	-0.0223** (-2.42)	-0.0404*** (-5.45)	-0.0352** (-2.97)	-0.0386*** (-3.94)	-0.0785*** (-8.85)	0.0015 (0.21)	-0.0055** (-2.25)	0.0028 (0.78)	0.0284*** (2.81)	-0.0545*** (-8.67)	0.0025 (0.66)
Exporters	0.0180** (2.53)	0.0286*** (5.01)	0.0441*** (4.84)	0.0109 (1.44)	0.0396*** (5.79)	0.0092* (1.71)	-0.0015 (-0.79)	0.0012 (0.45)	0.0282*** (3.63)	0.0265*** (5.48)	0.0057** (2.00)
Innovators	0.0242*** (3.45)	0.0360*** (6.38)	0.0248*** (2.75)	0.0284*** (3.80)	0.0253*** (3.75)	0.0252*** (4.74)	0.0030* (1.66)	0.0067** (2.41)	0.0034 (0.44)	0.0082* (1.72)	0.0089*** (3.12)
Trading Distress	0.0054*** (3.10)	-0.0037*** (-2.65)	-0.0032 (-1.40)	-0.0075*** (-3.99)	-0.0055*** (-3.28)	-0.0003 (-0.23)	0.0008 (1.63)	-0.0001 (-0.15)	-0.0024 (-1.24)	-0.0036*** (-3.02)	-0.0010 (-1.42)
Financial Distress	-0.0292*** (-13.09)	0.0097*** (5.38)	0.0235*** (A0)	0.0080*** (3.35)	0.0046** (2.13)	0.0084*** (4.93)	0.0009 (1.60)	-0.0014 (-1.54)	-0.0065*** (-2.67)	0.0082*** (5.41)	0.0028*** (3.14)
Corp Tax Rate	0.0062*** (6.42)	0.0049*** (6.28)	-0.0021* (-1.67)	0.0102*** (9.90)	-0.0050*** (-5.34)	-0.0023*** (-3.09)	0.0001 (0.59)	-0.0004 (-0.95)	-0.0022** (-2.08)	0.0014*** (2.12)	-0.0008* (-1.92)
Inflation Rate	0.0098 (1.41)	-0.0140** (-2.51)	0.0542*** (6.11)	-0.0194*** (-2.64)	-0.0937*** (-14.07)	0.0064 (1.23)	-0.0153*** (-8.49)	0.0063*** (2.30)	0.1181*** (15.60)	-0.0192*** (-4.08)	0.0145*** (5.21)
GDPGrowthRate	0.0096*** (4.93)	0.0002 (0.11)	0.0036 (1.45)	0.0064*** (3.08)	0.0093*** (4.93)	0.0021 (1.38)	-0.0025*** (-4.76)	0.0003 (0.44)	0.0038* (1.79)	0.0004 (0.31)	-0.0001 (-0.14)
Constant	-0.1469*** (-0.1469***)	-0.1002*** (-0.1002***)	0.2455*** (0.2455***)	-0.2489*** (-0.2489***)	0.2786*** (0.1957***)	0.0094 (0.0094)	0.0425*** (0.0425***)	0.1329*** (0.1329***)	0.0226 (0.0226)	0.0526*** (0.0526***)	

(-4.14)	(-3.51)	(5.40)	(-6.60)	(8.17)	(7.28)	(1.01)	(3.04)	(3.43)	(0.94)	(3.66)	
Observations	13310	13386	13516	13476	13413	13401	13282	13260	13481	13316	13119

t statistics in parentheses \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

### RQ1 Robustness I – Without Innovation Summarised

#### Family-owned SMEs v Solely owned SMEs

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0438*** (11.90)	0.0202*** (6.67)	0.0167*** (3.30)	0.0276*** (6.66)	0.0363*** (10.07)	0.0117*** (4.07)	0.0006 (0.55)	0.0017 (1.30)	-0.0057 (-1.38)	0.0041* (1.71)	0.0004 (0.34)
5-10 Years	0.0348*** (4.03)	0.0000 (0.01)	0.0524*** (4.38)	0.0196** (2.00)	-0.0009 (-0.10)	-0.0352*** (-4.42)	-0.0017 (-0.65)	-0.0090** (-2.06)	0.0189* (1.84)	-0.0078 (-1.19)	-0.0087** (-2.12)
>10 Years	0.0381*** (5.25)	0.0060 (0.94)	0.0676*** (6.60)	0.0335*** (4.01)	0.0019 (0.25)	-0.0430*** (-6.06)	-0.0007 (-0.33)	-0.0181*** (-4.64)	0.0006 (0.07)	-0.0110* (-1.91)	-0.0152*** (-4.13)
Small	0.0472*** (11.20)	0.0453*** (12.67)	0.0625*** (10.58)	0.0781*** (16.37)	0.0409*** (9.75)	0.0098*** (2.97)	0.0000 (0.03)	0.0065*** (4.42)	0.1493*** (31.06)	0.0423*** (15.66)	0.0074*** (4.81)
Medium	0.1132*** (19.73)	0.0595*** (12.88)	0.1047*** (14.35)	0.1649*** (25.54)	0.0778*** (14.20)	0.0277*** (6.33)	0.0020 (1.23)	0.0124*** (5.96)	0.2582*** (39.39)	0.0761*** (19.00)	0.0082*** (4.18)
Construction	0.0053 (0.72)	-0.0350*** (-5.68)	0.0255** (2.53)	-0.0111 (-1.36)	-0.0020 (-0.27)	0.0036 (0.66)	0.0005 (0.25)	0.0015 (0.63)	0.0486*** (5.98)	-0.0187*** (-3.69)	0.0049** (2.02)
Trade	-0.0102* (-1.77)	-0.0306*** (-5.97)	0.0189** (2.32)	0.0103 (1.53)	0.0232*** (3.73)	0.0160*** (3.63)	0.0017 (0.95)	0.0021 (1.18)	-0.0056 (-0.91)	-0.0244*** (-6.10)	0.0020 (1.11)
Services	-0.0091* (-1.71)	-0.0401*** (-8.43)	-0.0401*** (-5.31)	-0.0330*** (-5.43)	-0.0743*** (-13.80)	0.0120*** (2.98)	-0.0034** (-2.21)	0.0050*** (2.92)	0.0228*** (3.94)	-0.0351*** (-9.56)	0.0057*** (3.38)
Exporters	0.0340*** (8.65)	0.0266*** (8.22)	0.0464*** (8.56)	0.0225*** (5.08)	0.0388*** (10.15)	0.0175*** (5.73)	0.0022* (1.96)	0.0048*** (3.54)	0.0278*** (6.34)	0.0212*** (8.32)	0.0041*** (3.03)
Trading Distress	0.0008 (0.80)	-0.0030*** (-3.72)	-0.0092*** (-6.91)	-0.0050*** (-4.64)	-0.0036*** (-3.78)	0.0004 (0.55)	0.0002 (0.58)	0.0001 (0.35)	-0.0057*** (-5.27)	-0.0026*** (-4.07)	-0.0005 (-1.38)
Financial Distress	-0.0197*** (-15.97)	0.0077*** (7.62)	0.0264*** (15.55)	0.0107*** (7.83)	0.0051*** (4.18)	0.0094*** (9.85)	0.0022*** (5.99)	-0.0008* (-1.87)	-0.0068*** (-4.98)	0.0054*** (6.88)	0.0014*** (3.38)
Corp Tax Rate	0.0058*** (10.28)	0.0051*** (10.19)	-0.0002 (-0.32)	0.0108*** (16.75)	-0.0056*** (-10.98)	-0.0022*** (-5.25)	0.0018*** (8.09)	-0.0001 (-0.66)	0.0021*** (3.44)	0.0016*** (4.50)	-0.0003 (-1.40)
Inflation Rate	0.0073* (1.80)	-0.0212*** (-6.36)	0.0574*** (10.49)	-0.0138*** (-3.07)	-0.0864*** (-22.86)	0.0075** (2.47)	-0.0171*** (-12.67)	0.0038*** (2.76)	0.0938*** (20.92)	-0.0145*** (-5.63)	0.0049*** (3.53)
GDPGrowthRate	0.0081*** (7.93)	-0.0015 (-1.34)	0.0066*** (4.36)	0.0060*** (4.67)	0.0018** (2.00)	0.0013* (1.69)		0.0002 (0.70)	0.0070*** (6.00)	0.0006 (0.78)	0.0004 (1.35)

Observations	47378	47603	48279	48002	47839	47735	47246	47204	48072	47358	46862
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*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Family-owned SMEs v Professionally owned SMEs

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0233*** (4.51)	0.0322*** (8.05)	0.1008*** (15.23)	0.0713*** (13.48)	0.0116** (2.23)	-0.0211*** (-4.84)	-0.0003 (-0.22)	-0.0098*** (-4.66)	0.0250*** (4.58)	0.0015 (0.43)	-0.0059*** (-2.98)
5-10 Years	0.0311*** (2.58)	0.0035 (0.36)	0.0415*** (2.71)	0.0318** (2.51)	-0.0118 (-0.94)	-0.0502*** (-4.56)	-0.0029 (-0.76)	-0.0152** (-2.40)	-0.0211 (-1.52)	0.0014 (0.16)	-0.0048 (-0.90)
>10 Years	0.0365*** (3.55)	0.0096 (1.11)	0.0483*** (3.66)	0.0492*** (4.55)	-0.0154 (-1.40)	-0.0566*** (-5.72)	-0.0044 (-1.30)	-0.0230*** (-3.99)	-0.0291** (-2.39)	-0.0050 (-0.63)	-0.0112** (-2.38)
Small	0.0574*** (10.42)	0.0446*** (9.99)	0.0614*** (8.51)	0.0873*** (15.10)	0.0540*** (9.89)	0.0110** (2.52)	-0.0011 (-0.74)	0.0122*** (6.12)	0.1584*** (27.67)	0.0475*** (14.10)	0.0058*** (2.99)
Medium	0.1109*** (17.22)	0.0586*** (11.42)	0.0888*** (11.08)	0.1566*** (22.95)	0.0772*** (12.43)	0.0214*** (4.35)	0.0014 (0.73)	0.0154*** (6.83)	0.2466*** (36.61)	0.0799*** (18.90)	0.0079*** (3.59)
Construction	0.0017 (0.17)	-0.0384*** (-5.05)	0.0240** (2.02)	-0.0188* (-1.90)	-0.0026 (-0.26)	-0.0044 (-0.63)	-0.0009 (-0.33)	0.0011 (0.33)	0.0537*** (5.37)	-0.0168** (-2.48)	0.0055 (1.61)
Trade	-0.0082 (-1.14)	-0.0359*** (-5.99)	0.0290*** (3.17)	0.0122 (1.57)	0.0293*** (3.84)	0.0122** (2.21)	0.0010 (0.45)	0.0035 (1.37)	0.0030 (0.41)	-0.0263*** (-5.28)	0.0022 (0.96)
Services	-0.0201*** (-3.10)	-0.0399*** (-7.22)	-0.0429*** (-5.19)	-0.0384*** (-5.55)	-0.0904*** (-14.15)	0.0036 (0.73)	-0.0065*** (-3.42)	0.0037* (1.66)	0.0295*** (4.47)	-0.0436*** (-9.86)	0.0033 (1.56)
Exporters	0.0268*** (5.30)	0.0302*** (7.42)	0.0557*** (8.80)	0.0214*** (4.00)	0.0487*** (9.96)	0.0189*** (4.90)	-0.0007 (-0.53)	0.0014 (0.77)	0.0314*** (5.87)	0.0256*** (7.54)	0.0052*** (2.96)
Trading Distress	0.0014 (1.15)	-0.0037*** (-3.68)	-0.0042*** (-2.69)	-0.0054*** (-4.03)	-0.0050*** (-4.08)	-0.0015 (-1.60)	0.0006* (1.74)	-0.0002 (-0.51)	-0.0044*** (-3.32)	-0.0039*** (-4.74)	-0.0002 (-0.35)
Financial Distress	-0.0265*** (-16.74)	0.0077*** (6.05)	0.0251*** (12.52)	0.0116*** (6.95)	0.0054*** (3.47)	0.0103*** (8.47)	0.0019*** (4.27)	-0.0016*** (-2.77)	-0.0071*** (-4.21)	0.0076*** (7.28)	0.0013** (2.32)
Corp Tax Rate	0.0055*** (7.80)	0.0056*** (9.17)	-0.0024*** (-2.77)	0.0104*** (13.66)	-0.0062*** (-9.54)	-0.0026*** (-5.19)	0.0014*** (5.67)	-0.0001 (-0.46)	-0.0012* (-1.74)	0.0015*** (3.25)	-0.0004* (-1.75)
Inflation Rate	0.0085* (1.66)	-0.0204*** (-4.97)	0.0703*** (11.16)	-0.0160*** (-2.97)	-0.0942*** (-19.84)	0.0150*** (3.93)	-0.0149*** (-9.72)	0.0063*** (3.40)	0.1091*** (20.46)	-0.0180*** (-5.41)	0.0066*** (3.81)
GDPGrowthRate	0.0094*** (7.31)	-0.0014 (-1.01)	0.0043** (2.52)	0.0053*** (3.52)	0.0028** (2.35)	0.0013 (1.33)	omitted	0.0002 (0.51)	0.0044*** (3.15)	0.0002 (0.20)	0.0004 (0.98)
Observations	35683	35838	36322	36143	36043	35851	35523	35515	36173	35649	35154

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

### RQ1 Robustness J – Wave Dummies Summarised

Family-owned SMEs v Solely owned SMEs

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0420*** (8.10)	0.0162*** (3.78)	0.0243*** (3.34)	0.0229*** (3.91)	0.0404*** (8.12)	0.0077* (1.92)	0.0020 (1.40)	0.0016 (0.80)	-0.0163*** (-2.71)	0.0057 (1.63)	-0.0023 (-1.11)
5-10 Years	0.0207* (1.79)	0.0136 (1.40)	0.0564*** (3.46)	0.0316** (2.39)	0.0072 (0.61)	-0.0421*** (-4.00)	0.0040 (1.32)	-0.0127** (-2.07)	0.0136 (0.95)	-0.0056 (-0.63)	-0.0127** (-2.26)
>10 Years	0.0351*** (3.58)	0.0145* (1.79)	0.0726*** (5.23)	0.0343*** (3.07)	0.0101 (1.00)	-0.0407*** (-4.30)	0.0030 (1.29)	-0.0190*** (-3.45)	-0.0111 (-0.90)	-0.0076 (-0.99)	-0.0142*** (-2.79)
Small	0.0503*** (8.44)	0.0417*** (8.32)	0.0584*** (6.90)	0.0759*** (11.27)	0.0425*** (7.27)	0.0076* (1.66)	0.0017 (1.02)	0.0077*** (3.37)	0.1545*** (22.06)	0.0430*** (10.98)	0.0113*** (4.48)
Medium	0.1104*** (13.71)	0.0622*** (9.47)	0.1039*** (9.98)	0.1644*** (18.07)	0.0668*** (8.97)	0.0340*** (5.45)	0.0037 (1.60)	0.0128*** (4.10)	0.2667*** (28.32)	0.0791*** (13.69)	0.0104*** (3.30)
Construction	0.0150 (1.42)	-0.0314*** (-3.61)	0.0487*** (3.38)	0.0023 (0.20)	0.0089 (0.84)	0.0105 (1.38)	0.0025 (0.88)	0.0014 (0.35)	0.0442*** (3.75)	-0.0194*** (-2.66)	0.0093** (2.25)
Trade	-0.0057 (-0.70)	-0.0296*** (-4.17)	0.0223* (1.93)	0.0168* (1.81)	0.0225*** (2.67)	0.0191*** (3.15)	0.0030 (1.30)	-0.0006 (-0.21)	-0.0023 (-0.26)	-0.0241*** (-4.22)	0.0029 (1.01)
Services	-0.0093 (-1.25)	-0.0362*** (-5.48)	-0.0300*** (-2.80)	-0.0204** (-2.42)	-0.0620*** (-8.45)	0.0131** (2.36)	-0.0014 (-0.71)	0.0019 (0.69)	0.0220*** (2.63)	-0.0348*** (-6.63)	0.0082*** (3.05)
Exporters	0.0282*** (5.06)	0.0200*** (4.38)	0.0402*** (5.16)	0.0155** (2.47)	0.0362*** (6.78)	0.0099** (2.30)	0.0013 (0.84)	0.0038* (1.83)	0.0271*** (4.25)	0.0198*** (5.35)	0.0027 (1.21)
Innovators	0.0229*** (4.19)	0.0359*** (8.22)	0.0302*** (3.92)	0.0257*** (4.19)	0.0242*** (4.66)	0.0237*** (5.70)	0.0040*** (2.75)	0.0049** (2.41)	0.0025 (0.39)	0.0160*** (4.56)	0.0105*** (4.89)
Trading Distress	0.0032** (2.32)	-0.0025** (-2.25)	-0.0072*** (-3.75)	-0.0044*** (-2.86)	-0.0016 (-1.22)	0.0018* (1.66)	0.0003 (0.80)	0.0005 (1.06)	-0.0059*** (-3.71)	-0.0028*** (-3.07)	-0.0014*** (-2.61)
Financial Distress	-0.0188*** (-10.93)	0.0074*** (5.31)	0.0244*** (10.11)	0.0065*** (3.40)	0.0034** (2.07)	0.0060*** (4.58)	0.0021*** (4.22)	-0.0009 (-1.35)	-0.0066*** (-3.33)	0.0056*** (5.03)	0.0017** (2.57)
Corp Tax Rate	0.0065*** (8.14)	0.0050*** (7.05)	-0.0007 (-0.61)	0.0102*** (11.16)	-0.0047*** (-6.59)	-0.0018*** (-3.18)	0.0013*** (4.64)	-0.0003 (-1.07)	0.0020** (2.33)	0.0016*** (3.12)	-0.0001 (-0.44)
Inflation Rate	0.0113* (1.87)	-0.0179*** (-3.69)	0.0553*** (6.76)	-0.0048 (-0.72)	-0.0737*** (-13.44)	0.0073 (1.61)	-0.0140*** (-7.53)	0.0017 (0.81)	0.1035*** (15.02)	-0.0163*** (-4.22)	0.0028 (1.26)
GDPGrowthRate	0.0082*** (5.65)	0.0008 (0.50)	0.0044** (2.00)	0.0047** (2.56)	0.0019 (1.48)	0.0008 (0.76)		0.0008 (1.59)	0.0077*** (4.51)	0.0011 (1.03)	0.0012** (2.30)
wave=13	0.0030 (0.45)	-0.0178*** (-3.26)	0.0395*** (4.29)	0.0630*** (8.60)	0.0643*** (10.89)	0.0238*** (4.74)	0.0055*** (3.62)	-0.0143*** (-5.44)	-0.0204*** (-2.61)	-0.0090** (-2.07)	-0.0295*** (-10.11)
wave=15	0.0098 (1.54)	-0.0168*** (-3.17)	0.0288*** (3.28)	0.0578*** (8.31)	0.0816*** (13.71)	0.0208*** (4.38)	0.0071*** (4.05)	-0.0130*** (-5.08)	-0.0364*** (-5.02)	-0.0066 (-1.55)	-0.0262*** (-8.95)
Observations	21921	22033	22315	22180	22083	22096	21893	21865	22243	21956	21630

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Family-owned SMEs v Professionally owned SMEs

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0194*** (2.67)	0.0254*** (4.47)	0.1020*** (10.73)	0.0684*** (9.25)	0.0190*** (2.68)	-0.0190*** (-3.15)	0.0019 (0.97)	-0.0084*** (-2.66)	0.0117 (1.46)	0.0035 (0.72)	-0.0138*** (-3.96)
5-10 Years	0.0310* (1.95)	0.0240* (1.91)	0.0572*** (2.76)	0.0313* (1.83)	-0.0071 (-0.43)	-0.0537*** (-3.72)	0.0041 (0.93)	-0.0143* (-1.66)	-0.0117 (-0.61)	0.0038 (0.30)	-0.0081 (-1.09)
>10 Years	0.0410*** (3.03)	0.0266** (2.53)	0.0611*** (3.44)	0.0386*** (2.64)	-0.0101 (-0.71)	-0.0547*** (-4.18)	0.0012 (0.35)	-0.0226*** (-2.91)	-0.0339** (-2.05)	-0.0061 (-0.57)	-0.0117* (-1.78)
Small	0.0592*** (7.73)	0.0402*** (6.48)	0.0544*** (5.31)	0.0833*** (10.34)	0.0479*** (6.38)	0.0088 (1.49)	0.0019 (0.93)	0.0142*** (4.65)	0.1660*** (20.13)	0.0478*** (9.86)	0.0085*** (2.66)
Medium	0.1109*** (12.32)	0.0585*** (8.11)	0.0841*** (7.36)	0.1503*** (15.76)	0.0583*** (6.87)	0.0257*** (3.74)	0.0016 (0.66)	0.0142*** (4.24)	0.2536*** (26.22)	0.0815*** (13.38)	0.0073** (2.13)
Construction	0.0066 (0.49)	-0.0416*** (-3.99)	0.0421** (2.49)	-0.0228* (-1.65)	0.0073 (0.54)	-0.0081 (-0.84)	0.0005 (0.12)	0.0024 (0.46)	0.0486*** (3.39)	-0.0200** (-2.07)	0.0061 (1.11)
Trade	-0.0038 (-0.38)	-0.0322*** (-3.88)	0.0260** (2.00)	0.0176 (1.61)	0.0258** (2.49)	0.0046 (0.61)	0.0013 (0.42)	0.0011 (0.28)	0.0005 (0.05)	-0.0285*** (-3.98)	0.0006 (0.17)
Services	-0.0191** (-2.12)	-0.0341*** (-4.45)	-0.0348*** (-2.95)	-0.0365*** (-3.78)	-0.0751*** (-8.57)	0.0022 (0.32)	-0.0063** (-2.51)	0.0026 (0.76)	0.0257*** (2.69)	-0.0447*** (-6.98)	0.0022 (0.63)
Exporters	0.0181** (2.55)	0.0283*** (4.93)	0.0444*** (4.88)	0.0139* (1.85)	0.0448*** (6.61)	0.0102* (1.91)	-0.0017 (-0.90)	0.0003 (0.09)	0.0267*** (3.45)	0.0273*** (5.54)	0.0040 (1.43)
Innovators	0.0238*** (3.44)	0.0340*** (6.24)	0.0246*** (2.74)	0.0268*** (3.65)	0.0223*** (3.41)	0.0237*** (4.58)	0.0028 (1.55)	0.0067** (2.49)	0.0038 (0.49)	0.0088* (1.90)	0.0093*** (3.42)
Trading Distress	0.0047*** (2.69)	-0.0036** (-2.55)	-0.0027 (-1.19)	-0.0061*** (-3.29)	-0.0039** (-2.37)	0.0001 (0.11)	0.0007 (1.51)	-0.0004 (-0.64)	-0.0042** (-2.21)	-0.0035*** (-2.95)	-0.0018** (-2.52)
Financial Distress	-0.0277*** (-12.70)	0.0090*** (5.18)	0.0233*** (8.23)	0.0087*** (3.77)	0.0051** (2.41)	0.0079*** (4.75)	0.0010* (1.70)	-0.0015* (-1.71)	-0.0069*** (-2.86)	0.0077*** (5.20)	0.0024*** (2.73)
Corp Tax Rate	0.0063*** (6.37)	0.0055*** (6.37)	-0.0023* (-1.84)	0.0103*** (9.55)	-0.0053*** (-5.93)	-0.0023*** (-3.29)	0.0010*** (3.35)	-0.0002 (-0.49)	-0.0013 (-1.31)	0.0015** (2.19)	-0.0003 (-0.90)
Inflation Rate	0.0105 (1.41)	-0.0184*** (-3.11)	0.0601*** (6.47)	-0.0064 (-0.81)	-0.0802*** (-11.81)	0.0098* (1.79)	-0.0126*** (-5.92)	0.0028 (1.02)	0.1150*** (14.41)	-0.0217*** (-4.41)	0.0044 (1.60)
GDPGrowthRate	0.0093*** (5.05)	0.0004 (0.21)	0.0026 (1.03)	0.0045** (2.04)	0.0026 (1.59)	0.0009 (0.64)		0.0008 (1.15)	0.0053*** (2.61)	0.0009 (0.66)	0.0015** (2.28)
wave=13	-0.0031 (-0.37)	-0.0130* (-1.95)	0.0234** (2.18)	0.0576*** (6.62)	0.0848*** (11.26)	0.0212*** (3.38)	0.0056*** (2.81)	-0.0153*** (-4.42)	-0.0285*** (-3.07)	-0.0087 (-1.54)	-0.0399*** (-10.70)
wave=15	0.0067 (0.83)	-0.0056 (-0.85)	0.0144 (1.40)	0.0662*** (7.88)	0.0944*** (12.62)	0.0188*** (3.17)	0.0047** (2.30)	-0.0157*** (-4.75)	-0.0353*** (-4.03)	-0.0055 (-0.98)	-0.0353*** (-9.37)
Observations	16692	16774	16978	16903	16846	16802	16655	16631	16924	16705	16428

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

### RQ1 Robustness K – Mature Firms Subsample

Family-owned SMEs v Solely owned SMEs

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0429*** (7.23)	0.0191*** (3.95)	0.0163** (1.98)	0.0180*** (2.68)	0.0333*** (5.82)	0.0055 (1.23)	0.0002 (0.15)	0.0025 (1.18)	-0.0166** (-2.45)	0.0077* (1.95)	0.0004 (0.18)
Small	0.0551*** (8.20)	0.0435*** (7.81)	0.0635*** (6.68)	0.0806*** (10.65)	0.0485*** (7.32)	0.0099** (1.97)	0.0013 (0.73)	0.0075*** (3.17)	0.1529*** (19.88)	0.0426*** (9.89)	0.0110*** (4.17)
Medium	0.1251*** (14.04)	0.0680*** (9.49)	0.1092*** (9.61)	0.1728*** (17.44)	0.0721*** (8.78)	0.0361*** (5.42)	0.0035 (1.38)	0.0115*** (3.76)	0.2677*** (26.58)	0.0798*** (12.95)	0.0122*** (3.69)
Construction	0.0158 (1.35)	-0.0278*** (-2.88)	0.0567*** (3.58)	0.0077 (0.60)	0.0066 (0.55)	0.0138* (1.68)	0.0023 (0.72)	0.0007 (0.18)	0.0512*** (3.95)	-0.0172** (-2.15)	0.0113*** (2.61)
Trade	-0.0029 (-0.33)	-0.0318*** (-4.13)	0.0323** (2.55)	0.0165 (1.61)	0.0215** (2.27)	0.0231*** (3.54)	0.0026 (1.01)	0.0018 (0.60)	0.0001 (0.01)	-0.0204*** (-3.26)	0.0048* (1.68)
Services	-0.0026 (-0.32)	-0.0308*** (-4.22)	-0.0231* (-1.95)	-0.0168* (-1.78)	-0.0652*** (-7.92)	0.0164*** (2.76)	-0.0017 (-0.80)	0.0011 (0.39)	0.0276*** (2.97)	-0.0307*** (-5.32)	0.0102*** (3.65)
Exporters	0.0285*** (4.45)	0.0241*** (4.61)	0.0466*** (5.30)	0.0188*** (2.62)	0.0345*** (5.63)	0.0088* (1.84)	0.0018 (1.07)	0.0038* (1.71)	0.0279*** (3.87)	0.0210*** (4.93)	0.0026 (1.07)
Innovators	0.0165*** (2.61)	0.0349*** (6.98)	0.0272*** (3.10)	0.0272*** (3.85)	0.0234*** (3.91)	0.0199*** (4.26)	0.0049*** (2.97)	0.0046** (2.13)	0.0004 (0.05)	0.0180*** (4.47)	0.0075*** (3.19)
Trading Distress	0.0042*** (2.69)	-0.0032** (-2.47)	-0.0076*** (-3.52)	-0.0065*** (-3.67)	-0.0039** (-2.57)	0.0024** (2.05)	0.0001 (0.27)	0.0009* (0.27)	-0.0048*** (1.67)	-0.0021** (-2.69)	-0.0005 (-2.09)
Financial Distress	-0.0202*** (-10.24)	0.0092*** (5.74)	0.0247*** (9.08)	0.0076*** (3.48)	0.0044** (2.30)	0.0040*** (2.76)	0.0023*** (4.00)	-0.0011 (-1.62)	-0.0058*** (-2.59)	0.0060*** (4.73)	0.0020*** (2.62)
Corp Tax Rate	0.0065*** (7.12)	0.0051*** (6.34)	-0.0006 (-0.50)	0.0104*** (10.02)	-0.0049*** (-6.07)	-0.0017*** (-2.66)	0.0015*** (4.53)	-0.0002 (-0.82)	0.0025** (2.53)	0.0014** (2.37)	-0.0002 (-0.61)
Inflation Rate	0.0050 (0.77)	-0.0158*** (-2.97)	0.0459*** (5.23)	-0.0269*** (-3.72)	-0.0881*** (-14.67)	-0.0000 (-0.01)	-0.0154*** (-7.56)	0.0059*** (2.61)	0.1178*** (16.21)	-0.0142*** (-3.36)	0.0068*** (2.83)
GDPGrowthRate	0.0082*** (5.04)	-0.0004 (-0.22)	0.0055** (2.28)	0.0059*** (2.96)	0.0034** (2.40)	0.0008 (0.65)	0.0004 (0.77)	0.0071*** (3.78)	0.0008 (0.67)	0.0002 (0.30)	
Observations	17665	17757	17989	17881	17788	17793	17635	17623	17924	17703	17408

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Family-owned SMEs v Professionally owned SMEs

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
Family Firms	0.0258*** (3.16)	0.0295*** (4.67)	0.1037*** (9.81)	0.0654*** (7.77)	0.0164** (2.04)	-0.0168** (-2.55)	0.0008 (0.34)	-0.0059* (-1.81)	0.0126 (1.42)	0.0063 (1.15)	-0.0089** (-2.50)
Small	0.0631*** (7.39)	0.0434*** (6.32)	0.0603*** (5.28)	0.0932*** (10.36)	0.0507*** (6.03)	0.0102 (1.58)	0.0015 (0.68)	0.0143*** (4.63)	0.1716*** (19.04)	0.0468*** (8.76)	0.0085** (2.51)
Medium	0.1235*** (12.45)	0.0649*** (8.22)	0.0903*** (7.20)	0.1578*** (15.18)	0.0602*** (6.45)	0.0279*** (3.78)	0.0015 (0.59)	0.0155*** (4.66)	0.2524*** (24.47)	0.0794*** (12.14)	0.0090** (2.45)
Construction	0.0101 (0.68)	-0.0395*** (-3.43)	0.0405** (2.19)	-0.0151 (-0.98)	0.0048 (0.32)	0.0007 (0.07)	0.0003 (0.08)	0.0046 (0.81)	0.0549*** (3.49)	-0.0218** (-2.04)	0.0112* (1.84)
Trade	-0.0036 (-0.33)	-0.0358*** (-3.99)	0.0295** (2.09)	0.0220* (1.84)	0.0230** (2.02)	0.0075 (0.93)	0.0009 (0.27)	0.0017 (0.43)	0.0064 (0.56)	-0.0317*** (-4.03)	0.0047 (1.19)
Services	-0.0136 (-1.36)	-0.0287*** (-3.37)	-0.0345*** (-2.67)	-0.0330*** (-3.09)	-0.0823*** (-8.50)	0.0057 (0.78)	-0.0066** (-2.44)	0.0018 (0.51)	0.0293*** (2.79)	-0.0464*** (-6.50)	0.0054 (1.52)
Exporters	0.0174** (2.17)	0.0314*** (4.84)	0.0487*** (4.82)	0.0151* (1.77)	0.0423*** (5.54)	0.0077 (1.31)	-0.0014 (-0.66)	0.0000 (0.01)	0.0248*** (2.86)	0.0247*** (4.45)	0.0047 (1.53)
Innovators	0.0213*** (2.71)	0.0309*** (5.01)	0.0261*** (2.61)	0.0343*** (4.14)	0.0217*** (2.93)	0.0199*** (3.50)	0.0027 (1.36)	0.0063** (2.20)	0.0042 (0.49)	0.0106** (2.04)	0.0087*** (2.93)
Trading Distress	0.0062*** (3.15)	-0.0034** (-2.14)	-0.0045* (-1.79)	-0.0074*** (-3.55)	-0.0050*** (-2.70)	0.0011 (0.79)	0.0005 (0.96)	0.0001 (0.13)	-0.0052** (-2.44)	-0.0029** (-2.18)	-0.0014* (-1.83)
Financial Distress	-0.0286*** (-11.66)	0.0102*** (5.20)	0.0258*** (8.25)	0.0102*** (3.93)	0.0054** (2.31)	0.0064*** (3.53)	0.0010 (1.54)	-0.0023** (-2.55)	-0.0069*** (-2.58)	0.0077*** (4.67)	0.0027*** (2.79)
Corp Tax Rate	0.0062*** (5.57)	0.0057*** (5.95)	-0.0027** (-1.98)	0.0108*** (8.90)	-0.0053*** (-5.28)	-0.0022*** (-2.81)	0.0012*** (3.40)	-0.0002 (-0.39)	-0.0008 (-0.66)	0.0008 (1.09)	-0.0005 (-1.20)
Inflation Rate	0.0099 (1.25)	-0.0125* (-1.94)	0.0521*** (5.23)	-0.0234*** (-2.77)	-0.0984*** (-13.44)	0.0036 (0.62)	-0.0144*** (-6.25)	0.0088*** (2.98)	0.1328*** (15.63)	-0.0220*** (-4.11)	0.0122*** (3.98)
GDPGrowthRate	0.0090*** (4.42)	0.0001 (0.07)	0.0029 (1.06)	0.0058** (2.40)	0.0051*** (2.85)	0.0012 (0.79)	0.0005 (0.77)	0.0046** (2.06)	-0.0001 (-0.03)	-0.0002 (-0.18)	
Observations	13772	13851	14020	13957	13895	13859	13736	13722	13961	13794	13538

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## RQ2 Robustness Appendices

### RQ2 Robustness L – Institutional Setting

#### Bank Credit Lines

#### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0218** (2.09)	-0.0115 (-1.11)	-0.0081 (-0.81)	0.0374** (2.06)	-0.0086 (-0.76)	-0.0296* (-1.83)	0.0021 (0.33)
5-10 Years	0.0369 (1.49)	-0.0542** (-2.23)	0.0172 (0.75)	0.1018** (2.36)	-0.0405 (-1.32)	-0.0337 (-0.92)	-0.0210 (-1.26)
>10 Years	-0.0176 (-0.84)	-0.0039 (-0.19)	0.0203 (1.04)	0.1098*** (2.86)	-0.0681** (-2.47)	-0.0168 (-0.51)	-0.0200 (-1.31)
Small	0.0415*** (3.50)	-0.0072 (-0.61)	-0.0357*** (-3.07)	0.0107 (0.51)	-0.0068 (-0.50)	-0.0076 (-0.41)	0.0038 (0.49)
Medium	0.0772*** (5.27)	-0.0008 (-0.06)	-0.0810*** (-5.96)	0.1006*** (4.19)	-0.0531*** (-3.89)	-0.0448** (-2.12)	-0.0114 (-1.45)
Construction	0.0011 (0.05)	-0.0256 (-1.29)	0.0234 (1.23)	-0.0167 (-0.49)	0.0134 (0.57)	-0.0095 (-0.32)	0.0087 (0.70)
Trade	-0.0062 (-0.38)	0.0078 (0.49)	-0.0027 (-0.18)	0.0111 (0.40)	-0.0058 (-0.31)	-0.0082 (-0.34)	0.0031 (0.31)
Services	-0.0261* (-1.72)	-0.0036 (-0.24)	0.0290** (2.00)	0.0339 (1.32)	-0.0351** (-2.04)	-0.0029 (-0.13)	0.0023 (0.25)
Exporters	0.0230** (2.08)	-0.0084 (-0.76)	-0.0152 (-1.43)	-0.0237 (-1.25)	-0.0064 (-0.54)	0.0449*** (2.70)	-0.0169** (-2.33)
Innovators	0.0639*** (5.97)	-0.0613*** (-5.65)	-0.0039 (-0.38)	-0.0594*** (-3.30)	0.0043 (0.38)	0.0446*** (2.81)	0.0087 (1.33)
Trading Distress	-0.0038 (-1.44)	-0.0048* (-1.83)	0.0079*** (3.08)	-0.0065 (-1.45)	0.0033 (1.16)	0.0004 (0.11)	0.0019 (1.11)
Financial Distress	0.0299*** (9.49)	-0.0506*** (-16.16)	0.0195*** (6.37)	-0.0513*** (-10.21)	0.0181*** (5.44)	0.0274*** (5.97)	0.0064*** (3.19)
Corp Tax Rate	0.0176** (2.26)	-0.0019 (-0.23)	-0.0137* (-1.79)	0.0074 (0.61)	-0.0104 (-1.31)	0.0101 (0.96)	-0.0068 (-1.45)
Cred Depth Index	-0.0592** (-2.21)	0.0195 (0.73)	0.0224 (0.85)	-0.1419*** (-3.23)	0.0077 (0.28)	0.0999** (2.55)	0.0301 (1.50)
Legal Rights Index	0.0838*** (4.62)	-0.0197 (-1.06)	-0.0455*** (-2.62)	0.1330*** (4.06)	-0.0707*** (-3.50)	-0.0221 (-0.75)	-0.0296** (-2.01)
Enforce Contracts Cost	0.0225* (1.87)	-0.0075 (-0.60)	-0.0133 (-1.12)	-0.0034 (-0.18)	-0.0114 (-0.92)	0.0238 (1.46)	-0.0097 (-1.30)
Resolve Insolvency Rate	-0.0049*** (-5.59)	0.0028*** (3.11)	0.0019** (2.15)	-0.0022 (-1.54)	0.0030*** (3.30)	-0.0009 (-0.74)	-0.0004 (-0.71)
Gen Pop Trust Edelman	0.0031 (1.34)	0.0011 (0.46)	-0.0032 (-1.46)	0.0115*** (3.04)	-0.0056** (-2.29)	-0.0043 (-1.27)	-0.0018 (-1.18)
Capital Regulatory Index	-0.0386 (-1.11)	0.0616* (1.76)	-0.0355 (-1.05)	-0.1630*** (-2.83)	0.0319 (0.90)	0.1060** (2.07)	0.0098 (0.39)
Observations	8918	8918	8918	2832	2832	2832	2832

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0179*	-0.0053	-0.0112	0.0215	-0.0143	-0.0072	0.0006
	(1.91)	(-0.55)	(-1.20)	(1.29)	(-1.22)	(-0.52)	(0.09)
5-10 Years	0.0192	-0.0469**	0.0272	0.0720*	-0.0993***	-0.0033	0.0000
	(0.87)	(-2.09)	(1.28)	(1.74)	(-3.07)	(-0.10)	(.)
>10 Years	-0.0072	-0.0064	0.0102	0.0939***	-0.1065***	-0.0141	0.0000
	(-0.38)	(-0.33)	(0.56)	(2.59)	(-3.59)	(-0.49)	(.)
Small	0.1022***	-0.0437***	-0.0603***	0.0445**	-0.0246*	-0.0052	-0.0136*
	(9.57)	(-3.89)	(-5.47)	(2.16)	(-1.65)	(-0.31)	(-1.73)
Medium	0.1854***	-0.0666***	-0.1231***	0.1467***	-0.0954***	-0.0422**	-0.0152*
	(13.84)	(-5.06)	(-9.75)	(6.76)	(-6.82)	(-2.41)	(-1.76)
Construction	0.0006	-0.0139	0.0152	-0.0240	0.0285	-0.0135	0.0098
	(0.03)	(-0.74)	(0.85)	(-0.75)	(1.30)	(-0.50)	(0.79)
Trade	0.0059	0.0158	-0.0209	0.0215	0.0165	-0.0360*	-0.0006
	(0.42)	(1.06)	(-1.47)	(0.89)	(0.99)	(-1.78)	(-0.07)
Services	-0.0089	-0.0021	0.0131	-0.0072	0.0289*	-0.0255	0.0083
	(-0.68)	(-0.15)	(0.98)	(-0.32)	(1.84)	(-1.32)	(0.97)
Exporters	0.0252**	0.0038	-0.0282***	-0.0301*	0.0200*	0.0158	-0.0093
	(2.54)	(0.37)	(-2.85)	(-1.74)	(1.68)	(1.11)	(-1.37)
Innovators	0.0543***	-0.0530***	-0.0032	-0.0378**	0.0145	0.0247*	-0.0004
	(5.67)	(-5.22)	(-0.33)	(-2.30)	(1.26)	(1.83)	(-0.06)
Trading Distress	-0.0101***	-0.0047*	0.0142***	-0.0079*	0.0069**	0.0001	0.0004
	(-4.21)	(-1.89)	(5.96)	(-1.91)	(2.38)	(0.02)	(0.24)
Financial Distress	0.0175***	-0.0423***	0.0237***	-0.0427***	0.0226***	0.0166***	0.0032*
	(6.12)	(-14.23)	(8.32)	(-9.10)	(6.61)	(4.23)	(1.70)
Corp Tax Rate	0.0105	0.0006	-0.0086	-0.0044	-0.0157*	0.0176**	0.0003
	(1.52)	(0.08)	(-1.27)	(-0.39)	(-1.92)	(2.00)	(0.07)
Cred Depth Index	-0.0643***	0.0629**	-0.0017	-0.2377***	0.0394	0.1576***	0.0489**
	(-2.70)	(2.56)	(-0.07)	(-5.95)	(1.40)	(4.80)	(2.33)
Legal Rights Index	0.0408**	-0.0086	-0.0227	0.1111***	-0.0876***	-0.0112	-0.0141
	(2.38)	(-0.49)	(-1.36)	(3.57)	(-3.98)	(-0.45)	(-1.05)
Enforce Contracts Cost	0.0074	0.0021	-0.0060	-0.0441**	-0.0143	0.0517***	0.0039
	(0.69)	(0.19)	(-0.57)	(-2.54)	(-1.12)	(3.80)	(0.59)
Resolve Insolvency Rate	-0.0019**	0.0009	0.0008	-0.0003	0.0028***	-0.0021*	-0.0013*
	(-2.41)	(1.09)	(0.99)	(-0.21)	(2.94)	(-1.90)	(-1.93)
Gen Pop Trust Edelman	-0.0004	0.0026	-0.0013	0.0091**	-0.0068**	-0.0023	-0.0002
	(-0.20)	(1.13)	(-0.62)	(2.51)	(-2.55)	(-0.78)	(-0.17)
Capital Regulatory Index	-0.0366	0.0760**	-0.0346	-0.2769***	0.0475	0.1874***	0.0358
	(-1.18)	(2.36)	(-1.13)	(-5.36)	(1.32)	(4.53)	(1.51)
Observations	10310	10310	10310	2990	2990	2990	2839

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0567*** (4.10)	-0.0118 (-0.84)	-0.0419*** (-3.00)	0.0169 (0.67)	-0.0054 (-0.42)	-0.0073 (-0.30)	-0.0073 (-1.35)
5-10 Years	-0.0456 (-1.33)	-0.0259 (-0.76)	0.0680** (2.19)	0.0005 (0.01)	0.0073 (0.23)	0.0065 (0.12)	-0.0096 (-0.75)
>10 Years	-0.0449 (-1.52)	-0.0450 (-1.53)	0.0825*** (3.13)	0.0007 (0.01)	-0.0226 (-0.85)	0.0337 (0.74)	-0.0058 (-0.47)
Small	0.0733*** (4.63)	-0.0047 (-0.29)	-0.0686*** (-4.30)	0.0116 (0.41)	-0.0468*** (-3.09)	0.0399 (1.50)	-0.0006 (-0.10)
Medium	0.1245*** (6.34)	-0.0300 (-1.58)	-0.0975*** (-5.12)	0.0128 (0.39)	-0.0592*** (-3.65)	0.0490 (1.60)	-0.0056 (-1.00)
Construction	0.0269 (1.05)	-0.0401 (-1.63)	0.0166 (0.66)	-0.0658 (-1.59)	0.0065 (0.30)	0.0448 (1.15)	0.0211 (1.54)
Trade	-0.0169 (-0.86)	0.0334* (1.67)	-0.0152 (-0.77)	-0.0249 (-0.78)	-0.0076 (-0.45)	0.0372 (1.24)	-0.0040 (-1.13)
Services	-0.0529*** (-2.73)	0.0162 (0.82)	0.0388** (1.96)	-0.0542 (-1.64)	0.0111 (0.61)	0.0308 (1.01)	0.0081 (1.22)
Exporters	0.0631*** (4.40)	-0.0464*** (-3.16)	-0.0157 (-1.08)	-0.0179 (-0.70)	-0.0091 (-0.70)	0.0221 (0.91)	0.0073 (1.34)
Innovators	0.0284** (2.05)	-0.0342** (-2.41)	0.0081 (0.58)	-0.0597** (-2.48)	0.0135 (1.09)	0.0390* (1.70)	0.0080 (1.56)
Trading Distress	-0.0113*** (-3.23)	-0.0032 (-0.90)	0.0141*** (4.01)	0.0045 (0.74)	-0.0001 (-0.02)	-0.0047 (-0.82)	-0.0005 (-0.44)
Financial Distress	0.0103*** (2.45)	-0.0379*** (-8.88)	0.0267*** (6.36)	-0.0522*** (-7.57)	0.0159*** (4.30)	0.0354*** (5.33)	0.0008 (0.54)
Corp Tax Rate	0.0170** (2.06)	-0.0019 (-0.22)	-0.0154* (-1.81)	-0.0024 (-0.18)	-0.0039 (-0.53)	0.0048 (0.38)	0.0427 (0.71)
Cred Depth Index	0.1007*** (3.07)	-0.0331 (-1.04)	-0.0600* (-1.87)	-0.1937*** (-3.25)	0.0461 (1.61)	0.1588*** (2.69)	0.0690 (0.71)
Legal Rights Index	0.0503** (2.37)	-0.0142 (-0.66)	-0.0370* (-1.73)	0.1362*** (3.68)	-0.0683*** (-3.26)	-0.0673* (-1.89)	0.0605 (0.70)
Enforce Contracts Cost	0.0391*** (3.03)	-0.0107 (-0.80)	-0.0285** (-2.14)	-0.0303 (-1.44)	-0.0019 (-0.16)	0.0301 (1.51)	0.0559 (0.71)
Resolve Insolvency Rate	-0.0047*** (-3.91)	0.0020* (1.68)	0.0021* (1.79)	0.0016 (0.69)	0.0017 (1.44)	-0.0046** (-2.09)	0.0100 (0.70)
Gen Pop Trust Edelman	0.0033 (1.24)	0.0003 (0.12)	-0.0033 (-1.25)	0.0111** (2.48)	-0.0062** (-2.36)	-0.0059 (-1.39)	-0.0002 (-0.22)
Capital Regulatory Index	0.0723* (1.81)	0.0295 (0.74)	-0.0948** (-2.37)	-0.2403*** (-3.50)	0.0747** (2.26)	0.1635** (2.45)	0.0189 (0.70)
Observations	5816	5816	5816	1905	1905	1905	1905

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0034 (0.41)	0.0123 (1.16)	-0.0147 (-1.44)	-0.0149 (-0.72)	-0.0214* (-1.77)	0.0347* (1.93)	0.0016 (0.31)
5-10 Years	-0.0212 (-1.09)	-0.0680*** (-2.89)	0.0862*** (3.89)	-0.0131 (-0.27)	0.0216 (0.91)	0.0110 (0.25)	-0.0131 (-1.08)
>10 Years	-0.0197 (-1.17)	-0.0250 (-1.24)	0.0413** (2.22)	0.0365 (0.91)	0.0115 (0.62)	-0.0379 (-1.05)	-0.0077 (-0.65)
Small	0.0487*** (5.18)	-0.0171 (-1.40)	-0.0332*** (-2.79)	0.0348 (1.33)	-0.0218 (-1.43)	-0.0103 (-0.46)	0.0002 (0.02)
Medium	0.0937*** (7.94)	-0.0048 (-0.33)	-0.0915*** (-6.69)	0.0598** (2.15)	-0.0446*** (-2.98)	-0.0103 (-0.42)	-0.0035 (-0.54)
Construction	-0.0030 (-0.19)	-0.0383* (-1.90)	0.0377* (1.91)	-0.0180 (-0.44)	0.0228 (0.90)	-0.0181 (-0.53)	0.0075 (0.72)
Trade	0.0010 (0.08)	0.0068 (0.42)	-0.0110 (-0.70)	0.0206 (0.64)	0.0066 (0.34)	-0.0329 (-1.19)	0.0027 (0.43)
Services	0.0190 (1.63)	-0.0125 (-0.84)	-0.0088 (-0.61)	-0.0043 (-0.15)	-0.0086 (-0.50)	-0.0000 (-0.00)	0.0079 (1.30)
Exporters	0.0158* (1.79)	-0.0040 (-0.36)	-0.0119 (-1.11)	-0.0473** (-2.19)	0.0208* (1.69)	0.0220 (1.17)	0.0039 (0.73)
Innovators	0.0231*** (2.67)	-0.0209* (-1.89)	-0.0030 (-0.28)	-0.0237 (-1.12)	-0.0111 (-0.91)	0.0213 (1.16)	0.0121** (2.08)
Trading Distress	-0.0012 (-0.58)	-0.0186*** (-6.83)	0.0190*** (7.31)	-0.0005 (-0.09)	0.0018 (0.63)	-0.0024 (-0.53)	0.0002 (0.15)
Financial Distress	0.0116*** (4.42)	-0.0384*** (-11.51)	0.0259*** (8.09)	-0.0346*** (-5.89)	0.0157*** (4.58)	0.0181*** (3.45)	0.0013 (0.87)
Corp Tax Rate	0.0278*** (4.29)	-0.0085 (-1.00)	-0.0199** (-2.46)	-0.0037 (-0.26)	0.0117 (1.43)	-0.0101 (-0.81)	-0.0001 (-0.02)
Cred Depth Index	0.0336 (1.62)	0.0238 (0.89)	-0.0676*** (-2.60)	-0.1216*** (-2.60)	0.0165 (0.63)	0.0779* (1.87)	0.0423* (1.86)
Legal Rights Index	0.0569*** (3.56)	-0.0301 (-1.44)	-0.0236 (-1.19)	0.0538 (1.42)	0.0094 (0.46)	-0.0537 (-1.60)	-0.0239 (-1.41)
Enforce Contracts Cost	0.0475*** (4.79)	-0.0153 (-1.17)	-0.0340*** (-2.73)	-0.0284 (-1.30)	0.0217* (1.73)	0.0025 (0.13)	0.0023 (0.36)
Resolve Insolvency Rate	-0.0033*** (-4.49)	0.0031*** (3.25)	0.0003 (0.38)	0.0014 (0.80)	-0.0006 (-0.67)	-0.0011 (-0.69)	-0.0001 (-0.13)
Gen Pop Trust Edelman	0.0065*** (3.00)	-0.0024 (-0.85)	-0.0038 (-1.43)	0.0096* (1.86)	0.0020 (0.71)	-0.0110** (-2.44)	-0.0025 (-1.09)
Capital Regulatory Index	0.1196*** (4.40)	0.0380 (1.07)	-0.1633*** (-4.76)	-0.1325** (-2.21)	0.0641* (1.89)	0.0394 (0.75)	0.0436** (1.97)
Observations	9012	9012	9012	1576	1576	1576	1576

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## RQ2 Robustness M – Institutional Setting

### Bank Credit Lines

	Family-owned SMEs versus Professionally owned SMEs						
	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0600*** (4.20)	-0.0469*** (-3.22)	-0.0127 (-0.91)	-0.0075 (-0.30)	0.0046 (0.30)	0.0027 (0.12)	0.0013 (0.14)
5-10 Years	0.0374 (1.17)	-0.0307 (-0.99)	-0.0097 (-0.34)	0.1835*** (3.38)	-0.0787* (-1.94)	-0.0735 (-1.57)	-0.0226 (-1.31)
>10 Years	-0.0186 (-0.68)	0.0039 (0.15)	0.0116 (0.47)	0.1751*** (3.56)	-0.1133*** (-3.04)	-0.0449 (-1.05)	-0.0098 (-0.59)
Small	0.0176 (1.20)	0.0209 (1.40)	-0.0376*** (-2.60)	0.0295 (1.16)	-0.0000 (-0.00)	-0.0223 (-1.00)	-0.0085 (-0.90)
Medium	0.0670*** (3.97)	0.0213 (1.28)	-0.0895*** (-5.67)	0.1133*** (4.17)	-0.0482*** (-3.15)	-0.0522** (-2.18)	-0.0220** (-2.39)
Construction	-0.0156 (-0.66)	-0.0267 (-1.15)	0.0414* (1.85)	-0.0505 (-1.30)	0.0193 (0.77)	0.0071 (0.21)	0.0185 (1.21)
Trade	0.0034 (0.18)	0.0142 (0.78)	-0.0161 (-0.96)	0.0159 (0.54)	-0.0055 (-0.29)	-0.0113 (-0.43)	-0.0016 (-0.18)
Services	-0.0304* (-1.79)	-0.0080 (-0.48)	0.0376** (2.36)	0.0246 (0.89)	-0.0158 (-0.90)	-0.0176 (-0.73)	0.0053 (0.57)
Exporters	0.0088 (0.66)	-0.0147 (-1.12)	0.0063 (0.51)	-0.0316 (-1.48)	-0.0036 (-0.28)	0.0360* (1.90)	-0.0011 (-0.15)
Innovators	0.0648*** (5.06)	-0.0672*** (-5.23)	0.0006 (0.05)	-0.0362* (-1.79)	0.0144 (1.16)	0.0155 (0.86)	0.0069 (0.96)
Trading Distress	-0.0073** (-2.27)	-0.0038 (-1.20)	0.0104*** (3.46)	-0.0092* (-1.84)	0.0027 (0.85)	0.0035 (0.80)	0.0023 (1.30)
Financial Distress	0.0282*** (7.44)	-0.0500*** (-13.39)	0.0207*** (5.74)	-0.0487*** (-8.62)	0.0178*** (4.90)	0.0257*** (4.98)	0.0058*** (2.67)
Corp Tax Rate	0.0151* (1.71)	0.0046 (0.51)	-0.0176** (-2.06)	0.0032 (0.25)	-0.0080 (-0.96)	0.0098 (0.86)	-0.0029 (-0.60)
Cred Depth Index	-0.0692** (-2.19)	0.0599* (1.93)	-0.0055 (-0.18)	-0.0807 (-1.63)	-0.0245 (-0.82)	0.0834* (1.89)	0.0164 (0.68)
Legal Rights Index	0.0776*** (3.66)	-0.0205 (-0.97)	-0.0390* (-1.96)	0.0811** (2.23)	-0.0373* (-1.74)	-0.0228 (-0.69)	-0.0092 (-0.51)
Enforce Contracts Cost	0.0173 (1.25)	0.0081 (0.58)	-0.0232* (-1.73)	-0.0071 (-0.35)	-0.0071 (-0.54)	0.0238 (1.34)	-0.0064 (-0.83)
Resolve Insolvency Rate	-0.0042*** (-3.98)	0.0023** (2.14)	0.0015 (1.44)	-0.0016 (-0.99)	0.0026*** (2.62)	-0.0017 (-1.19)	0.0002 (0.29)
Gen Pop Trust Edelman	0.0022 (0.82)	0.0023 (0.83)	-0.0034 (-1.36)	0.0109*** (2.68)	-0.0048* (-1.91)	-0.0048 (-1.33)	-0.0007 (-0.48)
Capital Regulatory Index	-0.0615 (-1.52)	0.1112*** (2.80)	-0.0603 (-1.56)	-0.0916 (-1.44)	-0.0083 (-0.22)	0.1058* (1.87)	-0.0125 (-0.40)
Observations	6695	6695	6695	2198	2198	2198	2198

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

	Family-owned SMEs versus Professionally owned SMEs							
	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed	
Family Firms	0.0307** (2.35)	-0.0412*** (-3.01)	0.0106 (0.83)	-0.0334 (-1.57)	0.0149 (1.06)	0.0095 (0.53)	0.0098 (1.50)	
5-10 Years	-0.0248 (-0.86)	-0.0374 (-1.34)	0.0553** (2.05)	0.1123** (2.21)	-0.1238*** (-3.22)	0.0147 (0.35)	0.0053 (0.41)	
>10 Years	-0.0275 (-1.10)	0.0281 (1.15)	-0.0097 (-0.42)	0.1627*** (3.66)	-0.1287*** (-3.61)	-0.0392 (-1.10)	0.0083 (0.81)	
Small	0.0936*** (7.11)	-0.0369*** (-2.64)	-0.0576*** (-4.23)	0.0648*** (2.62)	-0.0465*** (-2.78)	-0.0092 (-0.46)	-0.0065 (-0.70)	
Medium	0.1758*** (11.59)	-0.0570*** (-3.71)	-0.1219*** (-8.27)	0.1412*** (5.50)	-0.0841*** (-5.00)	-0.0429** (-2.06)	-0.0154* (-1.66)	
Construction	-0.0294 (-1.38)	-0.0058 (-0.27)	0.0345 (1.64)	-0.0866** (-2.31)	0.0661** (2.52)	0.0064 (0.21)	0.0071 (0.53)	
Trade	0.0277* (1.66)	0.0109 (0.65)	-0.0364** (-2.34)	0.0212 (0.86)	0.0134 (0.83)	-0.0298 (-1.41)	-0.0038 (-0.46)	
Services	-0.0201 (-1.35)	0.0042 (0.28)	0.0176 (1.21)	-0.0060 (-0.25)	0.0247 (1.61)	-0.0210 (-1.04)	0.0035 (0.41)	
Exporters	0.0234** (1.96)	-0.0194 (-1.61)	-0.0017 (-0.15)	-0.0402** (-2.11)	0.0153 (1.23)	0.0219 (1.36)	0.0012 (0.18)	
Innovators	0.0631*** (5.45)	-0.0558*** (-4.68)	-0.0098 (-0.88)	-0.0249 (-1.39)	0.0130 (1.10)	0.0127 (0.84)	0.0021 (0.33)	
Trading Distress	-0.0100*** (-3.42)	-0.0067** (-2.27)	0.0158*** (5.70)	-0.0056 (-1.25)	0.0062** (2.08)	-0.0010 (-0.26)	-0.0007 (-0.44)	
Financial Distress	0.0228*** (6.62)	-0.0446*** (-12.81)	0.0208*** (6.30)	-0.0427*** (-8.36)	0.0195*** (5.56)	0.0184*** (4.21)	0.0046** (2.37)	
Corp Tax Rate	0.0192** (2.45)	-0.0070 (-0.87)	-0.0099 (-1.33)	-0.0167 (-1.46)	-0.0052 (-0.67)	0.0223** (2.41)	0.0017 (0.37)	
Cred Depth Index	-0.0599** (-2.14)	0.0763*** (2.73)	-0.0206 (-0.77)	-0.2262*** (-5.16)	0.0226 (0.80)	0.1728*** (4.54)	0.0684*** (2.63)	
Legal Rights Index	0.0631*** (3.12)	-0.0348* (-1.71)	-0.0191 (-1.01)	0.0660** (1.97)	-0.0505** (-2.33)	0.0075 (0.27)	-0.0450** (-2.57)	
Enforce Contracts Cost	0.0186 (1.52)	-0.0049 (-0.40)	-0.0106 (-0.92)	-0.0601*** (-3.40)	0.0017 (0.14)	0.0601*** (4.18)	-0.0024 (-0.35)	
Resolve Insolvency Rate	-0.0024*** (-2.62)	0.0020** (2.10)	0.0002 (0.20)	-0.0004 (-0.25)	0.0026*** (2.68)	-0.0027** (-2.05)	-0.0011* (-1.73)	
Gen Pop Trust Edelman	0.0035 (1.43)	-0.0018 (-0.71)	-0.0010 (-0.44)	0.0072* (1.95)	-0.0058** (-2.31)	-0.0006 (-0.20)	-0.0004 (-0.28)	
Capital Regulatory Index	-0.0280 (-0.77)	0.0704* (1.94)	-0.0401 (-1.17)	-0.2571*** (-4.61)	0.0406 (1.14)	0.1865*** (3.96)	0.0643** (2.26)	
Observations	7833	7833	7833	2430	2430	2430	2430	

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0107 (0.58)	-0.0174 (-0.95)	0.0086 (0.49)	-0.0234 (-0.81)	0.0275** (2.37)	-0.0068 (-0.24)	0.0033 (0.57)
5-10 Years	-0.0815** (-1.98)	0.0093 (0.24)	0.0692* (1.96)	0.0207 (0.33)	-0.0355 (-1.09)	0.0301 (0.52)	0.0000 (.)
>10 Years	-0.0969*** (-2.69)	0.0190 (0.57)	0.0707** (2.35)	0.0473 (0.89)	-0.0536* (-1.83)	0.0206 (0.43)	-0.0137 (-0.76)
Small	0.0724*** (3.84)	-0.0046 (-0.24)	-0.0660*** (-3.58)	0.0244 (0.76)	-0.0476*** (-3.04)	0.0377 (1.26)	-0.0142 (-1.23)
Medium	0.1161*** (5.39)	-0.0236 (-1.13)	-0.0908*** (-4.41)	0.0367 (1.05)	-0.0557*** (-3.34)	0.0250 (0.77)	-0.0119 (-0.93)
Construction	0.0403 (1.35)	-0.0270 (-0.96)	-0.0103 (-0.38)	-0.0241 (-0.54)	-0.0004 (-0.02)	0.0154 (0.36)	0.0044 (0.46)
Trade	0.0088 (0.40)	0.0281 (1.30)	-0.0367* (-1.80)	0.0101 (0.31)	-0.0219 (-1.34)	0.0093 (0.29)	0.0000 (.)
Services	-0.0582*** (-2.71)	0.0053 (0.25)	0.0533** (2.54)	-0.0332 (-0.95)	-0.0052 (-0.30)	0.0223 (0.67)	0.0056 (0.75)
Exporters	0.0524*** (3.10)	-0.0508*** (-3.07)	-0.0002 (-0.01)	-0.0127 (-0.47)	-0.0148 (-1.19)	0.0222 (0.85)	0.0122 (1.43)
Innovators	0.0267* (1.65)	-0.0308* (-1.93)	0.0047 (0.30)	-0.0273 (-1.07)	0.0166 (1.43)	0.0083 (0.34)	0.0012 (0.20)
Trading Distress	-0.0186*** (-4.55)	-0.0014 (-0.35)	0.0196*** (5.09)	0.0129** (2.01)	-0.0001 (-0.02)	-0.0117* (-1.89)	-0.0026 (-1.34)
Financial Distress	0.0160*** (3.26)	-0.0370*** (-7.70)	0.0203*** (4.41)	-0.0590*** (-7.93)	0.0130*** (3.67)	0.0433*** (5.93)	0.0028 (1.25)
Corp Tax Rate	0.0189** (2.02)	-0.0010 (-0.10)	-0.0190** (-2.09)	-0.0043 (-0.31)	-0.0001 (-0.02)	0.0033 (0.25)	0.0044 (1.08)
Cred Depth Index	0.1050*** (2.72)	-0.0036 (-0.10)	-0.0959*** (-2.67)	-0.1639** (-2.54)	0.0219 (0.80)	0.1604** (2.48)	-0.0011 (-0.06)
Legal Rights Index	0.0623** (2.53)	-0.0414* (-1.71)	-0.0231 (-0.99)	0.0986** (2.49)	-0.0406** (-2.08)	-0.0655* (-1.71)	0.0125 (0.73)
Enforce Contracts Cost	0.0427*** (2.89)	-0.0073 (-0.49)	-0.0365** (-2.54)	-0.0267 (-1.20)	0.0040 (0.38)	0.0251 (1.17)	0.0037 (0.67)
Resolve Insolvency Rate	-0.0059*** (-4.09)	0.0035** (2.53)	0.0018 (1.39)	0.0032 (1.27)	-0.0002 (-0.16)	-0.0044* (-1.80)	0.0000 (0.06)
Gen Pop Trust Edelman	0.0060** (1.98)	-0.0038 (-1.23)	-0.0023 (-0.82)	0.0052 (1.12)	-0.0031 (-1.31)	-0.0032 (-0.71)	0.0011 (0.87)
Capital Regulatory Index	0.0798* (1.72)	0.0583 (1.31)	-0.1348*** (-3.06)	-0.2070*** (-2.79)	0.0696** (2.23)	0.1534** (2.09)	-0.0001 (-0.00)
Observations	4762	4762	4762	1736	1736	1736	1132

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	-0.0139 (-1.25)	-0.0070 (-0.52)	0.0200 (1.58)	-0.0394* (-1.68)	0.0002 (0.02)	0.0364* (1.75)	0.0039 (0.70)
5-10 Years	-0.0147 (-0.59)	-0.0832*** (-2.84)	0.0931*** (3.46)	-0.0379 (-0.65)	0.0434* (1.81)	-0.0227 (-0.40)	0.0119 (1.21)
>10 Years	-0.0136 (-0.63)	-0.0340 (-1.34)	0.0425* (1.88)	0.0575 (1.18)	0.0205 (1.28)	-0.0955* (-1.96)	0.0074 (1.44)
Small	0.0539*** (4.47)	0.0027 (0.18)	-0.0561*** (-3.81)	0.0170 (0.55)	-0.0033 (-0.20)	-0.0086 (-0.32)	-0.0012 (-0.16)
Medium	0.0656*** (4.97)	0.0273* (1.65)	-0.0929*** (-5.87)	0.0714** (2.23)	-0.0302* (-1.86)	-0.0326 (-1.14)	-0.0051 (-0.71)
Construction	-0.0068 (-0.35)	-0.0348 (-1.48)	0.0392* (1.76)	-0.0067 (-0.16)	0.0044 (0.20)	-0.0062 (-0.16)	0.0025 (0.32)
Trade	-0.0074 (-0.50)	0.0146 (0.80)	-0.0090 (-0.53)	0.0352 (1.11)	-0.0025 (-0.15)	-0.0394 (-1.40)	0.0040 (0.64)
Services	0.0037 (0.28)	-0.0087 (-0.54)	0.0044 (0.29)	-0.0220 (-0.75)	-0.0030 (-0.20)	0.0102 (0.38)	0.0099 (1.59)
Exporters	0.0162 (1.51)	-0.0143 (-1.10)	-0.0021 (-0.17)	-0.0630*** (-2.66)	0.0193 (1.59)	0.0410* (1.92)	0.0009 (0.15)
Innovators	0.0235** (2.25)	-0.0123 (-0.96)	-0.0121 (-1.01)	-0.0042 (-0.18)	-0.0214* (-1.71)	0.0095 (0.46)	0.0151** (2.27)
Trading Distress	-0.0012 (-0.44)	-0.0172*** (-5.44)	0.0175*** (5.90)	-0.0027 (-0.48)	0.0008 (0.28)	-0.0010 (-0.20)	0.0017 (1.11)
Financial Distress	0.0088*** (2.77)	-0.0367*** (-9.40)	0.0268*** (7.28)	-0.0273*** (-4.31)	0.0127*** (3.76)	0.0128** (2.21)	0.0010 (0.63)
Corp Tax Rate	0.0244*** (3.32)	0.0046 (0.50)	-0.0289*** (-3.35)	-0.0096 (-0.65)	0.0051 (0.69)	0.0020 (0.15)	0.0010 (0.26)
Cred Depth Index	0.0253 (1.06)	0.0969*** (3.28)	-0.1326*** (-4.68)	-0.1604*** (-3.16)	0.0205 (0.81)	0.1284*** (2.69)	0.0148 (1.17)
Legal Rights Index	0.0537*** (2.89)	-0.0262 (-1.14)	-0.0217 (-1.00)	0.0398 (0.98)	-0.0052 (-0.26)	-0.0324 (-0.88)	-0.0071 (-0.55)
Enforce Contracts Cost	0.0424*** (3.75)	0.0108 (0.77)	-0.0541*** (-4.05)	-0.0373* (-1.65)	0.0118 (1.03)	0.0212 (1.04)	0.0026 (0.44)
Resolve Insolvency Rate	-0.0038*** (-4.48)	0.0026** (2.41)	0.0013 (1.35)	0.0036* (1.90)	-0.0005 (-0.60)	-0.0033* (-1.86)	0.0000 (0.04)
Gen Pop Trust Edelman	0.0055*** (2.20)	-0.0007 (-0.23)	-0.0040 (-1.42)	0.0050 (0.92)	0.0008 (0.30)	-0.0057 (-1.16)	-0.0012 (-0.64)
Capital Regulatory Index	0.1129*** (3.62)	0.1240*** (3.20)	-0.2417*** (-6.53)	-0.1484** (-2.33)	0.0428 (1.36)	0.0863 (1.47)	0.0207 (1.34)
Observations	7205	7205	7205	1392	1392	1392	1392

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## RQ2 Robustness N – PIIGS Dummy

### Bank Credit Lines

#### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0136 (1.41)	-0.0068 (-0.71)	-0.0054 (-0.58)	0.0314* (1.85)	-0.0013 (-0.13)	-0.0318** (-2.12)	0.0028 (0.47)
5-10 Years	0.0305 (1.34)	-0.0522** (-2.35)	0.0210 (1.00)	0.1116*** (2.73)	-0.0322 (-1.15)	-0.0549 (-1.53)	-0.0187 (-1.18)
>10 Years	-0.0215 (-1.10)	-0.0025 (-0.13)	0.0215 (1.19)	0.1256*** (3.44)	-0.0541** (-2.16)	-0.0470 (-1.45)	-0.0196 (-1.35)
Small	0.0492*** (4.53)	-0.0059 (-0.54)	-0.0441*** (-4.12)	0.0096 (0.49)	-0.0162 (-1.29)	0.0038 (0.22)	0.0026 (0.37)
Medium	0.0886*** (6.60)	-0.0034 (-0.26)	-0.0873*** (-6.98)	0.0856*** (3.84)	-0.0564*** (-4.39)	-0.0232 (-1.18)	-0.0125* (-1.78)
Construction	0.0021 (0.11)	-0.0160 (-0.89)	0.0141 (0.81)	-0.0263 (-0.84)	0.0141 (0.66)	0.0050 (0.18)	0.0055 (0.48)
Trade	-0.0134 (-0.91)	0.0193 (1.31)	-0.0065 (-0.46)	0.0018 (0.07)	-0.0024 (-0.14)	-0.0007 (-0.03)	0.0008 (0.09)
Services	-0.0342** (-2.46)	0.0106 (0.77)	0.0236* (1.75)	0.0299 (1.26)	-0.0318** (-2.02)	-0.0000 (-0.00)	0.0013 (0.14)
Exporters	0.0181* (1.80)	-0.0038 (-0.38)	-0.0156 (-1.61)	-0.0258 (-1.48)	-0.0032 (-0.29)	0.0423*** (2.77)	-0.0147** (-2.24)
Innovators	0.0585*** (6.03)	-0.0609*** (-6.19)	0.0019 (0.20)	-0.0557*** (-3.34)	0.0043 (0.40)	0.0432*** (2.96)	0.0071 (1.19)
Trading Distress	0.0014 (0.57)	-0.0085*** (-3.54)	0.0067*** (2.88)	-0.0076* (-1.87)	0.0026 (1.02)	0.0032 (0.89)	0.0012 (0.78)
Financial Distress	0.0330*** (11.48)	-0.0539*** (-18.87)	0.0197*** (6.99)	-0.0499*** (-10.67)	0.0181*** (5.83)	0.0266*** (6.30)	0.0054*** (3.04)
PIIGS	0.0958*** (9.92)	-0.1388*** (-14.39)	0.0418*** (4.42)	-0.0299* (-1.79)	-0.0177* (-1.67)	0.0503*** (3.44)	-0.0047 (-0.78)
Observations	12688	12688	12688	3846	3846	3846	3846

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0188** (2.18)	-0.0056 (-0.62)	-0.0124 (-1.44)	0.0299* (1.86)	-0.0126 (-1.13)	-0.0169 (-1.28)	-0.0000 (-0.01)
5-10 Years	0.0119 (0.59)	-0.0477** (-2.32)	0.0347* (1.80)	0.0834** (2.12)	-0.0850*** (-2.86)	-0.0173 (-0.52)	0.0203** (2.21)
>10 Years	-0.0066 (-0.39)	-0.0093 (-0.52)	0.0125 (0.76)	0.1098*** (3.18)	-0.0898*** (-3.32)	-0.0384 (-1.33)	0.0201*** (3.29)
Small	0.0944*** (9.65)	-0.0254** (-2.46)	-0.0679*** (-6.76)	0.0381** (1.98)	-0.0265* (-1.91)	0.0060 (0.39)	-0.0155** (-2.25)
Medium	0.1697*** (13.78)	-0.0438*** (-3.60)	-0.1286*** (-11.08)	0.1223*** (5.94)	-0.0887*** (-6.65)	-0.0212 (-1.28)	-0.0161** (-2.11)
Construction	-0.0077 (-0.47)	-0.0074 (-0.43)	0.0169 (1.03)	-0.0316 (-1.06)	0.0301 (1.46)	-0.0019 (-0.08)	0.0052 (0.48)
Trade	-0.0060 (-0.46)	0.0240* (1.76)	-0.0169 (-1.29)	0.0025 (0.11)	0.0165 (1.06)	-0.0161 (-0.87)	-0.0018 (-0.22)
Services	-0.0138 (-1.14)	0.0025 (0.20)	0.0131 (1.06)	-0.0151 (-0.71)	0.0262* (1.78)	-0.0141 (-0.81)	0.0058 (0.73)
Exporters	0.0187** (2.09)	0.0080 (0.85)	-0.0264*** (-2.96)	-0.0255 (-1.57)	0.0106 (0.95)	0.0231* (1.74)	-0.0103* (-1.71)
Innovators	0.0499*** (5.74)	-0.0527*** (-5.70)	0.0011 (0.13)	-0.0368** (-2.38)	0.0148 (1.37)	0.0207 (1.64)	0.0015 (0.27)
Trading Distress	-0.0066*** (-3.04)	-0.0080*** (-3.53)	0.0139*** (6.45)	-0.0059 (-1.53)	0.0049* (1.86)	0.0002 (0.07)	0.0001 (0.10)
Financial Distress	0.0208*** (7.99)	-0.0481*** (-17.72)	0.0259*** (9.91)	-0.0407*** (-9.19)	0.0219*** (6.85)	0.0151*** (4.11)	0.0036** (2.10)
PIIGS	0.0222** (2.52)	-0.0916*** (-10.01)	0.0662*** (7.60)	-0.1010*** (-6.45)	0.0023 (0.21)	0.0917*** (7.10)	0.0075 (1.28)
Observations	14734	14734	14734	4012	4012	4012	4012

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0354*** (2.83)	-0.0000 (-0.00)	-0.0333*** (-2.63)	0.0024 (0.10)	-0.0029 (-0.24)	0.0068 (0.31)	-0.0084 (-1.62)
5-10 Years	-0.0365 (-1.22)	0.0017 (0.06)	0.0338 (1.20)	-0.0344 (-0.63)	0.0077 (0.25)	0.0358 (0.71)	-0.0092 (-0.81)
>10 Years	-0.0351 (-1.36)	-0.0170 (-0.67)	0.0470* (1.96)	0.0025 (0.05)	-0.0305 (-1.19)	0.0339 (0.81)	-0.0050 (-0.46)
Small	0.0807*** (5.75)	-0.0064 (-0.44)	-0.0745*** (-5.20)	0.0113 (0.43)	-0.0424*** (-3.02)	0.0391 (1.59)	-0.0054 (-0.97)
Medium	0.1438*** (8.13)	-0.0383** (-2.26)	-0.1077*** (-6.27)	0.0134 (0.44)	-0.0540*** (-3.56)	0.0466 (1.64)	-0.0081 (-1.49)
Construction	0.0361 (1.59)	-0.0306 (-1.38)	-0.0029 (-0.13)	-0.0906** (-2.36)	0.0080 (0.38)	0.0657* (1.84)	0.0203* (1.71)
Trade	-0.0011 (-0.06)	0.0322* (1.81)	-0.0284 (-1.60)	-0.0295 (-1.00)	-0.0069 (-0.43)	0.0377 (1.38)	-0.0022 (-0.51)
Services	-0.0517*** (-2.99)	0.0249 (1.40)	0.0287 (1.59)	-0.0653** (-2.11)	0.0046 (0.26)	0.0504* (1.75)	0.0062 (1.03)
Exporters	0.0608*** (4.80)	-0.0413*** (-3.19)	-0.0192 (-1.49)	-0.0269 (-1.14)	-0.0060 (-0.50)	0.0291 (1.30)	0.0050 (1.03)
Innovators	0.0237* (1.93)	-0.0318** (-2.52)	0.0100 (0.80)	-0.0603*** (-2.71)	0.0152 (1.32)	0.0377* (1.78)	0.0067 (1.44)
Trading Distress	-0.0085*** (-2.77)	-0.0075** (-2.38)	0.0156*** (5.03)	0.0021 (0.38)	0.0008 (0.29)	-0.0026 (-0.51)	-0.0007 (-0.64)
Financial Distress	0.0086** (2.30)	-0.0403*** (-10.50)	0.0309*** (8.12)	-0.0550*** (-8.60)	0.0163*** (4.66)	0.0375*** (6.07)	0.0011 (0.80)
PIIGS	0.1034*** (8.16)	-0.1107*** (-8.83)	0.0092 (0.71)	-0.0819*** (-3.36)	-0.0200 (-1.62)	0.1056*** (4.52)	0.0003 (0.07)
Observations	8411	8411	8411	2608	2608	2608	2608

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0044 (0.57)	0.0124 (1.28)	-0.0161* (-1.72)	-0.0089 (-0.45)	-0.0159 (-1.39)	0.0233 (1.37)	0.0028 (0.57)
5-10 Years	-0.0178 (-1.02)	-0.0566*** (-2.66)	0.0728*** (3.60)	0.0096 (0.21)	0.0087 (0.37)	-0.0007 (-0.02)	-0.0165 (-1.36)
>10 Years	-0.0211 (-1.40)	-0.0138 (-0.75)	0.0329* (1.93)	0.0559 (1.48)	-0.0027 (-0.14)	-0.0450 (-1.32)	-0.0106 (-0.89)
Small	0.0439*** (5.17)	-0.0046 (-0.42)	-0.0387*** (-3.57)	0.0176 (0.73)	-0.0203 (-1.41)	0.0063 (0.31)	-0.0019 (-0.30)
Medium	0.0867*** (8.09)	0.0080 (0.62)	-0.0955*** (-7.63)	0.0468* (1.81)	-0.0418*** (-2.93)	0.0032 (0.14)	-0.0063 (-1.01)
Construction	0.0055 (0.40)	-0.0232 (-1.28)	0.0164 (0.92)	-0.0250 (-0.67)	0.0205 (0.88)	-0.0058 (-0.18)	0.0085 (0.88)
Trade	-0.0027 (-0.24)	0.0203 (1.37)	-0.0195 (-1.35)	0.0072 (0.24)	0.0049 (0.28)	-0.0173 (-0.68)	0.0021 (0.39)
Services	0.0199* (1.90)	0.0006 (0.05)	-0.0211 (-1.58)	-0.0118 (-0.44)	-0.0036 (-0.23)	0.0039 (0.17)	0.0097* (1.68)
Exporters	0.0148* (1.88)	0.0023 (0.23)	-0.0170* (-1.75)	-0.0523*** (-2.62)	0.0173 (1.51)	0.0279 (1.60)	0.0057 (1.12)
Innovators	0.0207*** (2.69)	-0.0245** (-2.47)	0.0033 (0.34)	-0.0194 (-0.99)	-0.0098 (-0.86)	0.0188 (1.10)	0.0097* (1.85)
Trading Distress	-0.0005 (-0.25)	-0.0201*** (-8.25)	0.0197*** (8.47)	-0.0021 (-0.43)	0.0002 (0.09)	0.0008 (0.19)	0.0001 (0.07)
Financial Distress	0.0116*** (4.92)	-0.0443*** (-14.66)	0.0316*** (10.85)	-0.0350*** (-6.39)	0.0164*** (4.92)	0.0177*** (3.66)	0.0014 (0.97)
PIIGS	0.0188** (2.37)	-0.1017*** (-10.08)	0.0800*** (8.30)	-0.1062*** (-5.50)	0.0014 (0.12)	0.1027*** (6.09)	0.0006 (0.12)
Observations	13451	13451	13451	2191	2191	2191	2191

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## RQ2 Robustness O – PIIGS Dummy

### Bank Credit Lines

#### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0479*** (3.66)	-0.0371*** (-2.78)	-0.0106 (-0.83)	-0.0091 (-0.39)	0.0006 (0.04)	0.0070 (0.35)	0.0020 (0.24)
5-10 Years	0.0315 (1.09)	-0.0340 (-1.20)	0.0008 (0.03)	0.1549*** (3.07)	-0.0615* (-1.69)	-0.0598 (-1.37)	-0.0234 (-1.36)
>10 Years	-0.0225 (-0.90)	-0.0048 (-0.19)	0.0238 (1.06)	0.1606*** (3.51)	-0.0948*** (-2.85)	-0.0451 (-1.14)	-0.0116 (-0.70)
Small	0.0337** (2.53)	0.0186 (1.37)	-0.0519*** (-3.91)	0.0393* (1.67)	-0.0144 (-0.97)	-0.0162 (-0.80)	-0.0084 (-0.99)
Medium	0.0837*** (5.49)	0.0175 (1.15)	-0.1011*** (-7.00)	0.1115*** (4.45)	-0.0561*** (-3.86)	-0.0413* (-1.89)	-0.0187** (-2.23)
Construction	-0.0079 (-0.37)	-0.0157 (-0.75)	0.0251 (1.24)	-0.0520 (-1.48)	0.0188 (0.83)	0.0179 (0.58)	0.0140 (1.05)
Trade	-0.0024 (-0.14)	0.0220 (1.34)	-0.0174 (-1.13)	0.0081 (0.30)	-0.0015 (-0.09)	-0.0028 (-0.12)	-0.0040 (-0.47)
Services	-0.0372** (-2.40)	0.0040 (0.26)	0.0334** (2.27)	0.0131 (0.52)	-0.0125 (-0.78)	-0.0065 (-0.30)	0.0055 (0.61)
Exporters	0.0119 (0.99)	-0.0114 (-0.95)	-0.0007 (-0.06)	-0.0311 (-1.58)	-0.0032 (-0.26)	0.0378** (2.18)	-0.0035 (-0.50)
Innovators	0.0568*** (4.93)	-0.0637*** (-5.49)	0.0064 (0.58)	-0.0369** (-1.97)	0.0161 (1.40)	0.0175 (1.06)	0.0037 (0.56)
Trading Distress	0.0000 (0.00)	-0.0089*** (-3.13)	0.0085*** (3.13)	-0.0107** (-2.36)	0.0027 (0.94)	0.0060 (1.50)	0.0017 (1.05)
Financial Distress	0.0292*** (8.48)	-0.0534*** (-15.69)	0.0229*** (6.94)	-0.0485*** (-9.22)	0.0177*** (5.21)	0.0272*** (5.71)	0.0038** (1.97)
PIIGS	0.1064*** (9.49)	-0.1284*** (-11.67)	0.0234** (2.16)	-0.0468** (-2.51)	-0.0014 (-0.12)	0.0486*** (2.95)	-0.0002 (-0.03)
Observations	9587	9587	9587	3001	3001	3001	3001

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0226*	-0.0282**	0.0056	-0.0397**	0.0093	0.0207	0.0096
	(1.89)	(-2.25)	(0.47)	(-1.99)	(0.68)	(1.27)	(1.55)
5-10 Years	-0.0344	-0.0308	0.0591**	0.1078**	-0.1106***	0.0081	0.0018
	(-1.32)	(-1.20)	(2.44)	(2.26)	(-3.11)	(0.20)	(0.15)
>10 Years	-0.0305	0.0234	-0.0006	0.1658***	-0.1145***	-0.0552	0.0072
	(-1.34)	(1.04)	(-0.03)	(3.99)	(-3.51)	(-1.59)	(0.70)
Small	0.0911***	-0.0121	-0.0771***	0.0595***	-0.0427***	-0.0032	-0.0101
	(7.62)	(-0.95)	(-6.21)	(2.61)	(-2.72)	(-0.17)	(-1.18)
Medium	0.1666***	-0.0281**	-0.1390***	0.1184***	-0.0748***	-0.0269	-0.0167*
	(12.09)	(-2.00)	(-10.38)	(4.95)	(-4.68)	(-1.41)	(-1.93)
Construction	-0.0252	-0.0008	0.0247	-0.0878**	0.0657***	0.0160	0.0049
	(-1.30)	(-0.04)	(1.30)	(-2.56)	(2.72)	(0.57)	(0.40)
Trade	0.0142	0.0215	-0.0335**	0.0120	0.0161	-0.0215	-0.0060
	(0.94)	(1.41)	(-2.35)	(0.51)	(1.07)	(-1.11)	(-0.76)
Services	-0.0238*	0.0134	0.0123	-0.0202	0.0294**	-0.0097	0.0030
	(-1.75)	(0.96)	(0.92)	(-0.91)	(2.05)	(-0.52)	(0.37)
Exporters	0.0187*	-0.0153	-0.0021	-0.0356**	0.0079	0.0277*	-0.0016
	(1.74)	(-1.39)	(-0.21)	(-1.99)	(0.67)	(1.84)	(-0.25)
Innovators	0.0611***	-0.0502***	-0.0126	-0.0242	0.0119	0.0084	0.0048
	(5.87)	(-4.64)	(-1.24)	(-1.44)	(1.06)	(0.60)	(0.82)
Trading Distress	-0.0059**	-0.0101***	0.0153***	-0.0056	0.0056**	0.0008	-0.0010
	(-2.25)	(-3.79)	(6.15)	(-1.33)	(2.01)	(0.23)	(-0.70)
Financial Distress	0.0244***	-0.0506***	0.0247***	-0.0397***	0.0206***	0.0144***	0.0044**
	(7.82)	(-15.93)	(8.20)	(-8.21)	(6.17)	(3.53)	(2.43)
PIIGS	0.0333***	-0.0850***	0.0494***	-0.1211***	0.0211*	0.1072***	-0.0029
	(3.22)	(-8.14)	(4.99)	(-7.21)	(1.82)	(7.38)	(-0.47)
Observations	11190	11190	11190	3241	3241	3241	3241

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	-0.0017 (-0.10)	-0.0023 (-0.14)	0.0052 (0.32)	-0.0325 (-1.21)	0.0207* (1.77)	0.0101 (0.39)	0.0034 (0.99)
5-10 Years	-0.0632* (-1.74)	0.0262 (0.77)	0.0358 (1.12)	-0.0243 (-0.42)	-0.0374 (-1.18)	0.0736 (1.35)	0.0000 (.)
>10 Years	-0.0883*** (-2.79)	0.0324 (1.10)	0.0499* (1.82)	0.0362 (0.74)	-0.0554* (-1.94)	0.0247 (0.55)	-0.0034 (-0.44)
Small	0.0865*** (5.24)	-0.0037 (-0.22)	-0.0813*** (-4.92)	0.0311 (1.06)	-0.0467*** (-3.12)	0.0325 (1.18)	-0.0141* (-1.65)
Medium	0.1342*** (7.04)	-0.0246 (-1.32)	-0.1082*** (-5.86)	0.0455 (1.41)	-0.0560*** (-3.52)	0.0198 (0.66)	-0.0134 (-1.50)
Construction	0.0410 (1.55)	-0.0087 (-0.34)	-0.0293 (-1.20)	-0.0428 (-1.04)	0.0041 (0.20)	0.0294 (0.75)	0.0092 (0.81)
Trade	0.0214 (1.10)	0.0245 (1.28)	-0.0440** (-2.39)	0.0059 (0.19)	-0.0141 (-0.93)	0.0076 (0.26)	-0.0034 (-0.80)
Services	-0.0586*** (-3.07)	0.0136 (0.72)	0.0455** (2.39)	-0.0449 (-1.38)	-0.0055 (-0.33)	0.0402 (1.30)	0.0030 (0.48)
Exporters	0.0521*** (3.51)	-0.0474*** (-3.23)	-0.0040 (-0.28)	-0.0230 (-0.92)	-0.0097 (-0.83)	0.0289 (1.20)	0.0065 (1.31)
Innovators	0.0186 (1.31)	-0.0274* (-1.94)	0.0095 (0.69)	-0.0212 (-0.90)	0.0163 (1.50)	0.0019 (0.08)	0.0008 (0.21)
Trading Distress	-0.0139*** (-3.91)	-0.0052 (-1.47)	0.0189*** (5.55)	0.0092 (1.58)	0.0008 (0.29)	-0.0089 (-1.59)	-0.0016 (-1.42)
Financial Distress	0.0109** (2.50)	-0.0402*** (-9.36)	0.0285*** (6.88)	-0.0601*** (-8.88)	0.0154*** (4.58)	0.0430*** (6.45)	0.0012 (0.99)
PIIGS	0.1249*** (8.46)	-0.1207*** (-8.56)	0.0000 (0.00)	-0.0847*** (-3.20)	-0.0151 (-1.24)	0.1080*** (4.19)	-0.0047 (-1.15)
Observations	6849	6849	6849	2334	2334	2334	2097

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	-0.0199** (-1.97)	0.0037 (0.30)	0.0155 (1.33)	-0.0426** (-1.97)	0.0005 (0.05)	0.0379** (1.98)	0.0056 (1.18)
5-10 Years	-0.0197 (-0.88)	-0.0639** (-2.43)	0.0787*** (3.25)	-0.0127 (-0.24)	0.0092 (0.35)	-0.0090 (-0.18)	0.0078 (0.87)
>10 Years	-0.0261 (-1.34)	-0.0209 (-0.92)	0.0414** (2.02)	0.0678 (1.52)	-0.0094 (-0.43)	-0.0723* (-1.71)	0.0057 (0.97)
Small	0.0480*** (4.49)	0.0187 (1.36)	-0.0635*** (-4.78)	0.0204 (0.73)	-0.0061 (-0.39)	-0.0082 (-0.34)	-0.0037 (-0.50)
Medium	0.0649*** (5.48)	0.0391*** (2.62)	-0.1016*** (-7.10)	0.0622** (2.13)	-0.0293* (-1.93)	-0.0216 (-0.83)	-0.0088 (-1.25)
Construction	-0.0002 (-0.01)	-0.0181 (-0.86)	0.0175 (0.87)	-0.0120 (-0.30)	0.0012 (0.06)	0.0021 (0.06)	0.0058 (0.62)
Trade	-0.0074 (-0.57)	0.0263 (1.60)	-0.0189 (-1.21)	0.0280 (0.96)	0.0001 (0.01)	-0.0300 (-1.15)	0.0013 (0.27)
Services	0.0060 (0.50)	0.0060 (0.40)	-0.0107 (-0.75)	-0.0212 (-0.78)	0.0033 (0.23)	0.0064 (0.26)	0.0104* (1.70)
Exporters	0.0150 (1.58)	-0.0075 (-0.64)	-0.0074 (-0.68)	-0.0577*** (-2.66)	0.0170 (1.49)	0.0355* (1.82)	0.0044 (0.83)
Innovators	0.0214** (2.32)	-0.0156 (-1.36)	-0.0063 (-0.58)	-0.0046 (-0.22)	-0.0167 (-1.45)	0.0079 (0.42)	0.0120** (2.10)
Trading Distress	-0.0005 (-0.20)	-0.0185*** (-6.59)	0.0183*** (6.92)	-0.0051 (-0.99)	0.0008 (0.29)	0.0016 (0.34)	0.0019 (1.41)
Financial Distress	0.0099*** (3.49)	-0.0458*** (-13.06)	0.0344*** (10.35)	-0.0270*** (-4.59)	0.0131*** (4.00)	0.0128** (2.40)	0.0008 (0.54)
PIIGS	0.0178* (1.95)	-0.0883*** (-7.95)	0.0685*** (6.53)	-0.1142*** (-5.64)	0.0140 (1.28)	0.1003*** (5.47)	-0.0002 (-0.05)
Observations	10786	10786	10786	1953	1953	1953	1953

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## RQ2 Robustness P – OLS

### Bank Credit Lines

#### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0342*** (3.64)	-0.0327*** (-3.47)	-0.0014 (-0.16)	0.0285* (1.72)	-0.0043 (-0.41)	-0.0247* (-1.69)	0.0005 (0.09)
5-10 Years	0.0397* (1.77)	-0.0595*** (-2.64)	0.0198 (0.92)	0.1133*** (2.90)	-0.0379 (-1.53)	-0.0536 (-1.56)	-0.0219 (-1.58)
>10 Years	-0.0125 (-0.64)	-0.0099 (-0.51)	0.0223 (1.20)	0.1269*** (3.69)	-0.0600*** (-2.75)	-0.0445 (-1.47)	-0.0223* (-1.83)
Small	0.0388*** (3.56)	0.0079 (0.72)	-0.0467*** (-4.45)	0.0105 (0.55)	-0.0147 (-1.21)	0.0012 (0.07)	0.0031 (0.45)
Medium	0.0684*** (5.24)	0.0212 (1.61)	-0.0896*** (-7.12)	0.0845*** (3.77)	-0.0454*** (-3.20)	-0.0307 (-1.55)	-0.0084 (-1.06)
Construction	0.0069 (0.38)	-0.0176 (-0.97)	0.0107 (0.61)	-0.0233 (-0.76)	0.0149 (0.77)	0.0049 (0.18)	0.0036 (0.33)
Trade	-0.0123 (-0.83)	0.0236 (1.60)	-0.0114 (-0.80)	0.0037 (0.15)	-0.0001 (-0.01)	-0.0025 (-0.12)	-0.0011 (-0.12)
Services	-0.0382*** (-2.75)	0.0177 (1.27)	0.0204 (1.53)	0.0322 (1.36)	-0.0303** (-2.03)	-0.0024 (-0.12)	0.0006 (0.07)
Exporters	0.0246** (2.44)	-0.0083 (-0.82)	-0.0163* (-1.68)	-0.0259 (-1.47)	-0.0054 (-0.49)	0.0465*** (3.00)	-0.0151** (-2.42)
Innovators	0.0663*** (6.73)	-0.0667*** (-6.73)	0.0004 (0.04)	-0.0558*** (-3.31)	0.0057 (0.54)	0.0435*** (2.93)	0.0066 (1.10)
Trading Distress	-0.0010 (-0.42)	-0.0072*** (-2.96)	0.0083*** (3.52)	-0.0080* (-1.94)	0.0034 (1.28)	0.0031 (0.84)	0.0016 (1.09)
Financial Distress	0.0355*** (12.20)	-0.0563*** (-19.21)	0.0208*** (7.40)	-0.0508*** (-10.54)	0.0179*** (5.87)	0.0274*** (6.45)	0.0055*** (3.22)
Corp Tax Rate	0.0109*** (8.17)	-0.0045*** (-3.34)	-0.0064*** (-4.99)	0.0025 (0.99)	-0.0005 (-0.32)	-0.0006 (-0.25)	-0.0014 (-1.60)
Inflation Rate	-0.0506*** (-4.75)	0.0990*** (9.24)	-0.0483*** (-4.71)	0.0297 (1.58)	0.0071 (0.59)	-0.0385** (-2.32)	0.0017 (0.26)
GDPGrowthRate	0.0054** (2.07)	0.0037 (1.40)	-0.0091*** (-3.61)	0.0131** (2.35)	-0.0042 (-1.20)	-0.0068 (-1.39)	-0.0021 (-1.04)
Constant	-0.0228 (-0.47)	0.5086*** (10.48)	0.5142*** (11.06)	0.4530*** (4.95)	0.1910*** (3.30)	0.2597*** (3.22)	0.0962*** (2.96)
Observations	10402	10402	10402	3181	3181	3181	3181

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0254*** (3.02)	-0.0197** (-2.23)	-0.0057 (-0.67)	0.0188 (1.20)	-0.0137 (-1.24)	-0.0046 (-0.36)	-0.0005 (-0.09)
5-10 Years	0.0143 (0.73)	-0.0540*** (-2.62)	0.0397** (2.03)	0.0801** (2.12)	-0.0962*** (-3.62)	-0.0082 (-0.27)	0.0244* (1.78)
>10 Years	-0.0038 (-0.23)	-0.0149 (-0.84)	0.0187 (1.11)	0.1034*** (3.18)	-0.1019*** (-4.44)	-0.0266 (-1.00)	0.0252** (2.14)
Small	0.0924*** (9.45)	-0.0188* (-1.84)	-0.0735*** (-7.53)	0.0501*** (2.71)	-0.0298** (-2.29)	-0.0026 (-0.17)	-0.0177*** (-2.65)
Medium	0.1653*** (14.17)	-0.0321*** (-2.62)	-0.1332*** (-11.42)	0.1349*** (6.57)	-0.0820*** (-5.66)	-0.0351** (-2.09)	-0.0178** (-2.40)
Construction	-0.0032 (-0.20)	-0.0123 (-0.72)	0.0155 (0.96)	-0.0283 (-0.96)	0.0277 (1.33)	-0.0043 (-0.18)	0.0049 (0.46)
Trade	-0.0026 (-0.20)	0.0234* (1.72)	-0.0209 (-1.61)	0.0073 (0.32)	0.0158 (0.98)	-0.0208 (-1.11)	-0.0022 (-0.27)
Services	-0.0135 (-1.11)	0.0040 (0.31)	0.0095 (0.78)	-0.0076 (-0.36)	0.0234 (1.56)	-0.0205 (-1.18)	0.0047 (0.61)
Exporters	0.0232*** (2.59)	0.0023 (0.25)	-0.0255*** (-2.85)	-0.0317* (-1.93)	0.0135 (1.17)	0.0285** (2.13)	-0.0104* (-1.75)
Innovators	0.0552*** (6.29)	-0.0573*** (-6.22)	0.0022 (0.25)	-0.0352** (-2.24)	0.0119 (1.07)	0.0217* (1.69)	0.0016 (0.29)
Trading Distress	-0.0091*** (-4.17)	-0.0059** (-2.57)	0.0150*** (6.87)	-0.0085** (-2.16)	0.0071** (2.56)	0.0010 (0.31)	0.0004 (0.28)
Financial Distress	0.0212*** (8.11)	-0.0484*** (-17.64)	0.0272*** (10.41)	-0.0433*** (-9.61)	0.0223*** (7.00)	0.0175*** (4.76)	0.0035** (2.15)
Corp Tax Rate	0.0129*** (10.48)	-0.0079*** (-6.06)	-0.0051*** (-4.12)	0.0113*** (4.61)	-0.0035** (-2.02)	-0.0058*** (-2.90)	-0.0020** (-2.23)
Inflation Rate	-0.0164* (-1.86)	0.0818*** (8.81)	-0.0654*** (-7.40)	0.0874*** (5.16)	-0.0114 (-0.96)	-0.0713*** (-5.15)	-0.0046 (-0.76)
GDPGrowthRate	0.0058** (2.26)	0.0060** (2.22)	-0.0119*** (-4.59)	0.0137** (2.47)	-0.0026 (-0.68)	-0.0071 (-1.57)	-0.0039* (-1.95)
Constant	-0.1683*** (-3.82)	0.6314*** (13.66)	0.5369*** (12.20)	0.2015** (2.29)	0.3327*** (5.36)	0.3831*** (5.33)	0.0827*** (2.59)
Observations	12369	12369	12369	3359	3359	3359	3359

t statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Trade Credit

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0523*** (4.25)	-0.0178 (-1.41)	-0.0346*** (-2.78)	-0.0067 (-0.29)	-0.0063 (-0.52)	0.0217 (0.98)	-0.0086* (-1.86)
5-10 Years	-0.0316 (-1.08)	-0.0024 (-0.08)	0.0340 (1.16)	-0.0389 (-0.71)	0.0077 (0.27)	0.0396 (0.77)	-0.0084 (-0.78)
>10 Years	-0.0278 (-1.11)	-0.0234 (-0.91)	0.0512** (2.02)	-0.0022 (-0.05)	-0.0335 (-1.39)	0.0386 (0.88)	-0.0029 (-0.32)
Small	0.0708*** (5.04)	0.0027 (0.19)	-0.0734*** (-5.18)	0.0150 (0.56)	-0.0421*** (-3.05)	0.0333 (1.32)	-0.0062 (-1.17)
Medium	0.1258*** (7.38)	-0.0241 (-1.39)	-0.1017*** (-5.92)	0.0143 (0.47)	-0.0444*** (-2.83)	0.0390 (1.36)	-0.0089 (-1.48)
Construction	0.0322 (1.44)	-0.0315 (-1.38)	-0.0007 (-0.03)	-0.0891** (-2.32)	0.0061 (0.31)	0.0639* (1.76)	0.0191** (2.50)
Trade	-0.0145 (-0.83)	0.0400** (2.23)	-0.0255 (-1.44)	-0.0251 (-0.83)	-0.0039 (-0.25)	0.0311 (1.09)	-0.0022 (-0.36)
Services	-0.0617*** (-3.51)	0.0300* (1.68)	0.0317* (1.79)	-0.0634** (-2.01)	0.0094 (0.57)	0.0470 (1.57)	0.0071 (1.13)
Exporters	0.0629*** (4.89)	-0.0426*** (-3.25)	-0.0203 (-1.56)	-0.0256 (-1.07)	-0.0073 (-0.59)	0.0272 (1.20)	0.0057 (1.20)
Innovators	0.0279** (2.24)	-0.0378*** (-2.98)	0.0099 (0.79)	-0.0595*** (-2.63)	0.0145 (1.24)	0.0376* (1.76)	0.0074 (1.64)
Trading Distress	-0.0086*** (-2.73)	-0.0066** (-2.08)	0.0152*** (4.81)	0.0023 (0.42)	0.0015 (0.51)	-0.0031 (-0.58)	-0.0007 (-0.65)
Financial Distress	0.0114*** (3.01)	-0.0419*** (-10.83)	0.0305*** (7.96)	-0.0554*** (-8.28)	0.0160*** (4.62)	0.0385*** (6.08)	0.0008 (0.64)
Corp Tax Rate	-0.0002 (-0.15)	-0.0013 (-0.77)	0.0015 (0.93)	0.0012 (0.40)	0.0003 (0.19)	-0.0018 (-0.63)	0.0003 (0.47)
Inflation Rate	-0.0458*** (-3.74)	0.0710*** (5.69)	-0.0252** (-2.04)	0.0607** (2.53)	-0.0127 (-1.02)	-0.0464** (-2.05)	-0.0016 (-0.33)
GDPGrowthRate	0.0039 (1.38)	0.0012 (0.42)	-0.0051* (-1.79)	0.0109** (2.25)	-0.0018 (-0.71)	-0.0088* (-1.92)	-0.0003 (-0.30)
Constant	0.2579*** (4.39)	0.4193*** (6.99)	0.3227*** (5.44)	0.6777*** (6.22)	0.1140** (2.02)	0.2030** (1.97)	0.0053 (0.24)
Observations	6096	6096	6096	1811	1811	1811	1811

t statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Other Sources

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0081 (1.09)	-0.0056 (-0.59)	-0.0025 (-0.27)	-0.0225 (-1.15)	-0.0178 (-1.59)	0.0380** (2.22)	0.0023 (0.46)
5-10 Years	-0.0171 (-1.02)	-0.0595*** (-2.78)	0.0766*** (3.72)	0.0233 (0.54)	0.0107 (0.43)	-0.0144 (-0.38)	-0.0197* (-1.78)
>10 Years	-0.0201 (-1.40)	-0.0188 (-1.03)	0.0389** (2.21)	0.0599 (1.64)	-0.0003 (-0.01)	-0.0465 (-1.46)	-0.0131 (-1.40)
Small	0.0419*** (4.84)	0.0047 (0.43)	-0.0466*** (-4.37)	0.0228 (0.96)	-0.0190 (-1.39)	-0.0016 (-0.07)	-0.0022 (-0.37)
Medium	0.0822*** (8.08)	0.0235* (1.81)	-0.1057*** (-8.45)	0.0534** (2.04)	-0.0380** (-2.54)	-0.0093 (-0.41)	-0.0060 (-0.90)
Construction	0.0084 (0.58)	-0.0269 (-1.47)	0.0185 (1.05)	-0.0237 (-0.63)	0.0226 (1.06)	-0.0071 (-0.22)	0.0082 (0.86)
Trade	-0.0017 (-0.14)	0.0217 (1.46)	-0.0200 (-1.39)	0.0015 (0.05)	0.0096 (0.55)	-0.0129 (-0.48)	0.0017 (0.22)
Services	0.0199* (1.85)	0.0026 (0.19)	-0.0225* (-1.70)	-0.0109 (-0.40)	-0.0016 (-0.10)	0.0015 (0.06)	0.0110 (1.57)
Exporters	0.0168** (2.12)	-0.0013 (-0.13)	-0.0155 (-1.59)	-0.0580*** (-2.83)	0.0180 (1.53)	0.0330* (1.84)	0.0070 (1.33)
Innovators	0.0228*** (2.92)	-0.0306*** (-3.07)	0.0078 (0.82)	-0.0209 (-1.04)	-0.0104 (-0.91)	0.0213 (1.22)	0.0100* (1.94)
Trading Distress	-0.0008 (-0.42)	-0.0189*** (-7.64)	0.0198*** (8.28)	-0.0031 (-0.63)	0.0016 (0.56)	0.0009 (0.22)	0.0006 (0.46)
Financial Distress	0.0123*** (5.15)	-0.0454*** (-14.84)	0.0331*** (11.24)	-0.0371*** (-6.67)	0.0167*** (5.24)	0.0195*** (4.00)	0.0009 (0.65)
Corp Tax Rate	0.0038*** (3.53)	-0.0035** (-2.56)	-0.0003 (-0.21)	0.0028 (1.00)	-0.0001 (-0.08)	-0.0025 (-1.00)	-0.0002 (-0.33)
Inflation Rate	-0.0118 (-1.50)	0.0603*** (5.96)	-0.0485*** (-4.98)	0.0891*** (4.18)	-0.0099 (-0.81)	-0.0716*** (-3.85)	-0.0076 (-1.40)
GDPGrowthRate	0.0052** (2.28)	0.0059** (2.01)	-0.0111*** (-3.94)	0.0084 (1.36)	-0.0021 (-0.60)	-0.0063 (-1.18)	0.0001 (0.04)
Constant	0.0233 (0.62)	0.5608*** (11.57)	0.4158*** (8.91)	0.6455*** (6.41)	0.0883 (1.53)	0.2466*** (2.80)	0.0196 (0.76)
Observations	11103	11103	11103	1772	1772	1772	1772

t statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## RQ2 Robustness Q – OLS

### Bank Credit Lines

#### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0598*** (4.47)	-0.0500*** (-3.74)	-0.0099 (-0.78)	-0.0109 (-0.48)	0.0026 (0.18)	0.0082 (0.40)	0.0001 (0.02)
5-10 Years	0.0400 (1.40)	-0.0387 (-1.36)	-0.0013 (-0.05)	0.1560*** (3.30)	-0.0690** (-2.35)	-0.0576 (-1.38)	-0.0293* (-1.78)
>10 Years	-0.0131 (-0.53)	-0.0108 (-0.44)	0.0239 (1.02)	0.1617*** (3.85)	-0.1027*** (-3.95)	-0.0434 (-1.17)	-0.0156 (-1.07)
Small	0.0230* (1.69)	0.0296** (2.18)	-0.0526*** (-4.09)	0.0450** (1.97)	-0.0161 (-1.14)	-0.0198 (-0.98)	-0.0092 (-1.15)
Medium	0.0642*** (4.24)	0.0373** (2.47)	-0.1014*** (-7.10)	0.1172*** (4.71)	-0.0493*** (-3.20)	-0.0491** (-2.24)	-0.0187** (-2.17)
Construction	-0.0031 (-0.15)	-0.0191 (-0.90)	0.0222 (1.10)	-0.0479 (-1.39)	0.0201 (0.94)	0.0141 (0.46)	0.0137 (1.14)
Trade	-0.0014 (-0.09)	0.0228 (1.37)	-0.0213 (-1.35)	0.0090 (0.34)	0.0025 (0.15)	-0.0056 (-0.24)	-0.0059 (-0.63)
Services	-0.0401*** (-2.59)	0.0083 (0.54)	0.0318** (2.18)	0.0171 (0.67)	-0.0116 (-0.74)	-0.0099 (-0.45)	0.0044 (0.50)
Exporters	0.0179 (1.48)	-0.0165 (-1.37)	-0.0014 (-0.13)	-0.0333* (-1.67)	-0.0035 (-0.29)	0.0414** (2.36)	-0.0046 (-0.67)
Innovators	0.0657*** (5.61)	-0.0699*** (-5.98)	0.0042 (0.38)	-0.0352* (-1.86)	0.0162 (1.39)	0.0161 (0.97)	0.0028 (0.43)
Trading Distress	-0.0035 (-1.20)	-0.0062** (-2.15)	0.0097*** (3.54)	-0.0100** (-2.16)	0.0029 (1.01)	0.0052 (1.26)	0.0020 (1.22)
Financial Distress	0.0325*** (9.34)	-0.0557*** (-16.05)	0.0232*** (7.06)	-0.0502*** (-9.20)	0.0182*** (5.37)	0.0280*** (5.83)	0.0040** (2.10)
Corp Tax Rate	0.0107*** (6.90)	-0.0058*** (-3.77)	-0.0049*** (-3.33)	0.0010 (0.34)	0.0007 (0.39)	-0.0002 (-0.08)	-0.0014 (-1.48)
Inflation Rate	-0.0533*** (-4.26)	0.0926*** (7.42)	-0.0393*** (-3.33)	0.0286 (1.34)	0.0073 (0.55)	-0.0355* (-1.89)	-0.0004 (-0.05)
GDPGrowthRate	0.0037 (1.21)	0.0038 (1.26)	-0.0075*** (-2.61)	0.0135** (2.23)	-0.0013 (-0.36)	-0.0091* (-1.70)	-0.0031 (-1.46)
Constant	-0.0295 (-0.51)	0.5613*** (9.70)	0.4682*** (8.55)	0.4878*** (4.68)	0.1723*** (2.67)	0.2448*** (2.66)	0.0950*** (2.62)
Observations	7426	7426	7426	2357	2357	2357	2357

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0308** (2.53)	-0.0386*** (-3.10)	0.0078 (0.67)	-0.0370* (-1.84)	0.0097 (0.71)	0.0190 (1.13)	0.0083 (1.17)
5-10 Years	-0.0263 (-1.03)	-0.0361 (-1.39)	0.0624** (2.55)	0.1136*** (2.59)	-0.1268*** (-4.27)	0.0113 (0.31)	0.0020 (0.13)
>10 Years	-0.0234 (-1.06)	0.0199 (0.88)	0.0034 (0.16)	0.1619*** (4.30)	-0.1267*** (-4.96)	-0.0438 (-1.39)	0.0085 (0.65)
Small	0.0879*** (7.13)	-0.0068 (-0.54)	-0.0811*** (-6.84)	0.0727*** (3.32)	-0.0510*** (-3.43)	-0.0109 (-0.59)	-0.0109 (-1.42)
Medium	0.1604*** (11.76)	-0.0182 (-1.30)	-0.1422*** (-10.85)	0.1377*** (5.96)	-0.0775*** (-4.96)	-0.0433** (-2.25)	-0.0169** (-2.09)
Construction	-0.0208 (-1.07)	-0.0051 (-0.26)	0.0259 (1.38)	-0.0831** (-2.54)	0.0675*** (3.05)	0.0111 (0.41)	0.0044 (0.39)
Trade	0.0181 (1.21)	0.0182 (1.18)	-0.0362** (-2.52)	0.0135 (0.57)	0.0164 (1.02)	-0.0244 (-1.23)	-0.0055 (-0.66)
Services	-0.0228* (-1.67)	0.0125 (0.89)	0.0104 (0.79)	-0.0139 (-0.63)	0.0262* (1.75)	-0.0161 (-0.87)	0.0037 (0.48)
Exporters	0.0237** (2.21)	-0.0211* (-1.91)	-0.0026 (-0.26)	-0.0399** (-2.22)	0.0108 (0.88)	0.0317** (2.11)	-0.0026 (-0.41)
Innovators	0.0674*** (6.41)	-0.0554*** (-5.13)	-0.0121 (-1.19)	-0.0208 (-1.22)	0.0083 (0.72)	0.0087 (0.61)	0.0039 (0.65)
Trading Distress	-0.0093*** (-3.54)	-0.0065** (-2.43)	0.0158*** (6.27)	-0.0066 (-1.53)	0.0069** (2.37)	0.0006 (0.17)	-0.0009 (-0.62)
Financial Distress	0.0256*** (8.18)	-0.0510*** (-15.87)	0.0254*** (8.43)	-0.0427*** (-8.60)	0.0214*** (6.35)	0.0173*** (4.17)	0.0041** (2.34)
Corp Tax Rate	0.0133*** (9.11)	-0.0092*** (-6.16)	-0.0041*** (-2.91)	0.0107*** (4.00)	-0.0021 (-1.14)	-0.0072*** (-3.22)	-0.0014 (-1.53)
Inflation Rate	-0.0174* (-1.67)	0.0708*** (6.62)	-0.0534*** (-5.33)	0.1126*** (6.23)	-0.0344*** (-2.81)	-0.0810*** (-5.37)	0.0029 (0.45)
GDPGrowthRate	0.0052* (1.73)	0.0068** (2.20)	-0.0120*** (-4.15)	0.0237*** (3.76)	-0.0066 (-1.55)	-0.0130** (-2.47)	-0.0041* (-1.84)
Constant	-0.1619*** (-3.00)	0.6594*** (11.91)	0.5026*** (9.69)	0.1973** (2.00)	0.3044*** (4.56)	0.4306*** (5.24)	0.0676** (1.96)
Observations	8893	8893	8893	2594	2594	2594	2594

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0074 (0.44)	-0.0124 (-0.75)	0.0050 (0.31)	-0.0371 (-1.36)	0.0183 (1.43)	0.0156 (0.60)	0.0031 (0.79)
5-10 Years	-0.0601* (-1.70)	0.0253 (0.72)	0.0348 (1.03)	-0.0259 (-0.45)	-0.0382 (-1.42)	0.0749 (1.36)	-0.0108 (-1.31)
>10 Years	-0.0801*** (-2.61)	0.0278 (0.92)	0.0524* (1.79)	0.0369 (0.76)	-0.0590** (-2.58)	0.0255 (0.54)	-0.0033 (-0.47)
Small	0.0779*** (4.59)	0.0028 (0.17)	-0.0807*** (-4.98)	0.0319 (1.08)	-0.0518*** (-3.74)	0.0310 (1.09)	-0.0111*** (-2.60)
Medium	0.1176*** (6.14)	-0.0127 (-0.67)	-0.1049*** (-5.72)	0.0460 (1.43)	-0.0516*** (-3.40)	0.0161 (0.52)	-0.0106** (-2.27)
Construction	0.0401 (1.53)	-0.0114 (-0.44)	-0.0287 (-1.15)	-0.0452 (-1.10)	0.0044 (0.22)	0.0326 (0.82)	0.0082 (1.38)
Trade	0.0117 (0.60)	0.0293 (1.52)	-0.0410** (-2.20)	0.0102 (0.33)	-0.0096 (-0.66)	0.0012 (0.04)	-0.0018 (-0.40)
Services	-0.0669*** (-3.44)	0.0176 (0.91)	0.0493*** (2.65)	-0.0436 (-1.34)	0.0002 (0.01)	0.0370 (1.18)	0.0064 (1.35)
Exporters	0.0537*** (3.57)	-0.0484*** (-3.26)	-0.0053 (-0.37)	-0.0247 (-0.97)	-0.0118 (-0.99)	0.0307 (1.26)	0.0059 (1.59)
Innovators	0.0224 (1.55)	-0.0317** (-2.23)	0.0094 (0.68)	-0.0193 (-0.82)	0.0172 (1.54)	0.0006 (0.03)	0.0016 (0.46)
Trading Distress	-0.0151*** (-4.15)	-0.0033 (-0.93)	0.0184*** (5.31)	0.0099* (1.68)	0.0015 (0.54)	-0.0096* (-1.68)	-0.0018** (-2.14)
Financial Distress	0.0137*** (3.11)	-0.0420*** (-9.66)	0.0283*** (6.73)	-0.0605*** (-8.52)	0.0163*** (4.85)	0.0433*** (6.32)	0.0010 (0.99)
Corp Tax Rate	0.0006 (0.31)	-0.0016 (-0.84)	0.0010 (0.54)	0.0035 (1.09)	-0.0004 (-0.27)	-0.0035 (-1.15)	0.0005 (1.02)
Inflation Rate	-0.0567*** (-4.05)	0.0682*** (4.92)	-0.0114 (-0.85)	0.0789*** (3.12)	-0.0110 (-0.93)	-0.0736*** (-3.03)	0.0058 (1.58)
GDPGrowthRate	0.0042 (1.31)	0.0013 (0.40)	-0.0055* (-1.79)	0.0148*** (2.79)	-0.0025 (-1.01)	-0.0126** (-2.46)	0.0003 (0.37)
Constant	0.3289*** (4.63)	0.3774*** (5.37)	0.2937*** (4.32)	0.5426*** (4.61)	0.1490*** (2.68)	0.3142*** (2.77)	-0.0058 (-0.34)
Observations	4809	4809	4809	1607	1607	1607	1607

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	-0.0182*	-0.0042	0.0224*	-0.0515**	0.0014	0.0456**	0.0045
	(-1.82)	(-0.34)	(1.92)	(-2.29)	(0.12)	(2.26)	(0.82)
5-10 Years	-0.0178	-0.0673**	0.0851***	-0.0037	0.0076	-0.0145	0.0106
	(-0.83)	(-2.55)	(3.41)	(-0.08)	(0.30)	(-0.33)	(0.88)
>10 Years	-0.0242	-0.0259	0.0501**	0.0666	-0.0046	-0.0700*	0.0080
	(-1.31)	(-1.14)	(2.33)	(1.58)	(-0.21)	(-1.85)	(0.78)
Small	0.0455***	0.0275**	-0.0730***	0.0249	-0.0058	-0.0130	-0.0062
	(4.10)	(2.01)	(-5.64)	(0.89)	(-0.40)	(-0.52)	(-0.91)
Medium	0.0616***	0.0523***	-0.1139***	0.0776***	-0.0283*	-0.0386	-0.0106
	(5.14)	(3.54)	(-8.15)	(2.64)	(-1.85)	(-1.47)	(-1.48)
Construction	0.0019	-0.0234	0.0215	-0.0125	0.0070	0.0011	0.0043
	(0.11)	(-1.11)	(1.07)	(-0.31)	(0.33)	(0.03)	(0.44)
Trade	-0.0064	0.0238	-0.0174	0.0301	0.0026	-0.0328	0.0001
	(-0.48)	(1.44)	(-1.12)	(0.97)	(0.16)	(-1.18)	(0.01)
Services	0.0055	0.0064	-0.0119	-0.0148	0.0046	-0.0015	0.0117*
	(0.46)	(0.43)	(-0.85)	(-0.54)	(0.32)	(-0.06)	(1.73)
Exporters	0.0170*	-0.0109	-0.0061	-0.0626***	0.0194*	0.0377*	0.0055
	(1.79)	(-0.93)	(-0.55)	(-2.80)	(1.67)	(1.88)	(1.00)
Innovators	0.0240***	-0.0219*	-0.0022	-0.0085	-0.0175	0.0121	0.0139***
	(2.58)	(-1.91)	(-0.20)	(-0.40)	(-1.56)	(0.63)	(2.64)
Trading Distress	-0.0009	-0.0160***	0.0169***	-0.0047	0.0017	0.0006	0.0023*
	(-0.39)	(-5.60)	(6.25)	(-0.87)	(0.63)	(0.12)	(1.80)
Financial Distress	0.0108***	-0.0467***	0.0359***	-0.0287***	0.0137***	0.0144***	0.0006
	(3.75)	(-13.14)	(10.68)	(-4.75)	(4.36)	(2.65)	(0.42)
Corp Tax Rate	0.0039***	-0.0058***	0.0019	0.0037	-0.0009	-0.0032	0.0004
	(3.18)	(-3.80)	(1.29)	(1.25)	(-0.58)	(-1.22)	(0.61)
Inflation Rate	-0.0129	0.0482***	-0.0353***	0.0807***	-0.0264**	-0.0494**	-0.0050
	(-1.40)	(4.25)	(-3.29)	(3.62)	(-2.27)	(-2.47)	(-0.91)
GDPGrowthRate	0.0060**	0.0050	-0.0111***	0.0104*	-0.0040	-0.0072	0.0009
	(2.31)	(1.57)	(-3.64)	(1.67)	(-1.24)	(-1.30)	(0.56)
Constant	0.0588	0.6166***	0.3247***	0.6332***	0.0943*	0.2956***	-0.0231
	(1.29)	(11.02)	(6.14)	(5.91)	(1.69)	(3.07)	(-0.88)
Observations	8357	8357	8357	1484	1484	1484	1484

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

### RQ2 Robustness R – Without Innovation Dummy

#### Bank Credit Lines

##### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0314*** (4.81)	-0.0147** (-2.26)	-0.0164*** (-2.62)	0.0255** (2.25)	-0.0125* (-1.74)	-0.0173* (-1.75)	0.0039 (1.06)
5-10 Years	0.0155 (0.94)	-0.0118 (-0.74)	-0.0022 (-0.15)	0.1106*** (3.78)	-0.0156 (-0.81)	-0.0758*** (-2.92)	-0.0158 (-1.54)
>10 Years	-0.0272* (-1.90)	0.0265* (1.90)	-0.0000 (-0.00)	0.1220*** (4.68)	-0.0366** (-2.15)	-0.0691*** (-2.95)	-0.0128 (-1.35)
Small	0.0474*** (6.28)	-0.0047 (-0.62)	-0.0426*** (-5.80)	0.0188 (1.42)	-0.0109 (-1.25)	-0.0070 (-0.62)	0.0001 (0.01)
Medium	0.0695*** (7.52)	0.0073 (0.80)	-0.0785*** (-9.07)	0.0850*** (5.63)	-0.0529*** (-5.97)	-0.0300** (-2.28)	-0.0073 (-1.54)
Construction	-0.0095 (-0.75)	0.0001 (0.01)	0.0115 (0.95)	-0.0251 (-1.17)	0.0149 (1.04)	0.0046 (0.25)	0.0064 (0.97)
Trade	-0.0164 (-1.59)	0.0225** (2.21)	-0.0047 (-0.48)	0.0144 (0.85)	0.0018 (0.16)	-0.0219 (-1.48)	0.0062 (1.17)
Services	-0.0402*** (-4.15)	0.0213** (2.22)	0.0203** (2.16)	0.0310* (1.92)	-0.0176* (-1.66)	-0.0182 (-1.29)	0.0063 (1.25)
Exporters	0.0408*** (5.85)	-0.0162** (-2.31)	-0.0247*** (-3.66)	-0.0250** (-2.11)	-0.0016 (-0.21)	0.0321*** (3.12)	-0.0061 (-1.51)
Trading Distress	-0.0028 (-1.64)	-0.0075*** (-4.44)	0.0098*** (6.01)	-0.0044 (-1.55)	0.0024 (1.32)	0.0001 (0.04)	0.0014 (1.51)
Financial Distress	0.0379*** (18.90)	-0.0582*** (-29.09)	0.0188*** (9.53)	-0.0516*** (-16.12)	0.0200*** (9.22)	0.0277*** (9.69)	0.0038*** (3.41)
Corp Tax Rate	0.0118*** (12.47)	-0.0043*** (-4.71)	-0.0067*** (-7.62)	0.0022 (1.25)	-0.0017 (-1.48)	0.0007 (0.46)	-0.0015*** (-2.68)
Inflation Rate	-0.0806*** (-10.90)	0.1143*** (15.51)	-0.0349*** (-4.91)	0.0383*** (2.94)	0.0090 (1.10)	-0.0504*** (-4.42)	0.0032 (0.73)
GDP Growth Rate	0.0066*** (3.58)	0.0037** (2.08)	-0.0097*** (-5.38)	0.0109*** (2.64)	-0.0044 (-1.61)	-0.0048 (-1.33)	-0.0024 (-1.46)
Observations	27373	27373	27373	8267	8267	8267	8267

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0293*** (4.94)	-0.0120* (-1.94)	-0.0170*** (-2.89)	0.0096 (0.89)	-0.0171** (-2.36)	0.0020 (0.23)	0.0057 (1.57)
5-10 Years	0.0172 (1.18)	-0.0261* (-1.74)	0.0111 (0.77)	0.0554* (1.91)	-0.0463** (-2.29)	-0.0256 (-1.05)	0.0193** (2.41)
>10 Years	0.0082 (0.65)	0.0058 (0.44)	-0.0135 (-1.09)	0.0934*** (3.67)	-0.0560*** (-3.08)	-0.0430** (-2.01)	0.0098* (1.71)
Small	0.0826*** (12.12)	-0.0098 (-1.37)	-0.0706*** (-10.16)	0.0409*** (3.15)	-0.0325*** (-3.59)	0.0089 (0.85)	-0.0147*** (-3.25)
Medium	0.1543*** (18.07)	-0.0299*** (-3.53)	-0.1264*** (-15.67)	0.1165*** (8.45)	-0.0796*** (-9.04)	-0.0241** (-2.17)	-0.0163*** (-3.33)
Construction	-0.0240** (-2.11)	0.0034 (0.28)	0.0239** (2.09)	-0.0203 (-1.01)	0.0268** (1.98)	-0.0079 (-0.47)	0.0038 (0.57)
Trade	-0.0061 (-0.66)	0.0233** (2.44)	-0.0138 (-1.51)	0.0132 (0.86)	0.0088 (0.86)	-0.0215* (-1.69)	0.0006 (0.12)
Services	-0.0331*** (-3.88)	0.0200** (2.26)	0.0164* (1.89)	-0.0055 (-0.38)	0.0211** (2.15)	-0.0190 (-1.57)	0.0073 (1.45)
Exporters	0.0351*** (5.58)	-0.0063 (-0.95)	-0.0294*** (-4.68)	-0.0386*** (-3.49)	0.0150** (2.02)	0.0269*** (2.95)	-0.0039 (-1.00)
Trading Distress	-0.0108*** (-7.03)	-0.0063*** (-3.93)	0.0164*** (10.84)	-0.0089*** (-3.36)	0.0074*** (4.11)	0.0005 (0.24)	0.0007 (0.73)
Financial Distress	0.0242*** (13.17)	-0.0514*** (-26.85)	0.0258*** (14.00)	-0.0435*** (-14.30)	0.0202*** (9.44)	0.0205*** (7.99)	0.0026** (2.37)
Corp Tax Rate	0.0154*** (17.16)	-0.0083*** (-9.32)	-0.0060*** (-6.98)	0.0119*** (7.36)	-0.0043*** (-3.95)	-0.0061*** (-4.58)	-0.0017*** (-3.12)
Inflation Rate	-0.0237*** (-3.73)	0.0794*** (12.17)	-0.0558*** (-8.97)	0.0872*** (7.59)	-0.0151* (-1.95)	-0.0652*** (-6.96)	-0.0053 (-1.35)
GDP Growth Rate	0.0070*** (3.82)	0.0045** (2.48)	-0.0111*** (-6.00)	0.0102*** (2.88)	-0.0031 (-1.34)	-0.0041 (-1.42)	-0.0040** (-2.21)
Observations	31471	31471	31471	8600	8600	8600	8600

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0306*** (3.58)	-0.0064 (-0.73)	-0.0239*** (-2.76)	-0.0042 (-0.26)	-0.0068 (-0.88)	0.0179 (1.21)	-0.0078** (-2.18)
5-10 Years	-0.0212 (-0.99)	0.0039 (0.18)	0.0156 (0.76)	0.0130 (0.32)	0.0096 (0.46)	-0.0190 (-0.50)	-0.0028 (-0.38)
>10 Years	-0.0235 (-1.26)	-0.0032 (-0.17)	0.0228 (1.29)	0.0553 (1.59)	-0.0209 (-1.21)	-0.0315 (-0.95)	-0.0010 (-0.15)
Small	0.0866*** (8.78)	-0.0072 (-0.72)	-0.0776*** (-7.75)	0.0173 (0.96)	-0.0306*** (-3.34)	0.0203 (1.19)	-0.0038 (-0.98)
Medium	0.1342*** (10.95)	-0.0265** (-2.23)	-0.1113*** (-9.32)	0.0198 (0.96)	-0.0429*** (-4.41)	0.0278 (1.42)	-0.0074** (-1.98)
Construction	0.0178 (1.12)	-0.0080 (-0.51)	-0.0072 (-0.46)	-0.0850*** (-3.17)	0.0215 (1.51)	0.0616** (2.43)	0.0055 (0.94)
Trade	-0.0033 (-0.27)	0.0259** (2.10)	-0.0198 (-1.61)	-0.0197 (-0.98)	-0.0020 (-0.20)	0.0230 (1.22)	0.0003 (0.07)
Services	-0.0689*** (-5.70)	0.0281** (2.28)	0.0422*** (3.36)	-0.0236 (-1.11)	0.0032 (0.29)	0.0167 (0.84)	0.0042 (0.96)
Exporters	0.0664*** (7.56)	-0.0378*** (-4.17)	-0.0287*** (-3.20)	-0.0478*** (-2.99)	0.0004 (0.05)	0.0465*** (3.06)	0.0015 (0.46)
Trading Distress	-0.0081*** (-3.74)	-0.0077*** (-3.48)	0.0152*** (6.95)	-0.0010 (-0.27)	0.0011 (0.57)	-0.0008 (-0.23)	0.0001 (0.16)
Financial Distress	0.0108*** (4.08)	-0.0416*** (-15.40)	0.0297*** (11.09)	-0.0527*** (-11.79)	0.0156*** (6.61)	0.0360*** (8.35)	0.0005 (0.53)
Corp Tax Rate	-0.0003 (-0.24)	-0.0013 (-1.12)	0.0014 (1.23)	0.0020 (0.96)	0.0001 (0.07)	-0.0017 (-0.90)	-0.0006 (-1.43)
Inflation Rate	-0.0560*** (-6.58)	0.0769*** (8.87)	-0.0198** (-2.30)	0.0821*** (5.18)	-0.0127* (-1.67)	-0.0646*** (-4.33)	-0.0036 (-1.21)
GDP Growth Rate	0.0042** (2.26)	0.0015 (0.79)	-0.0068*** (-3.20)	0.0125*** (3.35)	-0.0045* (-1.71)	-0.0086** (-2.51)	-0.0024 (-1.64)
Observations	18384	18384	18384	5679	5679	5679	5679

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0159*** (3.14)	-0.0032 (-0.48)	-0.0129** (-2.01)	-0.0105 (-0.76)	-0.0090 (-1.12)	0.0177 (1.49)	0.0030 (0.77)
5-10 Years	-0.0218* (-1.73)	-0.0147 (-0.95)	0.0349** (2.32)	-0.0122 (-0.36)	0.0341** (2.02)	-0.0166 (-0.54)	-0.0097 (-0.92)
>10 Years	-0.0285*** (-2.59)	0.0276** (2.05)	-0.0013 (-0.10)	0.0546* (1.92)	0.0103 (0.81)	-0.0607** (-2.31)	-0.0091 (-0.95)
Small	0.0363*** (6.33)	0.0023 (0.30)	-0.0381*** (-5.06)	0.0214 (1.26)	-0.0283*** (-2.76)	0.0151 (1.06)	-0.0085 (-1.61)
Medium	0.0746*** (10.33)	0.0108 (1.19)	-0.0860*** (-9.86)	0.0517*** (2.83)	-0.0464*** (-4.54)	0.0059 (0.37)	-0.0117** (-2.17)
Construction	0.0139 (1.44)	-0.0152 (-1.19)	0.0011 (0.09)	-0.0193 (-0.73)	0.0056 (0.34)	0.0028 (0.13)	0.0098 (1.14)
Trade	-0.0074 (-0.97)	0.0266** (2.57)	-0.0206** (-2.02)	-0.0057 (-0.26)	-0.0118 (-0.90)	0.0146 (0.78)	0.0001 (0.02)
Services	0.0172** (2.42)	0.0035 (0.37)	-0.0207** (-2.21)	0.0068 (0.35)	-0.0124 (-1.03)	-0.0000 (-0.00)	0.0034 (0.66)
Exporters	0.0179*** (3.34)	-0.0002 (-0.03)	-0.0179*** (-2.62)	-0.0330** (-2.29)	0.0092 (1.11)	0.0167 (1.35)	0.0072* (1.72)
Trading Distress	-0.0019 (-1.46)	-0.0156*** (-9.12)	0.0169*** (10.26)	-0.0038 (-1.11)	-0.0003 (-0.16)	0.0025 (0.85)	0.0012 (1.21)
Financial Distress	0.0129*** (8.01)	-0.0502*** (-23.83)	0.0361*** (17.62)	-0.0355*** (-8.90)	0.0154*** (6.41)	0.0201*** (5.75)	0.0002 (0.15)
Corp Tax Rate	0.0041*** (5.49)	-0.0033*** (-3.52)	-0.0006 (-0.65)	0.0059*** (3.10)	-0.0003 (-0.30)	-0.0056*** (-3.43)	-0.0002 (-0.37)
Inflation Rate	-0.0294*** (-5.42)	0.0747*** (10.55)	-0.0449*** (-6.59)	0.0787*** (5.38)	-0.0033 (-0.39)	-0.0678*** (-5.45)	-0.0057 (-1.35)
GDP Growth Rate	0.0040*** (2.68)	0.0061*** (3.05)	-0.0106*** (-5.14)	0.0071* (1.69)	-0.0044 (-1.34)	-0.0042 (-1.24)	-0.0001 (-0.08)
Observations	29105	29105	29105	4479	4479	4479	4479

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## RQ2 Robustness S – Without Innovation Dummy

### Bank Credit Lines

#### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0460*** (5.01)	-0.0302*** (-3.23)	-0.0171* (-1.92)	-0.0058 (-0.38)	-0.0003 (-0.03)	0.0005 (0.03)	0.0064 (1.37)
5-10 Years	0.0029 (0.13)	0.0145 (0.70)	-0.0154 (-0.80)	0.1295*** (3.58)	-0.0440* (-1.77)	-0.0657** (-2.10)	-0.0152 (-1.26)
>10 Years	-0.0360* (-1.92)	0.0257 (1.43)	0.0092 (0.55)	0.1377*** (4.24)	-0.0701*** (-3.12)	-0.0516* (-1.82)	-0.0106 (-0.94)
Small	0.0458*** (4.84)	0.0041 (0.43)	-0.0487*** (-5.31)	0.0527*** (3.27)	-0.0123 (-1.21)	-0.0315** (-2.26)	-0.0066 (-1.26)
Medium	0.0716*** (6.74)	0.0147 (1.39)	-0.0860*** (-8.62)	0.1113*** (6.50)	-0.0532*** (-5.36)	-0.0484*** (-3.23)	-0.0119** (-2.19)
Construction	-0.0048 (-0.31)	-0.0078 (-0.52)	0.0154 (1.09)	-0.0309 (-1.27)	0.0128 (0.84)	0.0071 (0.33)	0.0100 (1.30)
Trade	-0.0078 (-0.66)	0.0201* (1.74)	-0.0097 (-0.89)	0.0158 (0.86)	-0.0107 (-0.93)	-0.0098 (-0.60)	0.0057 (1.01)
Services	-0.0289*** (-2.66)	0.0118 (1.10)	0.0183* (1.78)	0.0313* (1.82)	-0.0044 (-0.40)	-0.0317** (-2.12)	0.0067 (1.27)
Exporters	0.0425*** (5.03)	-0.0224*** (-2.68)	-0.0193** (-2.46)	-0.0244* (-1.82)	-0.0062 (-0.76)	0.0329*** (2.80)	-0.0020 (-0.45)
Trading Distress	-0.0038* (-1.88)	-0.0064*** (-3.13)	0.0095*** (4.99)	-0.0056* (-1.79)	0.0029 (1.49)	0.0011 (0.40)	0.0010 (0.95)
Financial Distress	0.0339*** (13.92)	-0.0581*** (-24.22)	0.0226*** (9.79)	-0.0503*** (-14.00)	0.0176*** (7.50)	0.0284*** (8.80)	0.0042*** (3.29)
Corp Tax Rate	0.0112*** (10.06)	-0.0057*** (-5.39)	-0.0048*** (-4.80)	0.0003 (0.18)	-0.0011 (-0.97)	0.0022 (1.27)	-0.0017*** (-2.82)
Inflation Rate	-0.0812*** (-9.20)	0.1136*** (13.11)	-0.0341*** (-4.15)	0.0341** (2.32)	0.0012 (0.13)	-0.0409*** (-3.15)	0.0037 (0.75)
GDP Growth Rate	0.0046** (2.11)	0.0048** (2.38)	-0.0093*** (-4.52)	0.0122*** (2.64)	-0.0038 (-1.35)	-0.0054 (-1.30)	-0.0067*** (-2.62)
Observations	20375	20375	20375	6449	6449	6449	6449

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Bank Loans

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0402*** (4.86)	-0.0292*** (-3.32)	-0.0129 (-1.55)	-0.0027 (-0.19)	-0.0051 (-0.54)	-0.0026 (-0.22)	0.0088** (2.07)
5-10 Years	-0.0345* (-1.78)	0.0179 (0.93)	0.0146 (0.80)	0.0892** (2.45)	-0.0828*** (-3.34)	-0.0015 (-0.05)	0.0028 (0.25)
>10 Years	-0.0191 (-1.13)	0.0399** (2.40)	-0.0232 (-1.47)	0.1523*** (4.79)	-0.0797*** (-3.50)	-0.0649** (-2.40)	-0.0022 (-0.23)
Small	0.0889*** (10.54)	-0.0128 (-1.43)	-0.0734*** (-8.50)	0.0628*** (3.95)	-0.0412*** (-3.85)	-0.0064 (-0.49)	-0.0114** (-2.06)
Medium	0.1582*** (16.47)	-0.0291*** (-2.97)	-0.1288*** (-13.83)	0.1239*** (7.60)	-0.0770*** (-7.33)	-0.0336** (-2.52)	-0.0144** (-2.50)
Construction	-0.0302** (-2.22)	0.0162 (1.16)	0.0163 (1.24)	-0.0459** (-1.98)	0.0349** (2.30)	0.0075 (0.38)	0.0008 (0.10)
Trade	0.0052 (0.49)	0.0094 (0.87)	-0.0115 (-1.13)	0.0208 (1.28)	-0.0024 (-0.24)	-0.0196 (-1.41)	0.0003 (0.06)
Services	-0.0310*** (-3.21)	0.0214** (2.17)	0.0121 (1.29)	0.0028 (0.18)	0.0157 (1.60)	-0.0231* (-1.77)	0.0060 (1.11)
Exporters	0.0353*** (4.67)	-0.0170** (-2.19)	-0.0180** (-2.49)	-0.0338*** (-2.74)	0.0070 (0.91)	0.0267** (2.55)	-0.0004 (-0.08)
Trading Distress	-0.0096*** (-5.15)	-0.0071*** (-3.72)	0.0158*** (8.99)	-0.0060** (-2.03)	0.0065*** (3.44)	-0.0013 (-0.50)	0.0002 (0.15)
Financial Distress	0.0234*** (10.56)	-0.0506*** (-22.37)	0.0259*** (12.12)	-0.0438*** (-12.86)	0.0181*** (7.98)	0.0213*** (7.27)	0.0043*** (3.43)
Corp Tax Rate	0.0156*** (14.68)	-0.0096*** (-9.33)	-0.0048*** (-4.95)	0.0101*** (5.62)	-0.0036*** (-3.17)	-0.0053*** (-3.41)	-0.0015** (-2.50)
Inflation Rate	-0.0312*** (-4.15)	0.0765*** (10.10)	-0.0447*** (-6.29)	0.1021*** (8.05)	-0.0255*** (-3.15)	-0.0760*** (-7.12)	0.0015 (0.36)
GDP Growth Rate	0.0061*** (2.84)	0.0058*** (2.77)	-0.0121*** (-5.61)	0.0150*** (3.59)	-0.0068** (-2.29)	-0.0066* (-1.89)	-0.0024 (-1.40)
Observations	23710	23710	23710	6916	6916	6916	6916

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0013 (0.11)	0.0030 (0.26)	-0.0056 (-0.49)	0.0020 (0.10)	0.0069 (0.81)	-0.0065 (-0.36)	-0.0017 (-0.47)
5-10 Years	-0.0441* (-1.66)	0.0431* (1.74)	0.0007 (0.03)	0.0311 (0.70)	-0.0306 (-1.35)	0.0046 (0.11)	-0.0042 (-0.68)
>10 Years	-0.0582** (-2.51)	0.0520** (2.44)	0.0019 (0.09)	0.0723* (1.90)	-0.0438** (-2.14)	-0.0275 (-0.76)	-0.0005 (-0.09)
Small	0.0971*** (8.33)	-0.0090 (-0.76)	-0.0843*** (-7.22)	0.0331 (1.59)	-0.0341*** (-3.36)	0.0116 (0.59)	-0.0043 (-1.05)
Medium	0.1421*** (10.65)	-0.0248* (-1.89)	-0.1157*** (-8.91)	0.0361 (1.60)	-0.0463*** (-4.43)	0.0171 (0.80)	-0.0061 (-1.45)
Construction	0.0249 (1.34)	0.0034 (0.19)	-0.0239 (-1.40)	-0.0516* (-1.78)	0.0187 (1.30)	0.0289 (1.05)	0.0039 (0.74)
Trade	0.0082 (0.60)	0.0229* (1.72)	-0.0280** (-2.17)	0.0010 (0.05)	-0.0110 (-1.14)	0.0093 (0.46)	0.0002 (0.07)
Services	-0.0713*** (-5.36)	0.0208 (1.57)	0.0508*** (3.84)	-0.0379* (-1.70)	-0.0044 (-0.42)	0.0363* (1.70)	0.0056 (1.42)
Exporters	0.0604*** (5.85)	-0.0409*** (-3.99)	-0.0192* (-1.93)	-0.0338* (-1.94)	-0.0043 (-0.57)	0.0349** (2.09)	0.0040 (1.33)
Trading Distress	-0.0113*** (-4.52)	-0.0079*** (-3.18)	0.0185*** (7.71)	0.0017 (0.42)	0.0032* (1.76)	-0.0054 (-1.37)	-0.0004 (-0.52)
Financial Distress	0.0087*** (2.83)	-0.0390*** (-12.73)	0.0290*** (9.81)	-0.0556*** (-11.61)	0.0124*** (5.51)	0.0420*** (8.95)	0.0005 (0.62)
Corp Tax Rate	-0.0007 (-0.50)	-0.0015 (-1.19)	0.0021* (1.67)	0.0029 (1.32)	-0.0014 (-1.39)	-0.0017 (-0.79)	-0.0005 (-1.33)
Inflation Rate	-0.0694*** (-7.02)	0.0790*** (8.04)	-0.0087 (-0.91)	0.0814*** (4.76)	-0.0087 (-1.20)	-0.0707*** (-4.32)	-0.0017 (-0.67)
GDP Growth Rate	0.0037* (1.70)	0.0009 (0.42)	-0.0053** (-2.29)	0.0156*** (3.68)	-0.0077** (-2.49)	-0.0106*** (-2.71)	-0.0020 (-1.55)
Observations	14777	14777	14777	5060	5060	5060	5060

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	-0.0045 (-0.66)	-0.0034 (-0.40)	0.0070 (0.86)	-0.0263* (-1.67)	0.0003 (0.03)	0.0255* (1.87)	0.0015 (0.32)
5-10 Years	-0.0120 (-0.73)	0.0002 (0.01)	0.0104 (0.56)	-0.0345 (-0.89)	0.0345* (1.72)	-0.0065 (-0.18)	0.0064 (1.05)
>10 Years	-0.0268* (-1.88)	0.0359** (2.13)	-0.0117 (-0.73)	0.0365 (1.11)	0.0001 (0.00)	-0.0495 (-1.61)	0.0109** (2.51)
Small	0.0463*** (6.41)	0.0188* (1.96)	-0.0634*** (-6.80)	0.0448** (2.15)	-0.0204* (-1.74)	-0.0072 (-0.41)	-0.0166** (-2.31)
Medium	0.0726*** (9.03)	0.0269*** (2.60)	-0.0985*** (-9.87)	0.0869*** (4.12)	-0.0363*** (-3.13)	-0.0339* (-1.90)	-0.0172** (-2.32)
Construction	0.0014 (0.12)	-0.0071 (-0.48)	0.0059 (0.42)	-0.0053 (-0.18)	-0.0005 (-0.03)	0.0015 (0.06)	0.0029 (0.38)
Trade	-0.0042 (-0.47)	0.0223* (1.93)	-0.0179 (-1.62)	0.0172 (0.78)	-0.0060 (-0.50)	-0.0212 (-1.10)	0.0084 (1.30)
Services	0.0071 (0.88)	0.0065 (0.63)	-0.0128 (-1.28)	0.0146 (0.74)	-0.0032 (-0.29)	-0.0131 (-0.75)	0.0024 (0.48)
Exporters	0.0174*** (2.69)	0.0001 (0.02)	-0.0176** (-2.27)	-0.0283* (-1.81)	0.0111 (1.33)	0.0145 (1.06)	0.0028 (0.64)
Trading Distress	-0.0012 (-0.77)	-0.0147*** (-7.43)	0.0153*** (8.13)	-0.0053 (-1.45)	0.0014 (0.70)	0.0007 (0.22)	0.0024** (2.16)
Financial Distress	0.0140*** (7.19)	-0.0517*** (-21.10)	0.0363*** (15.42)	-0.0254*** (-5.88)	0.0114*** (4.76)	0.0148*** (3.85)	-0.0010 (-0.83)
Corp Tax Rate	0.0037*** (4.26)	-0.0047*** (-4.42)	0.0011 (1.04)	0.0047** (2.32)	-0.0001 (-0.10)	-0.0051*** (-2.90)	0.0003 (0.44)
Inflation Rate	-0.0285*** (-4.47)	0.0655*** (8.22)	-0.0363*** (-4.81)	0.0709*** (4.59)	-0.0158* (-1.93)	-0.0543*** (-4.04)	-0.0011 (-0.25)
GDP Growth Rate	0.0037** (2.17)	0.0058*** (2.62)	-0.0103*** (-4.54)	0.0089* (1.90)	-0.0096** (-2.41)	-0.0052 (-1.35)	0.0007 (0.62)
Observations	23086	23086	23086	3965	3965	3965	3965

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## RQ2 Robustness T – Wave Dummies

### Bank Credit Lines

#### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0338*** (3.60)	-0.0289** (-3.06)	-0.00393 (-0.43)	0.0388* (2.34)	-0.00856 (-0.82)	-0.0316* (-2.14)	0.000946 (0.16)
5-10 Years	0.0400 (1.77)	-0.0607** (-2.70)	0.0200 (0.96)	0.103** (2.58)	-0.0329 (-1.19)	-0.0480 (-1.39)	-0.0203 (-1.28)
>10 Years	-0.0134 (-0.69)	-0.0136 (-0.69)	0.0240 (1.33)	0.108** (3.00)	-0.0524* (-2.11)	-0.0331 (-1.06)	-0.0201 (-1.36)
Small	0.0392*** (3.62)	0.00669 (0.61)	-0.0458*** (-4.31)	0.0111 (0.57)	-0.0132 (-1.06)	0.000414 (0.02)	0.00314 (0.44)
Medium	0.0701*** (5.30)	0.0189 (1.45)	-0.0905*** (-7.37)	0.0861*** (3.94)	-0.0515*** (-4.02)	-0.0286 (-1.48)	-0.0118 (-1.69)
Construction	0.00764 (0.42)	-0.0177 (-0.99)	0.0115 (0.66)	-0.0253 (-0.82)	0.0149 (0.70)	0.00398 (0.15)	0.00496 (0.44)
Trade	-0.0116 (-0.78)	0.0218 (1.48)	-0.0103 (-0.73)	0.00200 (0.08)	-0.000672 (-0.04)	-0.00213 (-0.10)	0.000640 (0.07)
Services	-0.0379** (-2.73)	0.0162 (1.17)	0.0216 (1.60)	0.0311 (1.32)	-0.0296 (-1.90)	-0.00295 (-0.14)	0.00145 (0.17)
Exporters	0.0251* (2.49)	-0.00799 (-0.79)	-0.0180 (-1.86)	-0.0218 (-1.25)	-0.00480 (-0.44)	0.0405** (2.66)	-0.0157* (-2.38)
Innovators	0.0657*** (6.78)	-0.0683*** (-6.91)	0.00110 (0.12)	-0.0560*** (-3.38)	0.00445 (0.42)	0.0440** (3.02)	0.00638 (1.06)
Trading Distress	-0.00120 (-0.49)	-0.00660** (-2.71)	0.00738** (3.14)	-0.00474 (-1.15)	0.00183 (0.69)	0.000915 (0.25)	0.00142 (0.94)
Financial Distress	0.0351*** (12.30)	-0.0569*** (-19.98)	0.0203*** (7.23)	-0.0485*** (-10.45)	0.0173*** (5.57)	0.0264*** (6.29)	0.00515** (2.89)
Corp Tax Rate	0.0118*** (8.60)	-0.00474*** (-3.60)	-0.00621*** (-4.85)	0.00277 (1.09)	-0.000789 (-0.48)	-0.000682 (-0.30)	-0.00165 (-1.84)
Inflation Rate	-0.0599*** (-5.40)	0.114*** (10.15)	-0.0526*** (-4.92)	0.0525** (2.70)	0.00235 (0.19)	-0.0553** (-3.23)	0.00214 (0.31)
GDPGrowthRate	0.00673* (2.45)	0.00218 (0.84)	-0.00819** (-3.13)	0.0109 (1.72)	-0.00400 (-0.96)	-0.00494 (-0.89)	-0.00263 (-0.94)
Wave 13	-0.0257* (-2.18)	0.0536*** (4.49)	-0.0248* (-2.15)	0.0973*** (4.58)	-0.0260 (-1.96)	-0.0703*** (-3.74)	0.00142 (0.18)
Wave 15	0.0154 (1.33)	0.0276* (2.43)	-0.0394*** (-3.56)	0.113*** (5.65)	-0.0242 (-1.91)	-0.0818*** (-4.59)	-0.00566 (-0.82)
Observations	12688	12688	12688	3846	3846	3846	3846

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0254** (3.02)	-0.0168 (-1.90)	-0.00869 (-1.03)	0.0287 (1.83)	-0.0163 (-1.48)	-0.0109 (-0.84)	-0.000483 (-0.09)
5-10 Years	0.0145 (0.73)	-0.0541** (-2.63)	0.0382* (2.00)	0.0709 (1.85)	-0.0840** (-2.86)	-0.00675 (-0.21)	0.0207* (2.36)
>10 Years	-0.00504 (-0.30)	-0.0169 (-0.95)	0.0182 (1.12)	0.0882** (2.62)	-0.0876** (-3.28)	-0.0209 (-0.77)	0.0213*** (3.76)
Small	0.0926*** (9.56)	-0.0201* (-1.97)	-0.0707*** (-7.10)	0.0429* (2.26)	-0.0254 (-1.85)	0.000477 (0.03)	-0.0160* (-2.32)
Medium	0.166*** (13.73)	-0.0329** (-2.74)	-0.135*** (-11.87)	0.134*** (6.72)	-0.0874*** (-6.67)	-0.0347* (-2.14)	-0.0172* (-2.30)
Construction	-0.00139 (-0.09)	-0.0125 (-0.74)	0.0154 (0.94)	-0.0267 (-0.90)	0.0290 (1.41)	-0.00495 (-0.20)	0.00482 (0.45)
Trade	-0.000754 (-0.06)	0.0222 (1.63)	-0.0205 (-1.57)	0.0110 (0.49)	0.0151 (0.97)	-0.0231 (-1.23)	-0.00257 (-0.32)
Services	-0.0119 (-0.99)	0.00393 (0.31)	0.00935 (0.76)	-0.00685 (-0.32)	0.0259 (1.77)	-0.0213 (-1.21)	0.00589 (0.74)
Exporters	0.0232** (2.59)	0.00350 (0.37)	-0.0267** (-2.98)	-0.0269 (-1.67)	0.00986 (0.88)	0.0256 (1.93)	-0.0103 (-1.72)
Innovators	0.0547*** (6.33)	-0.0588*** (-6.38)	0.00201 (0.23)	-0.0394* (-2.57)	0.0140 (1.30)	0.0234 (1.86)	0.00199 (0.35)
Trading Distress	-0.00896*** (-4.12)	-0.00540* (-2.36)	0.0137*** (6.33)	-0.00572 (-1.49)	0.00554* (2.06)	-0.000182 (-0.06)	-0.0000974 (-0.07)
Financial Distress	0.0209*** (8.09)	-0.0489*** (-18.14)	0.0265*** (10.24)	-0.0395*** (-9.08)	0.0207*** (6.53)	0.0156*** (4.30)	0.00299 (1.79)
Corp Tax Rate	0.0135*** (10.55)	-0.00802*** (-6.27)	-0.00454*** (-3.67)	0.0101*** (4.26)	-0.00348* (-2.09)	-0.00512** (-2.60)	-0.00171* (-2.01)
Inflation Rate	-0.0181 (-1.92)	0.0936*** (9.63)	-0.0731*** (-7.94)	0.120*** (6.88)	-0.0195 (-1.60)	-0.0864*** (-6.18)	-0.00835 (-1.37)
GDPGrowthRate	0.00637* (2.34)	0.00434 (1.60)	-0.0106*** (-3.77)	0.00668 (1.24)	-0.000991 (-0.28)	-0.00292 (-0.66)	-0.00383 (-1.30)
Wave 13	-0.00475 (-0.45)	0.0461*** (4.16)	-0.0391*** (-3.73)	0.123*** (6.34)	-0.0260 (-1.89)	-0.0749*** (-4.67)	-0.0179* (-2.49)
Wave 15	-0.00104 (-0.10)	0.0238* (2.26)	-0.0210* (-2.05)	0.132*** (7.00)	-0.0361** (-2.75)	-0.0754*** (-4.80)	-0.0178* (-2.48)
Observations	14734	14734	14734	4012	4012	4012	4012

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0537*** (4.38)	-0.0165 (-1.32)	-0.0355** (-2.85)	-0.00335 (-0.14)	-0.00928 (-0.77)	0.0198 (0.91)	-0.00876 (-1.69)
5-10 Years	-0.0338 (-1.13)	-0.00360 (-0.12)	0.0354 (1.26)	-0.0435 (-0.81)	0.0115 (0.39)	0.0388 (0.79)	-0.00872 (-0.80)
>10 Years	-0.0313 (-1.21)	-0.0242 (-0.94)	0.0501* (2.09)	-0.0141 (-0.31)	-0.0245 (-1.00)	0.0434 (1.06)	-0.00421 (-0.40)
Small	0.0719*** (5.11)	0.00218 (0.15)	-0.0732*** (-5.13)	0.0179 (0.68)	-0.0393** (-2.85)	0.0301 (1.22)	-0.00436 (-0.79)
Medium	0.126*** (7.15)	-0.0236 (-1.38)	-0.105*** (-6.18)	0.0218 (0.72)	-0.0498*** (-3.30)	0.0334 (1.18)	-0.00757 (-1.42)
Construction	0.0368 (1.60)	-0.0298 (-1.35)	-0.00241 (-0.11)	-0.0887* (-2.32)	0.00868 (0.43)	0.0637 (1.75)	0.0210 (1.75)
Trade	-0.0119 (-0.68)	0.0401* (2.25)	-0.0261 (-1.47)	-0.0262 (-0.89)	-0.00190 (-0.12)	0.0296 (1.08)	-0.00178 (-0.44)
Services	-0.0588*** (-3.38)	0.0307 (1.73)	0.0298 (1.66)	-0.0596 (-1.92)	0.00896 (0.54)	0.0430 (1.48)	0.00664 (1.11)
Exporters	0.0644*** (5.04)	-0.0423** (-3.22)	-0.0213 (-1.65)	-0.0208 (-0.88)	-0.00653 (-0.54)	0.0247 (1.10)	0.00503 (1.04)
Innovators	0.0284* (2.30)	-0.0376** (-2.97)	0.00994 (0.79)	-0.0598** (-2.69)	0.0151 (1.32)	0.0380 (1.79)	0.00683 (1.47)
Trading Distress	-0.00818** (-2.63)	-0.00645* (-2.02)	0.0144*** (4.57)	0.00427 (0.77)	0.000241 (0.09)	-0.00428 (-0.81)	-0.000808 (-0.75)
Financial Distress	0.0115** (3.06)	-0.0428*** (-11.15)	0.0299*** (7.89)	-0.0537*** (-8.44)	0.0152*** (4.36)	0.0376*** (6.09)	0.000879 (0.65)
Corp Tax Rate	-0.000205 (-0.12)	-0.00142 (-0.86)	0.00161 (0.96)	0.00207 (0.68)	-0.000415 (-0.25)	-0.00220 (-0.76)	0.000105 (0.16)
Inflation Rate	-0.0458*** (-3.68)	0.0731*** (5.77)	-0.0261* (-2.08)	0.0686** (2.86)	-0.0131 (-1.10)	-0.0512* (-2.26)	-0.00218 (-0.47)
GDPGrowthRate	0.00361 (1.30)	0.000762 (0.27)	-0.00510 (-1.65)	0.0117* (2.12)	-0.00238 (-0.74)	-0.00954 (-1.82)	-0.00230 (-0.94)
Wave 13	0.00668 (0.45)	0.0144 (0.94)	-0.0206 (-1.36)	0.0707* (2.51)	-0.0285 (-1.83)	-0.0398 (-1.50)	0.00111 (0.22)
Wave 15	0.0243 (1.65)	0.00759 (0.51)	-0.0318* (-2.14)	0.112*** (4.15)	-0.0510*** (-3.60)	-0.0610* (-2.38)	0.00321 (0.59)
Observations	8411	8411	8411	2608	2608	2608	2608

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

### Family-owned SMEs versus Solely owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.00388 (0.52)	0.000972 (0.10)	-0.00504 (-0.55)	-0.0159 (-0.82)	-0.0188 (-1.65)	0.0345* (2.06)	0.00152 (0.31)
5-10 Years	-0.0152 (-0.88)	-0.0612** (-2.87)	0.0758*** (3.76)	0.0175 (0.40)	0.00971 (0.42)	-0.0110 (-0.27)	-0.0159 (-1.36)
>10 Years	-0.0178 (-1.19)	-0.0223 (-1.22)	0.0383* (2.25)	0.0495 (1.32)	0.000631 (0.03)	-0.0422 (-1.24)	-0.00977 (-0.85)
Small	0.0429*** (5.08)	0.00213 (0.19)	-0.0447*** (-4.13)	0.0220 (0.91)	-0.0196 (-1.36)	-0.000338 (-0.02)	-0.000569 (-0.09)
Medium	0.0842*** (7.95)	0.0197 (1.52)	-0.105*** (-8.49)	0.0573* (2.22)	-0.0418** (-2.94)	-0.00941 (-0.42)	-0.00457 (-0.75)
Construction	0.00718 (0.51)	-0.0251 (-1.38)	0.0172 (0.96)	-0.0199 (-0.53)	0.0202 (0.87)	-0.00954 (-0.30)	0.00837 (0.90)
Trade	-0.000969 (-0.09)	0.0203 (1.37)	-0.0208 (-1.43)	0.00689 (0.23)	0.00499 (0.28)	-0.0161 (-0.62)	0.00172 (0.34)
Services	0.0197 (1.90)	0.00284 (0.21)	-0.0231 (-1.73)	-0.00509 (-0.19)	-0.00461 (-0.29)	-0.00239 (-0.10)	0.0110 (1.88)
Exporters	0.0145 (1.84)	0.00180 (0.18)	-0.0164 (-1.68)	-0.0519* (-2.57)	0.0158 (1.37)	0.0294 (1.66)	0.00512 (1.01)
Innovators	0.0236** (3.07)	-0.0312** (-3.14)	0.00691 (0.72)	-0.0261 (-1.33)	-0.00870 (-0.76)	0.0238 (1.39)	0.0101 (1.90)
Trading Distress	-0.00193 (-1.00)	-0.0173*** (-7.02)	0.0186*** (7.85)	-0.00125 (-0.26)	-0.0000628 (-0.02)	0.0000185 (0.00)	0.000189 (0.15)
Financial Distress	0.0113*** (4.85)	-0.0452*** (-15.03)	0.0327*** (11.22)	-0.0360*** (-6.61)	0.0159*** (4.82)	0.0193*** (3.98)	0.00133 (0.91)
Corp Tax Rate	0.00465*** (4.23)	-0.00439** (-3.24)	-0.0000467 (-0.04)	0.00241 (0.86)	-0.000162 (-0.10)	-0.00235 (-0.95)	0.0000244 (0.03)
Inflation Rate	-0.0336*** (-4.01)	0.0904*** (8.45)	-0.0558*** (-5.44)	0.105*** (4.80)	-0.0137 (-1.11)	-0.0790*** (-4.19)	-0.0107 (-1.79)
GDPGrowthRate	0.00771*** (3.50)	0.00259 (0.88)	-0.0113*** (-3.65)	0.00568 (0.87)	-0.00232 (-0.55)	-0.00461 (-0.81)	0.000574 (0.43)
Wave 13	-0.0709*** (-7.52)	0.102*** (8.49)	-0.0286* (-2.48)	0.0631* (2.53)	-0.0158 (-1.09)	-0.0358 (-1.63)	-0.00913 (-1.63)
Wave 15	-0.0429*** (-4.57)	0.0588*** (5.13)	-0.0135 (-1.20)	0.0733** (3.16)	-0.0256 (-1.95)	-0.0520** (-2.58)	0.00262 (0.37)
Observations	13451	13451	13451	2191	2191	2191	2191

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## RQ2 Robustness U – Wave Dummies

### Bank Credit Lines

#### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0601 *** (4.63)	-0.0476 *** (-3.54)	-0.0130 (-1.01)	0.000810 (0.03)	-0.00250 (-0.17)	0.00134 (0.07)	0.00138 (0.17)
5-10 Years	0.0389 (1.34)	-0.0408 (-1.42)	-0.000368 (-0.01)	0.141 ** (2.87)	-0.0583 (-1.65)	-0.0515 (-1.24)	-0.0242 (-1.39)
>10 Years	-0.0161 (-0.65)	-0.0141 (-0.56)	0.0257 (1.15)	0.135 ** (3.02)	-0.0880 ** (-2.73)	-0.0288 (-0.76)	-0.0121 (-0.72)
Small	0.0230 (1.72)	0.0306 * (2.25)	-0.0521 *** (-3.95)	0.0470 * (2.01)	-0.0156 (-1.05)	-0.0216 (-1.06)	-0.00729 (-0.87)
Medium	0.0655 *** (4.33)	0.0374 * (2.48)	-0.102 *** (-7.18)	0.119 *** (4.85)	-0.0568 *** (-3.95)	-0.0468 * (-2.17)	-0.0180 * (-2.20)
Construction	-0.00223 (-0.10)	-0.0180 (-0.86)	0.0226 (1.12)	-0.0503 (-1.44)	0.0194 (0.85)	0.0161 (0.53)	0.0134 (1.02)
Trade	-0.000407 (-0.02)	0.0231 (1.39)	-0.0201 (-1.30)	0.00910 (0.34)	-0.000988 (-0.06)	-0.00433 (-0.19)	-0.00384 (-0.45)
Services	-0.0399 ** (-2.58)	0.00768 (0.50)	0.0321 * (2.18)	0.0174 (0.69)	-0.0135 (-0.85)	-0.00981 (-0.45)	0.00580 (0.65)
Exporters	0.0197 (1.63)	-0.0161 (-1.34)	-0.00295 (-0.26)	-0.0277 (-1.41)	-0.00338 (-0.28)	0.0357 * (2.06)	-0.00494 (-0.72)
Innovators	0.0646 *** (5.59)	-0.0714 *** (-6.13)	0.00519 (0.47)	-0.0369 * (-1.99)	0.0168 (1.46)	0.0177 (1.08)	0.00304 (0.46)
Trading Distress	-0.00348 (-1.20)	-0.00575 * (-1.98)	0.00882 ** (3.21)	-0.00585 (-1.27)	0.00138 (0.48)	0.00229 (0.56)	0.00176 (1.06)
Financial Distress	0.0323 *** (9.43)	-0.0566 *** (-16.73)	0.0227 *** (6.94)	-0.0479 *** (-9.19)	0.0173 *** (5.11)	0.0273 *** (5.78)	0.00362 (1.87)
Corp Tax Rate	0.0114 *** (7.18)	-0.00602 *** (-3.97)	-0.00479 ** (-3.27)	0.00137 (0.49)	0.000638 (0.35)	-0.000471 (-0.18)	-0.00188 (-1.88)
Inflation Rate	-0.0596 *** (-4.59)	0.103 *** (7.98)	-0.0424 *** (-3.48)	0.0465 * (2.14)	0.00375 (0.28)	-0.0497 * (-2.58)	-0.00158 (-0.20)
GDPGrowthRate	0.00437 (1.35)	0.00235 (0.78)	-0.00634 * (-2.13)	0.0104 (1.51)	-0.0000328 (-0.01)	-0.00732 (-1.11)	-0.00612 (-1.50)
Wave 13	-0.0142 (-1.02)	0.0433 ** (3.09)	-0.0266 * (-2.00)	0.107 *** (4.50)	-0.0272 (-1.87)	-0.0799 *** (-3.81)	0.00245 (0.29)
Wave 15	0.0211 (1.55)	0.0191 (1.42)	-0.0370 ** (-2.88)	0.124 *** (5.49)	-0.0308 * (-2.22)	-0.0886 *** (-4.38)	-0.00246 (-0.32)
Observations	9587	9587	9587	3001	3001	3001	3001

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Bank Loans

	Family-owned SMEs versus Professionally owned SMEs						
	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0318** (2.69)	-0.0360** (-2.87)	0.00381 (0.32)	-0.0280 (-1.40)	0.00658 (0.47)	0.0138 (0.83)	0.00854 (1.34)
5-10 Years	-0.0296 (-1.14)	-0.0366 (-1.43)	0.0592* (2.46)	0.0984* (2.11)	-0.108** (-3.09)	0.0152 (0.39)	0.00191 (0.16)
>10 Years	-0.0286 (-1.27)	0.0171 (0.76)	0.00255 (0.12)	0.140*** (3.44)	-0.109*** (-3.41)	-0.0347 (-1.06)	0.00804 (0.80)
Small	0.0875*** (7.36)	-0.00678 (-0.54)	-0.0778*** (-6.31)	0.0687** (2.99)	-0.0435** (-2.78)	-0.0108 (-0.58)	-0.0105 (-1.24)
Medium	0.161*** (11.88)	-0.0180 (-1.30)	-0.143*** (-10.86)	0.138*** (5.88)	-0.0768*** (-4.88)	-0.0453* (-2.38)	-0.0164 (-1.93)
Construction	-0.0198 (-1.02)	-0.00523 (-0.26)	0.0240 (1.26)	-0.0788* (-2.32)	0.0636** (2.66)	0.00970 (0.34)	0.00442 (0.37)
Trade	0.0199 (1.33)	0.0182 (1.20)	-0.0358* (-2.52)	0.0211 (0.91)	0.0140 (0.93)	-0.0285 (-1.46)	-0.00629 (-0.80)
Services	-0.0219 (-1.62)	0.0131 (0.94)	0.00973 (0.73)	-0.00906 (-0.41)	0.0276 (1.92)	-0.0192 (-1.03)	0.00378 (0.47)
Exporters	0.0247* (2.30)	-0.0201 (-1.83)	-0.00355 (-0.35)	-0.0337 (-1.90)	0.00702 (0.60)	0.0278 (1.86)	-0.00246 (-0.39)
Innovators	0.0662*** (6.40)	-0.0570*** (-5.28)	-0.0117 (-1.16)	-0.0272 (-1.63)	0.0119 (1.06)	0.0114 (0.81)	0.00470 (0.80)
Trading Distress	-0.00889*** (-3.40)	-0.00618* (-2.30)	0.0142*** (5.70)	-0.00464 (-1.11)	0.00607* (2.15)	-0.000147 (-0.04)	-0.00135 (-0.90)
Financial Distress	0.0255*** (8.27)	-0.0515*** (-16.36)	0.0245*** (8.21)	-0.0386*** (-8.09)	0.0194*** (5.89)	0.0152*** (3.75)	0.00366* (2.05)
Corp Tax Rate	0.0140*** (9.23)	-0.00945*** (-6.41)	-0.00357* (-2.51)	0.00995*** (3.80)	-0.00230 (-1.27)	-0.00665** (-3.01)	-0.00130 (-1.47)
Inflation Rate	-0.0173 (-1.57)	0.0816*** (7.38)	-0.0613*** (-5.92)	0.134*** (7.29)	-0.0375** (-3.03)	-0.0927*** (-6.12)	0.000326 (0.05)
GDPGrowthRate	0.00531 (1.66)	0.00489 (1.56)	-0.0105** (-3.24)	0.0168* (2.48)	-0.00500 (-1.12)	-0.00877 (-1.52)	-0.00526 (-1.49)
Wave 13	0.00259 (0.21)	0.0474*** (3.65)	-0.0479*** (-3.98)	0.103*** (4.79)	-0.0152 (-1.04)	-0.0717*** (-4.01)	-0.0117 (-1.55)
Wave 15	0.0202 (1.66)	0.0142 (1.16)	-0.0329** (-2.79)	0.118*** (5.76)	-0.0350** (-2.59)	-0.0695*** (-3.96)	-0.0117 (-1.57)
Observations	11190	11190	11190	3241	3241	3241	3241

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Trade Credit

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0114 (0.69)	-0.0130 (-0.78)	0.00254 (0.16)	-0.0292 (-1.08)	0.0155 (1.25)	0.0118 (0.45)	0.00390 (1.19)
5-10 Years	-0.0643 (-1.77)	0.0256 (0.75)	0.0372 (1.17)	-0.0336 (-0.59)	-0.0292 (-0.95)	0.0782 (1.46)	0 (.)
>10 Years	-0.0881** (-2.77)	0.0293 (0.99)	0.0528 (1.93)	0.0234 (0.48)	-0.0472 (-1.74)	0.0329 (0.74)	-0.00510 (-0.53)
Small	0.0811*** (4.86)	0.00195 (0.12)	-0.0809*** (-4.89)	0.0328 (1.11)	-0.0436** (-2.94)	0.0292 (1.05)	-0.0109 (-1.54)
Medium	0.123*** (6.42)	-0.0139 (-0.74)	-0.108*** (-5.85)	0.0508 (1.57)	-0.0533*** (-3.39)	0.0126 (0.42)	-0.00997 (-1.32)
Construction	0.0449 (1.68)	-0.0107 (-0.42)	-0.0294 (-1.20)	-0.0418 (-1.01)	0.00448 (0.22)	0.0296 (0.75)	0.00907 (0.79)
Trade	0.0136 (0.69)	0.0297 (1.54)	-0.0420* (-2.28)	0.00909 (0.30)	-0.0119 (-0.80)	0.00101 (0.03)	-0.00337 (-0.84)
Services	-0.0639*** (-3.33)	0.0181 (0.94)	0.0461* (2.42)	-0.0399 (-1.23)	-0.00180 (-0.11)	0.0336 (1.08)	0.00311 (0.50)
Exporters	0.0565*** (3.78)	-0.0497*** (-3.36)	-0.00616 (-0.43)	-0.0195 (-0.78)	-0.0101 (-0.87)	0.0269 (1.11)	0.00674 (1.36)
Innovators	0.0218 (1.52)	-0.0315* (-2.21)	0.00994 (0.72)	-0.0221 (-0.94)	0.0174 (1.60)	0.00289 (0.13)	0.000957 (0.26)
Trading Distress	-0.0140*** (-3.90)	-0.00350 (-0.98)	0.0173*** (5.03)	0.0116* (1.98)	0.00000319 (0.00)	-0.0108 (-1.92)	-0.00139 (-1.28)
Financial Distress	0.0139** (3.18)	-0.0430*** (-9.99)	0.0277*** (6.69)	-0.0590*** (-8.74)	0.0148*** (4.42)	0.0427*** (6.42)	0.00129 (1.05)
Corp Tax Rate	0.000446 (0.23)	-0.00191 (-1.03)	0.00143 (0.77)	0.00440 (1.35)	-0.00119 (-0.73)	-0.00436 (-1.39)	0.000506 (0.88)
Inflation Rate	-0.0546*** (-3.83)	0.0714*** (5.09)	-0.0155 (-1.14)	0.0834** (3.29)	-0.0116 (-1.00)	-0.0736** (-3.03)	0.00395 (1.00)
GDPGrowthRate	0.00298 (0.92)	0.000776 (0.24)	-0.00436 (-1.28)	0.0172** (2.65)	-0.00462 (-1.01)	-0.0149* (-2.43)	0.000280 (0.25)
Wave 13	0.0389* (2.29)	0.00718 (0.42)	-0.0461** (-2.80)	0.0459 (1.56)	-0.0274 (-1.91)	-0.0146 (-0.52)	0.00252 (0.70)
Wave 15	0.0549** (3.22)	-0.0208 (-1.24)	-0.0354* (-2.15)	0.0775** (2.68)	-0.0313* (-2.18)	-0.0484 (-1.75)	0.00682 (1.47)
Observations	6849	6849	6849	2334	2334	2334	2097

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## Other Sources

### Family-owned SMEs versus Professionally owned SMEs

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	-0.0219*	0.000302	0.0205	-0.0415	0.000279	0.0387*	0.00494
	(-2.17)	(0.02)	(1.76)	(-1.90)	(0.02)	(2.00)	(1.00)
5-10 Years	-0.0158	-0.0696**	0.0818***	-0.0154	0.0122	-0.00595	0.00768
	(-0.71)	(-2.65)	(3.39)	(-0.30)	(0.47)	(-0.12)	(0.90)
>10 Years	-0.0225	-0.0287	0.0461*	0.0537	-0.00448	-0.0599	0.00638
	(-1.17)	(-1.26)	(2.26)	(1.22)	(-0.21)	(-1.44)	(1.15)
Small	0.0458***	0.0271*	-0.0701***	0.0248	-0.00269	-0.0141	-0.00341
	(4.29)	(1.99)	(-5.28)	(0.86)	(-0.17)	(-0.55)	(-0.47)
Medium	0.0618***	0.0517***	-0.111***	0.0766**	-0.0273	-0.0376	-0.00835
	(5.26)	(3.50)	(-7.85)	(2.59)	(-1.84)	(-1.43)	(-1.21)
Construction	0.00110	-0.0208	0.0201	-0.0131	0.000700	0.00408	0.00659
	(0.06)	(-0.99)	(1.00)	(-0.33)	(0.03)	(0.11)	(0.71)
Trade	-0.00511	0.0233	-0.0176	0.0274	-0.000889	-0.0292	0.00159
	(-0.39)	(1.42)	(-1.12)	(0.93)	(-0.06)	(-1.09)	(0.33)
Services	0.00640	0.00643	-0.0117	-0.0139	0.00211	-0.00101	0.0114
	(0.54)	(0.43)	(-0.82)	(-0.51)	(0.15)	(-0.04)	(1.91)
Exporters	0.0148	-0.00861	-0.00644	-0.0539*	0.0163	0.0323	0.00383
	(1.57)	(-0.74)	(-0.58)	(-2.46)	(1.42)	(1.63)	(0.72)
Innovators	0.0252**	-0.0230*	-0.00281	-0.0140	-0.0153	0.0153	0.0123*
	(2.74)	(-2.02)	(-0.26)	(-0.66)	(-1.34)	(0.81)	(2.13)
Trading Distress	-0.00188	-0.0145***	0.0158***	-0.00356	0.000728	-0.000141	0.00201
	(-0.81)	(-5.12)	(5.89)	(-0.68)	(0.27)	(-0.03)	(1.45)
Financial Distress	0.00992***	-0.0468***	0.0353***	-0.0278***	0.0127***	0.0143**	0.000492
	(3.52)	(-13.42)	(10.65)	(-4.72)	(3.91)	(2.65)	(0.34)
Corp Tax Rate	0.00460***	-0.00662***	0.00208	0.00351	-0.00114	-0.00312	0.000571
	(3.63)	(-4.38)	(1.42)	(1.20)	(-0.74)	(-1.19)	(0.65)
Inflation Rate	-0.0308**	0.0747***	-0.0430***	0.0959***	-0.0238*	-0.0621**	-0.00832
	(-3.20)	(6.32)	(-3.85)	(4.24)	(-2.08)	(-3.07)	(-1.39)
GDPGrowthRate	0.00855***	0.00133	-0.0121***	0.00752	-0.00533	-0.00516	0.00126
	(3.39)	(0.41)	(-3.42)	(1.10)	(-1.09)	(-0.85)	(1.05)
Wave 13	-0.0718***	0.107***	-0.0332**	0.0729**	-0.00539	-0.0539*	-0.0115
	(-6.44)	(7.82)	(-2.58)	(2.81)	(-0.39)	(-2.31)	(-1.83)
Wave 15	-0.0517***	0.0566***	-0.00292	0.0515*	-0.0108	-0.0382	-0.00413
	(-4.69)	(4.31)	(-0.23)	(2.04)	(-0.83)	(-1.68)	(-0.57)
Observations	10786	10786	10786	1953	1953	1953	1953

t statistics in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## RQ2 Robustness V – Mature Firms Subsample

### RQ2 Age Subsample Bank Credit Lines FF SO

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0301** (2.89)	-0.0372*** (-3.52)	0.00763 (0.76)	0.0323 (1.73)	-0.0185 (-1.61)	-0.0206 (-1.25)	0.00631 (1.02)
Small	0.0428*** (3.56)	-0.00373 (-0.31)	-0.0388** (-3.28)	0.0221 (1.02)	-0.0147 (-1.08)	-0.00432 (-0.23)	-0.00174 (-0.23)
Medium	0.0663*** (4.68)	0.0168 (1.18)	-0.0842*** (-6.31)	0.0932*** (3.90)	-0.0524*** (-3.85)	-0.0310 (-1.47)	-0.0136 (-1.81)
Construction	0.0117 (0.59)	-0.0290 (-1.48)	0.0180 (0.95)	-0.0197 (-0.59)	-0.000157 (-0.01)	0.0106 (0.37)	0.00623 (0.52)
Trade	-0.0114 (-0.71)	0.0285 (1.78)	-0.0165 (-1.08)	-0.00748 (-0.28)	-0.00280 (-0.15)	0.0123 (0.53)	-0.00214 (-0.23)
Services	-0.0468** (-3.09)	0.0194 (1.28)	0.0274 (1.86)	0.0250 (0.97)	-0.0360* (-2.16)	0.00878 (0.39)	0.00148 (0.16)
Exporters	0.0290** (2.60)	-0.0110 (-0.97)	-0.0186 (-1.72)	-0.0361 (-1.87)	-0.00638 (-0.54)	0.0553** (3.26)	-0.0136 (-1.92)
Innovators	0.0600*** (5.54)	-0.0660*** (-5.93)	0.00439 (0.41)	-0.0470* (-2.53)	0.00920 (0.80)	0.0311 (1.90)	0.00584 (0.90)
Trading Distress	-0.000380 (-0.14)	-0.00813** (-2.99)	0.00800** (3.07)	-0.00382 (-0.84)	0.00195 (0.69)	-0.000271 (-0.07)	0.00162 (1.00)
Financial Health	0.0355*** (11.22)	-0.0590*** (-18.58)	0.0222*** (7.13)	-0.0512*** (-9.87)	0.0158*** (4.75)	0.0307*** (6.52)	0.00497** (2.58)
Corp Tax Rate	0.0107*** (7.06)	-0.00409** (-2.78)	-0.00591*** (-4.19)	0.00387 (1.37)	-0.00181 (-1.06)	-0.000913 (-0.36)	-0.00136 (-1.45)
Inflation Rate	-0.0651*** (-5.55)	0.102*** (8.61)	-0.0368** (-3.24)	0.0417* (1.99)	0.00782 (0.62)	-0.0504** (-2.72)	0.00199 (0.28)
GDP Growth Rate	0.00482 (1.65)	0.00362 (1.29)	-0.00803** (-2.88)	0.0169* (2.40)	-0.00595 (-1.39)	-0.0103 (-1.57)	-0.00134 (-0.57)
<i>N</i>	10380	10380	10380	3133	3133	3133	3133

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## RQ2 Age Subsample Bank Loans FF SO

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0257** (2.73)	-0.0104 (-1.05)	-0.0157 (-1.67)	0.0327 (1.89)	-0.0206 (-1.74)	-0.0164 (-1.14)	0.00387 (0.62)
Small	0.0959*** (8.96)	-0.0262* (-2.30)	-0.0671*** (-6.02)	0.0432* (2.03)	-0.0139 (-0.94)	-0.0103 (-0.60)	-0.0162* (-2.05)
Medium	0.170*** (13.12)	-0.0313* (-2.38)	-0.140*** (-11.38)	0.132*** (5.98)	-0.0720*** (-5.13)	-0.0457* (-2.56)	-0.0174* (-2.05)
Construction	-0.00234 (-0.13)	-0.0140 (-0.76)	0.0179 (1.00)	-0.0274 (-0.87)	0.0382 (1.78)	-0.0129 (-0.49)	0.00482 (0.42)
Trade	-0.00480 (-0.34)	0.0336* (2.26)	-0.0264 (-1.87)	0.00703 (0.29)	0.0214 (1.33)	-0.0235 (-1.16)	-0.00346 (-0.41)
Services	-0.0106 (-0.81)	0.00513 (0.37)	0.00814 (0.60)	-0.00641 (-0.28)	0.0255 (1.70)	-0.0256 (-1.34)	0.0107 (1.23)
Exporters	0.0296** (2.97)	-0.00700 (-0.67)	-0.0225* (-2.27)	-0.0275 (-1.56)	0.00458 (0.39)	0.0300* (2.06)	-0.00757 (-1.14)
Innovators	0.0570*** (5.87)	-0.0560*** (-5.39)	-0.00330 (-0.34)	-0.0286 (-1.69)	0.00411 (0.36)	0.0228 (1.65)	0.00151 (0.24)
Trading Distress	-0.0102*** (-4.21)	-0.00382 (-1.49)	0.0134*** (5.58)	-0.00787 (-1.86)	0.00684* (2.38)	-0.00138 (-0.39)	0.00195 (1.23)
Financial Health	0.0228*** (7.91)	-0.0501*** (-16.63)	0.0259*** (9.00)	-0.0409*** (-8.52)	0.0195*** (5.81)	0.0178*** (4.41)	0.00351 (1.87)
Corp Tax Rate	0.0126*** (8.85)	-0.00737*** (-5.15)	-0.00446** (-3.26)	0.0115*** (4.42)	-0.00342 (-1.93)	-0.00622** (-2.88)	-0.00208* (-2.27)
Inflation Rate	-0.0240* (-2.40)	0.0890*** (8.63)	-0.0635*** (-6.49)	0.0942*** (5.17)	-0.0271* (-2.16)	-0.0650*** (-4.38)	-0.00168 (-0.25)
GDP Growth Rate	0.00376 (1.27)	0.00651* (2.23)	-0.0104*** (-3.52)	0.0153* (2.48)	-0.00196 (-0.53)	-0.0111 (-1.91)	-0.00484 (-1.47)
<i>N</i>	11992	11992	11992	3340	3340	3340	3340

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

RQ2 Age Subsample Trade Credit FF SO

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0404** (2.93)	-0.0125 (-0.89)	-0.0266 (-1.92)	-0.0109 (-0.43)	-0.00580 (-0.47)	0.0221 (0.91)	-0.00740 (-1.35)
Small	0.0762*** (4.91)	0.0150 (0.95)	-0.0899*** (-5.66)	0.00903 (0.31)	-0.0368* (-2.54)	0.0367 (1.34)	-0.00345 (-0.55)
Medium	0.133*** (6.98)	-0.00193 (-0.10)	-0.134*** (-7.25)	0.0209 (0.64)	-0.0409* (-2.55)	0.0295 (0.96)	-0.00887 (-1.60)
Construction	0.0279 (1.11)	-0.0258 (-1.08)	0.00181 (0.07)	-0.0848* (-2.04)	0.000407 (0.02)	0.0643 (1.62)	0.0253 (1.84)
Trade	-0.0192 (-0.99)	0.0511** (2.65)	-0.0300 (-1.56)	-0.0312 (-0.99)	0.000235 (0.01)	0.0308 (1.03)	-0.000396 (-0.10)
Services	-0.0694*** (-3.61)	0.0356 (1.83)	0.0348 (1.76)	-0.0546 (-1.62)	0.00200 (0.12)	0.0419 (1.31)	0.00789 (1.30)
Exporters	0.0692*** (4.85)	-0.0505*** (-3.48)	-0.0181 (-1.26)	-0.0175 (-0.67)	-0.00381 (-0.31)	0.0164 (0.66)	0.00581 (1.08)
Innovators	0.0176 (1.28)	-0.0366** (-2.60)	0.0200 (1.44)	-0.0729** (-2.98)	0.0166 (1.41)	0.0468* (1.99)	0.00790 (1.53)
Trading Distress	-0.00858* (-2.48)	-0.00541 (-1.53)	0.0136*** (3.91)	0.00188 (0.31)	0.00153 (0.53)	-0.00384 (-0.66)	-0.000284 (-0.25)
Financial Health	0.0128** (3.06)	-0.0444*** (-10.49)	0.0304*** (7.27)	-0.0532*** (-7.54)	0.0147*** (4.02)	0.0377*** (5.48)	0.000832 (0.59)
Corp Tax Rate	-0.000931 (-0.52)	-0.00136 (-0.76)	0.00212 (1.16)	0.00164 (0.50)	0.000246 (0.14)	-0.00251 (-0.80)	0.000107 (0.16)
Inflation Rate	-0.0499*** (-3.66)	0.0660*** (4.79)	-0.0150 (-1.09)	0.0405 (1.55)	-0.00870 (-0.70)	-0.0338 (-1.36)	0.00184 (0.37)
GDP Growth Rate	0.00278 (0.93)	0.00157 (0.52)	-0.00518 (-1.56)	0.0105 (1.79)	-0.00184 (-0.56)	-0.00928 (-1.66)	-0.00108 (-0.45)
<i>N</i>	6930	6930	6930	2194	2194	2194	2194

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

RQ2 Age Subsample Other Sources FF SO

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.00751 (0.89)	-0.00537 (-0.50)	-0.00250 (-0.24)	-0.0149 (-0.70)	-0.0154 (-1.25)	0.0274 (1.49)	0.00405 (0.79)
Small	0.0478*** (5.06)	-0.00596 (-0.47)	-0.0412*** (-3.36)	-0.00164 (-0.06)	-0.0129 (-0.77)	0.0135 (0.60)	0.00266 (0.39)
Medium	0.0926*** (8.04)	0.0159 (1.11)	-0.109*** (-8.00)	0.0368 (1.32)	-0.0491** (-3.18)	0.0152 (0.62)	-0.00275 (-0.44)
Construction	0.0176 (1.14)	-0.0329 (-1.63)	0.0134 (0.69)	-0.0266 (-0.66)	0.0296 (1.18)	-0.00886 (-0.26)	0.00384 (0.50)
Trade	0.00488 (0.40)	0.0225 (1.37)	-0.0292 (-1.84)	-0.00913 (-0.28)	0.0185 (0.96)	-0.0196 (-0.70)	0.00451 (0.78)
Services	0.0323** (2.83)	-0.00489 (-0.32)	-0.0288 (-1.95)	0.000125 (0.00)	-0.00648 (-0.41)	-0.00883 (-0.35)	0.0109 (1.76)
Exporters	0.0242** (2.72)	-0.00659 (-0.57)	-0.0177 (-1.61)	-0.0452* (-2.03)	0.0259* (2.06)	0.0183 (0.94)	0.0000182 (0.00)
Innovators	0.0109 (1.24)	-0.0238* (-2.10)	0.0122 (1.13)	-0.0292 (-1.35)	-0.00420 (-0.34)	0.0209 (1.11)	0.0108 (1.88)
Trading Distress	-0.000524 (-0.24)	-0.0185*** (-6.68)	0.0184*** (6.94)	-0.00120 (-0.23)	-0.000950 (-0.32)	0.000878 (0.19)	0.000249 (0.18)
Financial Health	0.0101*** (3.84)	-0.0448*** (-13.19)	0.0337*** (10.35)	-0.0371*** (-6.22)	0.0169*** (4.75)	0.0194*** (3.66)	0.000978 (0.63)
Corp Tax Rate	0.00394** (3.20)	-0.00368* (-2.40)	-0.000193 (-0.13)	0.00520 (1.70)	-0.000166 (-0.10)	-0.00481 (-1.81)	-0.000393 (-0.51)
Inflation Rate	-0.0116 (-1.30)	0.0637*** (5.61)	-0.0516*** (-4.77)	0.0949*** (4.10)	0.00751 (0.58)	-0.0922*** (-4.59)	-0.00772 (-1.31)
GDP Growth Rate	0.00419 (1.71)	0.00599 (1.86)	-0.0110*** (-3.32)	0.00966 (1.32)	-0.00114 (-0.27)	-0.00865 (-1.32)	-0.000573 (-0.34)
<i>N</i>	10753	10753	10753	1747	1747	1747	1747

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

### RQ2 Robustness W – Mature Firms Subsample

#### RQ2 Age Subsample Bank Credit Lines FF Pro

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0537*** (3.76)	-0.0522*** (-3.51)	-0.00186 (-0.13)	-0.0198 (-0.78)	0.0000767 (0.01)	0.0165 (0.75)	0.00285 (0.32)
Small	0.0301* (2.04)	0.0234 (1.55)	-0.0515*** (-3.51)	0.0333 (1.27)	-0.0242 (-1.50)	-0.00299 (-0.13)	-0.00390 (-0.42)
Medium	0.0644*** (3.94)	0.0405* (2.46)	-0.104*** (-6.62)	0.109*** (3.97)	-0.0586*** (-3.71)	-0.0375 (-1.57)	-0.0152 (-1.67)
Construction	-0.00192 (-0.08)	-0.0268 (-1.17)	0.0304 (1.39)	-0.0440 (-1.16)	0.00348 (0.15)	0.0295 (0.88)	0.00952 (0.73)
Trade	-0.000709 (-0.04)	0.0197 (1.11)	-0.0162 (-0.98)	-0.00422 (-0.15)	-0.00547 (-0.31)	0.00900 (0.36)	-0.000933 (-0.10)
Services	-0.0518** (-3.10)	0.00672 (0.40)	0.0450** (2.82)	0.00667 (0.24)	-0.0232 (-1.39)	0.00446 (0.19)	0.0114 (1.17)
Exporters	0.0265* (2.00)	-0.0295* (-2.23)	0.00266 (0.21)	-0.0326 (-1.49)	-0.00659 (-0.52)	0.0436* (2.25)	-0.00382 (-0.50)
Innovators	0.0541*** (4.25)	-0.0663*** (-5.14)	0.0104 (0.85)	-0.0351 (-1.70)	0.0185 (1.55)	0.0129 (0.71)	0.00290 (0.40)
Trading Distress	-0.000939 (-0.30)	-0.00761* (-2.39)	0.00802** (2.67)	-0.00800 (-1.58)	0.00212 (0.71)	0.00294 (0.65)	0.00245 (1.34)
Financial Health	0.0337*** (8.99)	-0.0576*** (-15.49)	0.0226*** (6.30)	-0.0472*** (-8.05)	0.0163*** (4.56)	0.0274*** (5.15)	0.00319 (1.49)
Corp Tax Rate	0.0103*** (5.93)	-0.00539** (-3.25)	-0.00437** (-2.74)	0.00240 (0.77)	-0.000322 (-0.18)	-0.00102 (-0.36)	-0.00135 (-1.22)
Inflation Rate	-0.0750*** (-5.44)	0.104*** (7.59)	-0.0289* (-2.22)	0.0367 (1.53)	0.00416 (0.30)	-0.0396 (-1.86)	-0.000756 (-0.09)
GDP Growth Rate	0.00406 (1.20)	0.00394 (1.23)	-0.00790* (-2.44)	0.0167* (2.24)	-0.00248 (-0.64)	-0.0127 (-1.68)	-0.00387 (-0.95)
<i>N</i>	8020	8020	8020	2506	2506	2506	2506

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## RQ2 Age Subsample Bank Loans FF Pro

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0310* (2.37)	-0.0429** (-3.08)	0.0123 (0.96)	-0.0409 (-1.91)	0.00129 (0.09)	0.0241 (1.38)	0.0143* (2.30)
Small	0.0924*** (7.05)	-0.0189 (-1.34)	-0.0702*** (-5.12)	0.0746** (2.89)	-0.0555** (-3.20)	-0.00553 (-0.26)	-0.00694 (-0.76)
Medium	0.166*** (11.35)	-0.0196 (-1.28)	-0.145*** (-10.09)	0.143*** (5.45)	-0.0794*** (-4.49)	-0.0483* (-2.30)	-0.0128 (-1.38)
Construction	-0.0195 (-0.92)	-0.00588 (-0.27)	0.0237 (1.16)	-0.0699 (-1.93)	0.0703** (2.74)	0.00247 (0.08)	-0.00269 (-0.24)
Trade	0.0201 (1.24)	0.0216 (1.31)	-0.0374* (-2.47)	0.0200 (0.82)	0.0142 (0.91)	-0.0299 (-1.45)	-0.00407 (-0.50)
Services	-0.0222 (-1.50)	0.00964 (0.63)	0.0142 (0.99)	-0.00495 (-0.21)	0.0202 (1.36)	-0.0215 (-1.08)	0.0101 (1.14)
Exporters	0.0335** (2.83)	-0.0332** (-2.73)	0.000350 (0.03)	-0.0347 (-1.81)	0.00460 (0.37)	0.0303 (1.88)	0.000136 (0.02)
Innovators	0.0744*** (6.51)	-0.0581*** (-4.84)	-0.0198 (-1.78)	-0.0239 (-1.33)	-0.00291 (-0.24)	0.0223 (1.50)	0.00413 (0.64)
Trading Distress	-0.00871** (-3.04)	-0.00577 (-1.95)	0.0137*** (5.06)	-0.00495 (-1.09)	0.00651* (2.20)	-0.00140 (-0.37)	-0.000287 (-0.18)
Financial Health	0.0294*** (8.69)	-0.0542*** (-15.68)	0.0234*** (7.20)	-0.0383*** (-7.39)	0.0179*** (5.19)	0.0165*** (3.75)	0.00359 (1.82)
Corp Tax Rate	0.0138*** (8.34)	-0.00902*** (-5.56)	-0.00396** (-2.58)	0.0104*** (3.66)	-0.00159 (-0.81)	-0.00766** (-3.25)	-0.00120 (-1.24)
Inflation Rate	-0.0266* (-2.27)	0.0791*** (6.71)	-0.0506*** (-4.61)	0.114*** (5.79)	-0.0509*** (-3.84)	-0.0706*** (-4.35)	0.00513 (0.75)
GDP Growth Rate	0.00408 (1.18)	0.00729* (2.16)	-0.0118*** (-3.44)	0.0296*** (3.59)	-0.00695 (-1.46)	-0.0193* (-2.45)	-0.00715 (-1.79)
<i>N</i>	9308	9308	9308	2758	2758	2758	2758

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## RQ2 Age Subsample Trade Credit FF Pro

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	0.0172 (0.94)	-0.0246 (-1.33)	0.00678 (0.38)	-0.0627* (-2.16)	0.0224* (1.99)	0.0381 (1.35)	0.00232 (0.62)
Small	0.0839*** (4.57)	0.0134 (0.72)	-0.0936*** (-5.07)	0.0318 (0.97)	-0.0409** (-2.60)	0.0306 (0.99)	-0.0133 (-1.45)
Medium	0.126*** (6.01)	0.00133 (0.06)	-0.124*** (-6.08)	0.0474 (1.33)	-0.0443** (-2.61)	0.0115 (0.35)	-0.0125 (-1.31)
Construction	0.0314 (1.09)	-0.00191 (-0.07)	-0.0241 (-0.91)	-0.0150 (-0.34)	-0.0211 (-1.17)	0.0275 (0.64)	0.0144 (0.99)
Trade	0.0119 (0.56)	0.0315 (1.52)	-0.0416* (-2.10)	0.00757 (0.23)	-0.0136 (-0.86)	0.00261 (0.08)	-0.00311 (-0.81)
Services	-0.0783*** (-3.74)	0.0164 (0.79)	0.0617** (2.96)	-0.0384 (-1.08)	-0.0101 (-0.60)	0.0397 (1.16)	0.00157 (0.28)
Exporters	0.0634*** (3.83)	-0.0580*** (-3.54)	-0.00495 (-0.31)	-0.00829 (-0.30)	-0.0166 (-1.39)	0.0186 (0.70)	0.00985 (1.49)
Innovators	0.0190 (1.20)	-0.0304 (-1.93)	0.0118 (0.78)	-0.0327 (-1.27)	0.0182 (1.64)	0.0109 (0.43)	0.00210 (0.56)
Trading Distress	-0.0136*** (-3.44)	-0.00392 (-0.99)	0.0172*** (4.57)	0.00528 (0.83)	0.00107 (0.39)	-0.00555 (-0.90)	-0.00161 (-1.43)
Financial Health	0.0159*** (3.33)	-0.0445*** (-9.42)	0.0273*** (6.01)	-0.0559*** (-7.50)	0.0130*** (3.81)	0.0410*** (5.57)	0.00144 (1.17)
Corp Tax Rate	-0.000380 (-0.18)	-0.000982 (-0.49)	0.00118 (0.59)	0.00432 (1.24)	-0.00134 (-0.83)	-0.00418 (-1.24)	0.000394 (0.75)
Inflation Rate	-0.0615*** (-3.99)	0.0680*** (4.47)	-0.00548 (-0.37)	0.0783** (2.82)	-0.00954 (-0.81)	-0.0733** (-2.75)	0.00526 (1.30)
GDP Growth Rate	0.00314 (0.90)	0.00214 (0.63)	-0.00600 (-1.64)	0.0174* (2.43)	-0.00705 (-1.32)	-0.0140* (-2.10)	0.000331 (0.38)
<i>N</i>	5727	5727	5727	1967	1967	1967	1967

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

RQ2 Age Subsample Other Sources FF Pro

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
Family Firms	-0.0129 (-1.16)	-0.00760 (-0.55)	0.0198 (1.53)	-0.0623** (-2.74)	-0.0000638 (-0.00)	0.0546** (2.76)	0.00754 (1.59)
Small	0.0572*** (4.78)	0.0211 (1.35)	-0.0749*** (-4.95)	0.0122 (0.39)	-0.00311 (-0.17)	-0.00211 (-0.08)	-0.00308 (-0.39)
Medium	0.0682*** (5.30)	0.0551*** (3.32)	-0.120*** (-7.53)	0.0467 (1.44)	-0.0406* (-2.34)	0.00143 (0.05)	-0.00643 (-0.82)
Construction	0.0105 (0.56)	-0.0229 (-0.99)	0.0114 (0.52)	-0.0107 (-0.26)	-0.00619 (-0.28)	0.00591 (0.16)	0.00617 (0.62)
Trade	0.00111 (0.08)	0.0292 (1.63)	-0.0296 (-1.75)	0.0106 (0.34)	-0.00365 (-0.20)	-0.0140 (-0.50)	0.00228 (0.39)
Services	0.0168 (1.29)	0.00523 (0.32)	-0.0216 (-1.38)	-0.0113 (-0.39)	-0.0109 (-0.68)	0.00885 (0.34)	0.00897 (1.36)
Exporters	0.0261* (2.47)	-0.0138 (-1.06)	-0.0125 (-1.02)	-0.0409 (-1.75)	0.0200 (1.64)	0.0174 (0.83)	0.00324 (0.56)
Innovators	0.0195 (1.90)	-0.0197 (-1.54)	-0.000676 (-0.06)	-0.0131 (-0.57)	-0.0198 (-1.58)	0.0204 (1.01)	0.0103 (1.71)
Trading Distress	0.000237 (0.09)	-0.0153*** (-4.85)	0.0143*** (4.84)	-0.00531 (-0.96)	0.00225 (0.79)	-0.0000277 (-0.01)	0.00214 (1.39)
Financial Health	0.00930** (2.97)	-0.0469*** (-12.10)	0.0362*** (9.90)	-0.0305*** (-4.82)	0.0133*** (3.85)	0.0158** (2.74)	0.000849 (0.53)
Corp Tax Rate	0.00462*** (3.31)	-0.00548** (-3.25)	0.000799 (0.50)	0.00578 (1.86)	-0.00124 (-0.76)	-0.00508 (-1.83)	0.000121 (0.14)
Inflation Rate	-0.0116 (-1.12)	0.0538*** (4.26)	-0.0413*** (-3.48)	0.0947*** (3.84)	-0.0161 (-1.24)	-0.0716** (-3.28)	-0.00436 (-0.73)
GDP Growth Rate	0.00692* (2.52)	0.00510 (1.43)	-0.0143*** (-3.75)	0.0131 (1.70)	-0.00440 (-0.90)	-0.00973 (-1.42)	-0.0000727 (-0.05)
<i>N</i>	8811	8811	8811	1585	1585	1585	1585

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## **SAFE Questionnaire**



# **European Commission and European Central Bank Survey on the access to finance of enterprises, April to September 2014**

### **[INTRODUCTION TO THE ONLINE SURVEY]**

Welcome to the Survey on the access to finance of enterprises: a joint initiative of the European Commission and the European Central Bank.

Your business has been selected to participate in this Europe-wide survey, which aims to assess the financing needs and the availability of financing among companies like yours. We very much appreciate your participation.

Your answers to this voluntary survey will be treated in strict confidence, used for statistical purposes and published in aggregate form only.

Please click start to continue.

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### **[INTRODUCTION TO THE TELEPHONE SURVEY]**

Hello, my name is [interviewer] and I am calling from [survey company] on behalf of the European Commission and the European Central Bank. Your business has been selected to participate in a Europewide survey on the financing needs and the availability of financing among companies like yours.

European policy-makers want to have a better understanding of the issues and circumstances faced by small, medium-sized and large non-financial firms when it comes to accessing finance from banks and other institutions. This survey is now being conducted across Europe and your input is of the utmost importance: the responses to the survey will help shape policy decisions made by the European Commission and the European Central Bank.

[INTERVIEWER, READ OUT ONLY IF RESPONDENT IS FROM PANEL: *You may remember that we spoke to you about [INSERT CORRECT TIME PERIOD (e.g. 6 months, one year, one and a half years)] ago and you kindly said that you would be willing to participate again in the survey at around this time.*]

[INTERVIEWER, READ OUT ONLY IF RESPONDENTS ASK FOR MORE INFORMATION]

ABOUT THE PROJECT: *The results of the survey will help in the European Commission's evidencebased policy-making to improve the access to finance for businesses and in the monetary policy of the*

*European Central Bank. Can I e-mail you some more information about the survey?]*

Page 1 of 17

May I speak with the most appropriate person – the person best able to provide information on how your company is financed?

[INTERVIEWER: THIS PERSON COULD BE THE OWNER, A FINANCE MANAGER, THE FINANCE DIRECTOR OR THE CHIEF FINANCIAL OFFICER (CFO).]

Your answers to this voluntary survey will be treated in strict confidence, used for statistical purposes and published in aggregate form only.

## **Section 1: General characteristics of the firm (*Demographic part, common*)**

FOR PANEL MEMBERS: First a few demographic questions – you may have already answered these, but it would be good to confirm that the details are still correct.

[COMMON] <sup>63</sup>

**D2. How would you characterise your enterprise? Is it...**

[READ OUT – ONLY ONE ANSWER IS POSSIBLE]

a subsidiary of another enterprise [A SEPARATE, DISTINCT LEGAL ENTITY THAT IS PART OF A PROFIT-ORIENTED ENTERPRISE] .....	4
a branch of another enterprise [BRANCHES ARE CONTROLLED BY A PARENT COMPANY AND ARE NOT SEPARATE LEGAL ENTITIES] .....	5
an autonomous profit-oriented enterprise, making independent <b>financial</b> decisions [IN THE SENSE OF MAKING INDEPENDENT MANAGEMENT DECISIONS; THIS INCLUDES PARTNERSHIPS AND COOPERATIVES] .....	2
a non-profit enterprise [FOUNDATION, ASSOCIATION, SEMI-GOVERNMENT] .....	3
[DK/NA] .....	9

[IF 3 (NON-PROFIT) → STOP INTERVIEW → INTERVIEW NOT VALID]

[IF 4 (SUBSIDIARY) → MAKE THE FOLLOWING REQUEST]

**In your replies to all the following questions, please respond on behalf of the subsidiary.**

[IF 5 (BRANCH) → ASK THE FOLLOWING QUESTION]

**Are you knowledgeable about the finances of the whole enterprise, that is, the head office and all branches?**

[IF NO → STOP INTERVIEW → INTERVIEW NOT VALID]

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<sup>63</sup> The tags [COMMON], [ENTR] and [ECB] indicate whether the question is common to the ECB and the European Commission (DG-ENTR), or specific to the Commission or the ECB, respectively. [COMMON] and [ECB] questions are asked every 6 months, while [ENTR] questions are only asked every year. [ECB] questions are only asked in the euro area.

[FILTER: IF D2 FEATURES 4 OR 5] **[COMMON]**

**D2A. In which country is the parent company of your enterprise located?**

[DO NOT READ OUT – USE ISO COUNTRY CODES]

[LIST OF MAIN COUNTRY CODES]

Euro area countries

AT Austria BE Belgium CY Cyprus

EE Estonia

FI Finland FR France

DE Germany GR Greece IE Ireland

IT Italy LV Latvia

LU Luxembourg MT Malta

NL Netherlands

PT Portugal

SK Slovakia SI Slovenia

ES Spain

Other EU Member States

BG Bulgaria

HR Croatia

CZ Czech Republic

DK Denmark HU Hungary

LT Lithuania

PL Poland RO Romania SE Sweden

UK United Kingdom

Other countries

CN China

IS Iceland

JP Japan ME Montenegro

NO Norway

RU Russian Federation CH Switzerland

US United States

[FILTER: ALL ENTERPRISES]

[COMMON]

**D1. How many people does your enterprise currently employ either full or part time in [YOUR COUNTRY] at all its locations? [PLEASE DON'T INCLUDE UNPAID FAMILY WORKERS AND**

**FREELANCERS WORKING REGULARLY FOR YOUR ENTERPRISE.]**

[READ OUT – ONLY ONE ANSWER IS POSSIBLE]

NUMERICAL ANSWER [1-999999]

[DK/NA]

[IF 0 EMPLOYEES → STOP INTERVIEW → INTERVIEW NOT VALID]

[THE BUSINESS MUST HAVE AT LEAST ONE EMPLOYEE BEYOND THE FOUNDER(S);, IF

THE FOUNDER IS THE ONLY EMPLOYEE – WE STILL CONSIDER THAT TO BE A ZEROEMPLOYEE BUSINESS. FULL-TIME AND PART-TIME EMPLOYEES SHOULD EACH COUNT AS ONE EMPLOYEE. UNPAID FAMILY WORKERS AND EMPLOYEES WORKING LESS THAN 12 HOURS PER WEEK ARE TO BE EXCLUDED.]

**D1\_rec.** [IF NA/DK → ASK ABOUT APPROXIMATE NUMBER IN BRACKETS – ONLY ONE ANSWER IS POSSIBLE] → IF STILL NA/DK → STOP INTERVIEW → INTERVIEW NOT VALID]

From 1 employee to 9 employees ..... 1 - From 10 employees to 49 employees ..... 2 - From 50 employees to 249 employees ..... 3 - 250 employees or more ..... 4

[DK/NA] ..... 9

[COMMON]

**D3. What is the main activity of your enterprise?**

[READ OUT – ONLY ONE ANSWER IS POSSIBLE]

Construction .....	2
Manufacturing [also includes mining and electricity, gas and water supply] .....	12
Wholesale or retail trade .....	4 -
Transport .....	5
Agriculture [STOP INTERVIEW → INTERVIEW NOT VALID] .....	8 -
Public administration [STOP INTERVIEW → INTERVIEW NOT VALID] .....	9 -
Financial services [STOP INTERVIEW → INTERVIEW NOT VALID] .....	10
Other services to businesses or persons .....	13
[None of these] [OTHER, SPECIFY → IF RECODING IS NOT POSSIBLE, STOP INTERVIEW → INTERVIEW NOT VALID] .....	11
[DK/NA] [STOP INTERVIEW → INTERVIEW NOT VALID] .....	99

[COMMON]

**D6. Who owns the largest stake in your enterprise?**

[READ OUT – ONLY ONE ANSWER IS POSSIBLE]

Public shareholders, as your enterprise is listed on the stock market .....	1 -
Family or entrepreneurs [MORE THAN ONE OWNER] .....	2 - Other
enterprises or business associates .....	3 - Venture
capital enterprises or business angels [INDIVIDUAL INVESTORS	

PROVIDING CAPITAL OR KNOW-HOW TO YOUNG INNOVATIVE

ENTERPRISES] .....	4 -
Yourself or another natural person, one owner only .....	5
Other .....	7
[DK/NA] .....	9

[COMMON]

**D4. What was the annual turnover of your enterprise in 2013?**

[READ OUT – ONLY ONE ANSWER IS POSSIBLE]

[For non-euro area countries, the amounts in euro will be converted to national currency.]

Up to €500,000 .....	5 - More than
€500,000 and up to €1 million .....	6 - More than €1 million and up
to €2 million .....	7 - More than €2 million and up to €10 million
..... 2 - More than €10 million and up to €50 million	..... 3 - More than €50 million
..... 4	

[DK/NA] ..... 9

[COMMON]

**D7. What percentage of your company's total turnover in 2013 is accounted for by exports of goods and services? [EXPORTS COMPRISE SALES OF GOODS OR THE PROVISION OF SERVICES TO NON-RESIDENTS, INCLUDING TO FOREIGN TOURISTS VISITING THE RELEVANT COUNTRY.]**

NUMERICAL ANSWER IN PERCENTAGES [0-100] [DK/NA]

**D7\_rec.** [IF (NA/DK) → ASK WHETHER ONE OF THE FOLLOWING CATEGORIES WOULD

APPLY – ONLY ONE ANSWER IS POSSIBLE]

0% – my enterprise did not export any goods and services last year .....	1
Less than 25% .....	2 - Between 25% and
50% .....	3 - Over 50%
..... 4	

- [DK] ..... 9

[COMMON]

**D5. In which year was your enterprise first registered?** [IN CASE OF A PAST ACQUISITION, PLEASE REFER TO THE YEAR WHEN THE ACQUIRING ENTERPRISE WAS REGISTERED OR, IN CASE OF A MERGER, TO THE LARGEST ENTERPRISE INVOLVED (IN TERMS OF EMPLOYEES)].

NUMERICAL ANSWER [1700-2014] (four digits, less or equal than [YEAR OF SURVEY])  
[DK/NA]

[The age of the enterprise is calculated as 2014 minus the year of registration.]

**D5\_rec.** [IF NA/DK → ASK WHETHER ONE OF THE FOLLOWING CATEGORIES WOULD

APPLY – ONLY ONE ANSWER IS POSSIBLE]

- 10 years or more .....	1 - 5 years or more
but less than 10 years .....	2 - 2 years or more but less than 5
years .....	3 - Less than 2 years
.....	4 - [DK/NA]
.....	9

## **Section 2: General information on the type and situation of the enterprise**

We will now turn to your enterprise's current situation. When asked about the changes experienced by your enterprise over the past 6 months, please report just the changes over this period.

[FILTER: ALL ENTERPRISES]

[COMMON]

**Q0b. On a scale of 1-10, where 10 means it is extremely pressing and 1 means it is not at all pressing, how pressing are each of the following problems that your enterprise is facing?**

[READ OUT. ONE ANSWER PER LINE. DK/NA (CODE 99) OPTION PERMITTED]

Finding customers .....

Competition .....

Access to finance [FINANCING OF YOUR BUSINESS – BANK LOANS, TRADE CREDIT, EQUITY, DEBT SECURITIES, OTHER EXTERNAL FINANCING] .....

Costs of production or labour .....

Availability of skilled staff or experienced managers .....

Regulation [EUROPEAN AND NATIONAL LAWS, INDUSTRIAL REGULATIONS, ETC.] ..... 7.

Other .....

[ENTR]

**Q1. During the past 12 months have you introduced...?**

[READ OUT– ONE ANSWER PER LINE]

Yes ..... 1  
No..... 2  
[DK/NA] ..... 9

... a new or significantly improved product or service to the market .....	1	2	9
... a new or significantly improved production process or method .....	1	2	9
... a new organisation of management .....	1	2	9
... a new way of selling your goods or services .....	1	2	9

### [COMMON]

**Q2. Have the following company indicators decreased, remained unchanged or increased over the past 6 months?**

[READ OUT – ONLY ONE ANSWER PER LINE]

Increased .....	1	-	Remained unchanged
.....	2	-	Decreased
.....	3		

[NOT APPLICABLE, FIRM HAS NO DEBT] ..... 7

[DK/NA] ..... 9

Turnover ..... 1 2 3 9

Labour cost (including social contributions) ..... 1 2 3 9

Other cost (materials, energy, other) ..... 1 2 3 9

Interest expenses [WHAT YOUR COMPANY PAYS IN INTEREST FOR ITS

DEBT] ..... 1 2 3 9 e)

Profit [NET INCOME AFTER TAXES] ..... 1 2 3 9

g) Fixed investment [INVESTMENT IN PROPERTY, PLANT, MACHINERY OR EQUIPMENT] ..... 1 2 3 9 h)

Inventories and working capital ..... 1 2 3 9

Number of employees ..... 1 2 3 9

[AS REGARDS ITEM (j), IF THE COMPANY HAS NO DEBT, CODE 7 (NOT APPLICABLE) SHOULD BE USED.]

Debt compared to assets..... 1 2 3 7 9

### Section 3: Financing of the enterprise

We will now turn to the financing of your enterprise.

[COMMON]

**Q4. Are the following sources of financing relevant to your firm, that is, have you used them in the past or considered using them in the future? Please provide a separate answer in each case.**

[READ OUT – ONE ANSWER PER LINE IS POSSIBLE (CODE 3, 7 OR 9)]

Yes, this source is relevant to my enterprise ..... 3 - No, this source is not relevant to my enterprise..... 7

[DK] ..... 9

[FOR EACH FINANCING SOURCE, IF THE ANSWER IS “YES” (CODE 3), ASK THE RELEVANT FOLLOW-UP QUESTION – ONE ANSWER PER LINE IS POSSIBLE (CODE 1, 2 OR 99)]

Yes ..... 1 - No  
..... 2

[DK] ..... 99

c) Credit line, bank overdraft or credit cards overdraft [CREDIT LINE = PRE-ARRANGED LOAN THAT CAN BE USED, IN FULL OR IN PART, AT DISCRETION AND WITH LIMITED ADVANCE WARNING; BANK OVERDRAFT = NEGATIVE BALANCE ON A BANK ACCOUNT WITH OR WITHOUT SPECIFIC PENALTIES; CREDIT CARD OVERDRAFT =

NEGATIVE BALANCE ON THE CREDIT CARD] ..... 3 7 9

IF “YES” (CODE 3) → Have you drawn on such types of credit  
in the past 6 months? ..... 1 2 99

b) Grants or subsidised bank loan [INVOLVING SUPPORT FROM PUBLIC SOURCES IN THE FORM OF GUARANTEES, REDUCED INTEREST RATE

LOANS ETC.] ..... 3 7 9

IF “YES” (CODE 3) → Have you obtained new financing of this type in the  
past 6 months? ..... 1 2 99

Bank loan (excluding subsidised bank loans, overdrafts and credit lines) ..... 3 7 9

[FOLLOW-UP QUESTION SHOULD NOT BE ASKED – SEE  
QUESTION Q7A.d) AND Q7B.d)]

Trade credit [PURCHASE OF GOODS OR SERVICES FROM ANOTHER  
BUSINESS WITHOUT MAKING IMMEDIATE CASH PAYMENT] ..... 3 7 9

[FOLLOW-UP QUESTION SHOULD NOT BE ASKED – SEE QUESTION Q7A.b) AND  
Q7B.b)]

Other loan (for instance from a related enterprise or shareholders, excluding trade  
credit; from family and friends) ..... 3 7 9

IF “YES” (CODE 3) → Have you taken out or renewed such a loan in the  
past 6 months? ..... 1 2 99

m) Leasing or hire-purchase [OBTAINING THE USE OF A FIXED ASSET (FOR  
EXAMPLE, CARS OR MACHINERY) IN EXCHANGE FOR REGULAR PAYMENTS,  
BUT WITHOUT THE IMMEDIATE OWNERSHIP OF THE  
ASSET] ..... 3 7 9

IF “YES” (CODE 3) → Have you used this type of financing in the past 6  
months? ..... 1 2 99

h) Debt securities [SHORT-TERM COMMERCIAL PAPER OR LONGER-TERM  
CORPORATE BONDS] ..... 3 7 9

IF “YES” (CODE 3) → Have you issued any debt securities in the past 6  
months? ..... 1 2 99

j) Equity capital [QUOTED OR UNQUOTED SHARES, PREFERRED SHARES OR OTHER FORMS OF EQUITY PROVIDED BY THE OWNERS THEMSELVES OR BY EXTERNAL INVESTORS, INCLUDING VENTURE

CAPITAL OR BUSINESS ANGELS] ..... 379

IF “YES” (CODE 3) → Have you issued equity in the past 6 months? ..... 1299

r) Factoring [SELLING YOUR INVOICES TO A FACTORING COMPANY; THIS COMPANY GETS YOUR DEBT AND HAS TO COLLECT IT; IT WILL MAKE A PROFIT BY PAYING YOU LESS CASH THAN THE FACE VALUE OF THE

INVOICE] ..... 379

IF “YES” (CODE 3) → Have you used factoring in the past 6 months? ..... 1299

a) Retained earnings or sale of assets [INTERNAL FUNDS LIKE CASH OR CASH EQUIVALENT RESULTING FOR INSTANCE FROM SAVINGS, RETAINED

EARNINGS, SALE OF ASSETS] ..... 379

IF “YES” (CODE 3) → Have you retained earnings or sold assets in the past

6 months? ..... 1299

p) Other sources of financing [FOR EXAMPLE, SUBORDINATED DEBT INSTRUMENTS, PARTICIPATING LOANS, PEER-TO-PEER LENDING,

CROWDFUNDING] ..... 379

IF “YES” (CODE 3) → Have you obtained such sources of financing in the

past 6 months? ..... 1299

[FILTER: IF ITEM Q4.d) (BANK LOANS) IS “NOT RELEVANT” (CODE 7)]

[COMMON]

**Q32. You mentioned that bank loans are not relevant for your enterprise. What is the most important reason for this?**

[READ OUT – ONE ANSWER PER LINE]

Insufficient collateral or guarantee .....	1 - Interest rates or price too high .....	2 - Reduced control over the enterprise .....	3 - Too much paperwork is involved .....	4 - I do not need this type of financing .....	8	-	Other .....
					5		

[DK] ..... 9

[FILTER: FOR EACH Q4 ITEMS THAT IS “RELEVANT” (CODE 1, 2, 3, 99), NAMELY Q4.c), Q4.d), Q4.b), Q4.e), Q4.h) AND Q4.j), FILL THE RELEVANT ITEM IN Q5]

[COMMON]

**Q5. For each of the following types of external financing, please indicate if your needs increased, remained unchanged or decreased over the past 6 months? [READ OUT – ONE ANSWER PER LINE IS POSSIBLE]**

Increased .....	1 - Remained unchanged .....	2	-	Decreased .....
		3		

[INSTRUMENT NOT APPLICABLE TO MY FIRM] ..... 7

[DK] ..... 9

[FILTER: IF Q4.c) FEATURES CODE 1, 2 OR 99]

f) Credit line, bank overdraft or credit cards overdraft ..... 1 2 3 7 9

[FILTER: IF Q4.d) FEATURES CODE 3 OR Q4.b) FEATURES CODE 1, 2 OR 99]

Bank loans (excluding overdraft and credit lines) ..... 1 2 3 7 9

[FILTER: IF Q4.e) FEATURES CODE 3]

Trade credit ..... 1 2 3 7 9

[FILTER: IF Q4.j) FEATURES CODE 1, 2 OR 99]

Equity [INCLUDING PREFERRED SHARES, VENTURE CAPITAL OR

BUSINESS ANGELS]..... 1 2 3 7 9

[FILTER: IF Q4.h) FEATURES CODE 1, 2 OR 99]

Debt securities issued [SHORT-TERM COMMERCIAL PAPER OR LONGER-TERM CORPORATE BONDS] ..... 1 2 3 7 9

[FILTER: IF AT LEAST ONE OF THE Q4 ITEMS Q4.f), Q4.m), Q4.r) OR Q4.p) IS “RELEVANT” (CODE 1, 2, 99)]

Other [FOR EXAMPLE, LOANS FROM A RELATED COMPANY, SHAREHOLDERS OR FAMILY AND FRIENDS, LEASING, FACTORING, GRANTS, SUBORDINATED DEBT INSTRUMENTS, PARTICIPATING

LOANS, PEER-TO-PEER LENDING, CROWDFUNDING] ..... 1 2 3 7 9

[FILTER: FOR EACH Q4 ITEM THAT IS “RELEVANT” (CODE 1, 2, 3, 99), NAMELY Q4.c), Q4.d), Q4.b) AND Q4.e), FILL THE RELEVANT ITEM IN Q7A]

[COMMON]

**Q7A. Have you applied for the following types of financing in the past 6 months? Please provide a separate answer in each case.**

[READ OUT ITEMS AND SCALE – ONE ANSWER PER LINE IS POSSIBLE]

Applied ..... 1 - Did not apply because of possible rejection ..... 2 - Did not apply because of sufficient internal funds ..... 3 - Did not apply for other reasons ..... 4

[DK/NA] ..... 9

[FILTER: IF Q4.c) FEATURES CODE 1, 2 OR 99]

d) Credit line, bank overdraft or credit cards overdraft ..... 1 2 3 4 9

[FILTER: IF Q4.d) OR Q4.b) FEATURE CODE 1, 2, 3 OR 99]

Bank loan (excluding overdraft and credit lines) ..... 1 2 3 4 9

[FILTER: IF Q4.e) FEATURES CODE 3]

Trade credit ..... 1 2 3 4 9  
[FILTER: IF AT LEAST ONE OF THE Q4 ITEMS Q4.f), Q4.h), Q4.j), Q4.m), Q4.r) OR Q4.p) IS “RELEVANT” (CODE 1, 2, 99)]

Other external financing [FOR EXAMPLE, LOANS FROM A RELATED COMPANY, SHAREHOLDERS OR FAMILY AND FRIENDS, LEASING, FACTORING, GRANTS, SUBORDINATED DEBT INSTRUMENTS, PARTICIPATING LOANS, PEER-TO-PEER LENDING, CROWDFUNDING,

AND ISSUANCE OF EQUITY AND DEBT SECURITIES] ..... 1 2 3 4 9

[FILTER: FOR EACH Q7A ITEM THAT IS “APPLIED” (CODE 1), FILL THE RELEVANT ITEM IN Q7B]

[COMMON]

**Q7B. If you applied and tried to negotiate for this type of financing over the past 6 months, did you: receive all the financing you requested; receive only part of the financing you requested; refuse to proceed because of unacceptable costs or terms and conditions; or have you not received anything at all?**

[READ OUT – ONLY ONE ANSWER PER LINE IS POSSIBLE]

Received everything ..... 1

Received most of it [BETWEEN 75% AND 99%] ..... 5 - Only received a limited part of it [BETWEEN 1% AND 74%] ..... 6

Refused because the cost was too high ..... 3 - Was rejected ..... 4 - Application is still pending ..... 8

[DK] ..... 9

[FILTER: IF Q7A.d) FEATURES CODE 1]

d) Credit line, bank overdraft or credit cards overdraft ..... 1 3 4 5 6 8 9

[FILTER: IF Q7A.a) FEATURES CODE 1]

Bank loan (excluding overdraft and credit lines) ..... 1 3 4 5 6 8 9

[FILTER: IF Q7A.b) FEATURES CODE 1]

Trade credit ..... 1 3 4 5 6 8 9

[FILTER: IF Q7A.c) FEATURES CODE 1]

Other external financing [FOR EXAMPLE, LOANS FROM A RELATED COMPANY, SHAREHOLDERS OR FAMILY AND FRIENDS, LEASING, FACTORING, GRANTS, SUBORDINATED DEBT INSTRUMENTS, PARTICIPATING LOANS, PEER-TO-PEER LENDING, CROWDFUNDING,  
AND ISSUANCE OF EQUITY AND DEBT SECURITIES] .....1 3 4 5 6 8 9

[FILTER: IF Q7B.a) FEATURES CODE 1, 3, 4, 5, 6 OR 8]

[COMMON]

**Q8A. What is the size of the last bank loan that your enterprise...**

[IF Q7B. a) FEATURES CODE 1, 5 or 6]

**...obtained or renegotiated in the past 6 months?**

[IF Q7B. a) FEATURES CODE 3, 4 or 8] ...attempted to obtain in the past 6 months?

[READ OUT– ONLY ONE ANSWER IS POSSIBLE]

[For non-euro area countries, the amounts in euro will be converted to national currency.]

Up to €25,000 .....	1 - More than €25,000 and up to €100,000 .....	2 - More than €100,000 and up to €250,000 .....	5 - More than €250,000 and up to €1 million .....	6
Over €1 million .....	4			
[DK/NA] .....	9			

[FILTER: IF Q7B.d) FEATURES CODE 1, 3, 5 OR 6]

[COMMON]

**Q8B. What interest rate was charged for the credit line or bank overdraft for which you applied?**

NUMERICAL ANSWER IN PERCENTAGES [0-100]

[DK/NA]

[FILTER: ALL ENTERPRISES]

[COMMON]

**Q6A. For what purpose was external financing used by your enterprise during the past 6 months?**

[READ OUT – SEVERAL ANSWERS POSSIBLE. DK/NA (CODE 99) OPTION PERMITTED]

Fixed investment [INVESTMENT IN PROPERTY, PLANT, MACHINERY OR EQUIPMENT]

Inventory and working capital

Hiring and training of employees

Developing and launching new products or services

Refinancing or paying off obligations

Other

[FILTER: ALL ENTERPRISES]

#### **Section 4: Availability of finance and market conditions**

In this part of the survey, we would like to ask about your firm's experience in accessing finance.

Your views on market conditions will be helpful in shaping the policies of the European Central Bank and the European Commission.

[COMMON]

**Q11. The availability of external financing may depend on a number of factors, some of which are specific to your enterprise and others which are of more general relevance. For each of the following factors, would you say that they have improved, remained unchanged or deteriorated over the past 6 months?**

[READ OUT – ONE ANSWER PER LINE]

Improved .....	1 - Remained unchanged
.....	2 - Deteriorated
..... 3	

[NOT APPLICABLE TO MY ENTERPRISE - ONLY]

FOR b), f), g), h)] .....	7
[DK] .....	9
<b>a) General economic outlook [INSOFAR AS IT AFFECTS THE AVAILABILITY OF EXTERNAL FINANCING]</b>	
OF EXTERNAL FINANCING] .....	1 2 3 9 b)
Access to public financial support including guarantees .....	1 2 3 7 9
<b>c) Your firm-specific outlook with respect to your sales and profitability or business plan [INSOFAR AS IT AFFECTS THE AVAILABILITY OF EXTERNAL FINANCING FOR YOU]</b>	
FINANCING FOR YOU] .....	1 2 3 9 d)
Your enterprise's own capital .....	1 2 3 9
Your enterprise's credit history .....	1 2 3 9

[FILTER: IF THE ITEM Q4.c) (CREDIT LINE, BANK OVERDRAFT, CREDIT CARD OVERDRAFT), Q4.d) (BANK LOAN) OR Q4.b) (SUBSIDISED BANK LOAN) IS “RELEVANT” (CODE 1, 2, 3, 99)]

[CODE 7 IS NOT TO BE USED FOR ENTERPRISES HAVING “APPLIED” (CODE 1) IN Q7A.d), OR Q7A.a)]

Willingness of banks to provide credit to your enterprise [LENDER’S ATTITUDE] .....

1 2 3 7 9

[FILTER: IF THE ITEM Q4.e) (TRADE CREDIT) IS “RELEVANT” (CODE 3)]

[CODE 7 IS NOT TO BE USED FOR ENTERPRISES HAVING “APPLIED” (CODE 1) IN Q7A.b)]

Willingness of business partners to provide trade credit [BUSINESS PARTNERS’ ATTITUDE] .....

1 2 3 7 9

[FILTER: IF ONE OF THE Q4 ITEMS Q4.f) (OTHER LOAN), Q4.h) (DEBT SECURITIES), Q4.j)

(EQUITY CAPITAL) OR Q4.p) (OTHER SOURCES OF FINANCING) IS “RELEVANT” (CODE 1, 2, 99)]

Willingness of investors to invest in your enterprise [INVESTORS’ ATTITUDES

TOWARDS, FOR EXAMPLE, INVESTING IN EQUITY OR  
DEBT  
SECURITIES ISSUED BY YOUR ENTERPRISE] ..... 1 2 3 7 9

[FILTER: FOR EACH OF THE Q4 ITEMS THAT ARE “RELEVANT” (CODE 1, 2, 3, 99),  
NAMELY Q4.c), Q4.d), Q4.b), Q4.e), Q4.h) AND Q4.j), FILL THE RELEVANT ITEM IN  
Q9]

[COMMON]

**Q9. For each of the following types of financing, would you say that their availability has improved, remained unchanged or deteriorated for your enterprise over the past 6 months? [READ OUT – ONE ANSWER PER LINE]**

Improved .....	1 - Remained unchanged
..... 2	- Deteriorated
..... 3	

[NOT APPLICABLE TO MY FIRM] ..... 7

[DK] ..... 9

[FILTER: IF Q4.c) FEATURES CODE 1, 2 OR 99]

[CODE 7 IS NOT TO BE USED FOR ENTERPRISES HAVING “APPLIED” (CODE 1) IN  
Q7A.d)]

f) Credit line, bank overdraft or credit cards overdraft ..... 1 2 3 7 9

[FILTER: IF Q4.d) FEATURES CODE 3 OR Q4.b) FEATURES CODE 1, 2 OR 99]

[CODE 7 IS NOT TO BE USED FOR ENTERPRISES HAVING “APPLIED” (CODE 1) IN  
Q7A.a)]

a) Bank loans (excluding overdraft and credit lines) ..... 1 2 3 7 9

[FILTER: IF Q4.e) FEATURES CODE 3]

[CODE 7 IS NOT TO BE USED FOR ENTERPRISES HAVING “APPLIED” (CODE 1) IN  
Q7A.b)]

b) Trade credit ..... 1 2 3 7 9

[FILTER: IF Q4.j) FEATURES CODE 1, 2 OR 99]

c) Equity [INCLUDING PREFERRED SHARES, VENTURE CAPITAL OR  
BUSINESS ANGELS]..... 1 2 3 7 9

[FILTER: IF Q4.h) FEATURES CODE 1, 2 OR 99]

d) Debt securities issued [SHORT-TERM COMMERCIAL PAPER OR LONGER-  
TERM CORPORATE BONDS] ..... 1 2 3 7 9

[FILTER: IF AT LEAST ONE OF THE Q4 ITEMS Q4f.), Q4.m), Q4.r) OR Q4.p) IS  
“RELEVANT” (CODE 1, 2, 99)]

e) Other [FOR EXAMPLE, LOANS FROM A RELATED COMPANY, SHAREHOLDERS  
OR FAMILY AND FRIENDS, LEASING, FACTORING, GRANTS, SUBORDINATED  
DEBT INSTRUMENTS, PARTICIPATING  
LOANS, PEER-TO-PEER LENDING, CROWDFUNDING] ..... 1 2 3 9

[FILTER: Q7A.A) OR Q7A.D) IS “APPLIED” (CODE 1) (BANK LOANS, AND CREDIT  
LINES, BANK OVERDRAFT AND CREDIT CARD OVERDRAFTS)]

[COMMON]

**Q10. Turning to the terms and conditions of bank financing (including bank loans,  
overdraft and credit lines), could you please indicate whether the following items  
increased, remained unchanged or decreased in the past 6 months?**

[READ OUT – ONE ANSWER PER LINE]

Was increased by the bank ..... 1 - Remained unchanged  
..... 2 - Was decreased by the bank  
..... 3

[DK/NA] ..... 9

*Price terms and conditions:*

Level of interest rates ..... 1 2 3 9

Level of the cost of financing other than interest rates [CHARGES, FEES, COMMISSIONS] ..... 1 2 3 9

*Non-price terms and conditions:*

Available size of loan or credit line ..... 1 2 3 9

Available maturity of the loan ..... 1 2 3 9

Collateral requirements [THE SECURITY GIVEN BY THE BORROWER TO THE LENDER AS A PLEDGE FOR THE REPAYMENT OF THE LOAN] ..... 1 2 3 9

Other, for example, loan covenants [AN AGREEMENT OR STIPULATION LAID DOWN IN LOAN CONTRACTS UNDER WHICH THE BORROWER PLEDGES EITHER TO TAKE CERTAIN ACTION OR TO REFRAIN FROM

TAKING CERTAIN ACTION], required guarantees, information requirements, procedures, time required for loan approval ..... 1 2 3 9

[FILTER: FOR EACH Q4 ITEM THAT IS “RELEVANT” (CODE 1, 2, 3, 99), NAMELY Q4.c), Q4.d), Q4.e), Q4.h), Q4.j) and Q4.a), FILL THE RELEVANT ITEM IN Q23]

[COMMON]

**Q23. Looking ahead, for each of the following types of financing available to your firm, could you please indicate whether you think their availability will improve, deteriorate or remain unchanged over the next 6 months?**

[READ OUT – ONE ANSWER PER LINE]

Will improve..... 1 - Will remain unchanged  
..... 2 - Will deteriorate  
..... 3

[INSTRUMENT NOT APPLICABLE TO MY FIRM] ..... 7

[DK] ..... 9

[FILTER: IF Q4.c) FEATURES CODE 1, 2 OR 99]

[CODE 7 IS NOT TO BE USED FOR ENTERPRISES HAVING “APPLIED” (CODE 1) IN Q7A.d)]

g) Credit line, bank overdraft or credit cards overdraft ..... 1 2 3 7 9

[FILTER: IF Q4.d) OR Q4.b) FEATURES CODE 1, 2, 3 OR 99]

[CODE 7 IS NOT TO BE USED FOR ENTERPRISES HAVING “APPLIED” (CODE 1) IN Q7A.a)]

b) Bank loans (excluding overdraft and credit lines) ..... 1 2 3 7 9

[FILTER: IF Q4.e) FEATURES CODE 3]

[CODE 7 IS NOT TO BE USED FOR ENTERPRISES HAVING “APPLIED” (CODE 1) IN Q7A.b)]

d) Trade credit ..... 1 2 3 7 9

[FILTER: IF Q4.j) FEATURES CODE 1, 2 OR 99]

c) Equity [INCLUDING PREFERRED SHARES, VENTURE CAPITAL OR BUSINESS ANGELS]..... 1 2 3 7 9

[FILTER: IF Q4.h) FEATURES CODE 1, 2 OR 99]

e) Debt securities issued [SHORT-TERM COMMERCIAL PAPER OR LONGER-TERM CORPORATE BONDS] ..... 1 2 3 7 9

[FILTER: IF Q4.a) FEATURES CODE 1, 2 OR 99]

a) Retained earnings or sale of assets [INTERNAL FUNDS] ..... 1 2 3 7 9

[FILTER: IF AT LEAST ONE OF THE Q4 ITEMS Q4.f), Q4.m), Q4.r) OR Q4.p) IS “RELEVANT” (CODE 1, 2, 99)]

f) Other [FOR EXAMPLE, LOANS FROM A RELATED COMPANY, SHAREHOLDERS OR FAMILY AND FRIENDS, LEASING, FACTORING, GRANTS, SUBORDINATED DEBT INSTRUMENTS, PARTICIPATING

LOANS, PEER-TO-PEER LENDING, CROWDFUNDING] ..... 1 2 3 7 9

## **Section 5: Future, growth and obstacles to growth**

**Finally, we would like to ask you a few questions about the longer-term prospects for your enterprise.**

[FILTER: ALL ENTERPRISES]

[ENTR]

**Q16. Over the past three years (2011-2013), how much did your enterprise grow on average per year ...?**

[READ OUT– ONE ANSWER PER LINE]

Over 20% per year .....	1 -	Less than 20% per year growth
..... 2 - No		
..... 3 - Got		
..... 4		

[NOT APPLICABLE, THE ENTERPRISE IS TOO

RECENT] ..... 7

[DK/NA] ..... 9

...in terms of employment regarding the number of full-time or full-time equivalent employees ? ..... 1 2 3 4 7 9

...and in terms of turnover? ..... 1 2 3 4 7 9

[ENTR]

**Q17. Considering the turnover over the next two to three years (2014-2016), how much does your enterprise expect to grow per year?**

[READ OUT– ONLY ONE ANSWER IS POSSIBLE]

Grow substantially – over 20% per year in terms of turnover .... 1 - Grow moderately – below 20% per year in terms of turnover ... 2

Stay the same size.....	3 -	Become smaller
..... 4		

[DK/NA] ..... 9

[ENTR]

**Q19. Do you feel confident talking about financing with banks and that you will obtain the desired results? And how about with equity investors/venture capital enterprises?**

[READ OUT– ONE ANSWER PER LINE]

- Yes .....	1	-	No
.....	2	-	[NOT APPLICABLE]
.....	7	-	[DK]

...with banks ..... 1 2 7 9

...with equity investors/venture capital enterprises ..... 1 2 7 9

[FILTER: IF Q17 FEATURES CODE 1 OR 2 (ENTERPRISE EXPECTS TO GROW)]  
[ENTR]

**Q20. If you need external financing to realise your growth ambitions, what type of external financing would you prefer most?**

[READ OUT–ONLY ONE ANSWER IS POSSIBLE]

Bank loan .....	1
Loan from other sources (FOR EXAMPLE, TRADE CREDIT, RELATED ENTERPRISE, SHAREHOLDERS, PUBLIC SOURCES) .....	2
Equity investment [INCLUDING PREFERRED SHARES, VENTURE CAPITAL OR BUSINESS ANGELS] .....	3 -
Other .....	5 -
[DK/NA] .....	9

[ENTR]

**Q21. If you need external financing to realise your growth ambitions, what amount of financing would you aim to obtain?**

[READ OUT–ONLY ONE ANSWER IS POSSIBLE]

[For non-euro area countries, the amounts in euro will be converted to national currency.]

Up to €25,000 .....	1 - More than €25,000 and up to €100,000 .....	2 - More than €100,000 and up to €250,000 .....	5 - More than €250,000 and up to €1 million .....	6
Over €1 million .....	4			
[DK/NA] .....	9			

[FILTER: IF Q20 FEATURES A BANK LOAN, A LOAN FROM OTHER SOURCES OR EQUITY INVESTMENT RESPECTIVELY (CODE 1, 2 OR 3)]

[ENTR]

**Q22. What do you see as the most important limiting factor to get this financing?**

[READ OUT – ONLY ONE ANSWER IS POSSIBLE]

There are no obstacles .....

8

Insufficient collateral or guarantee [NOT TO BE USED IF Q20 FEATURES EQUITY INVESTMENT (CODE 3)] .....

Interest rates or price too high .....	2 - Reduced control over the enterprise .....
.....	3 - Too much paperwork is involved .....
.....	6 - Financing not available at all .....
	4 - Other .....
	5 - [DK/NA] .....
	9

[FILTER: ALL ENTERPRISES]

[ENTR]

**Q24. On a scale of 1-10, where 10 means it is extremely important and 1 means it is not at all important, how important are each of the following factors for your enterprise's financing in the future?**

[READ OUT – ONE ANSWER PER LINE. DK/NA OPTION PERMITTED]

Guarantees for loans

Measures to facilitate equity investments (FOR EXAMPLE, SUPPORT FOR VENTURE CAPITAL OR BUSINESS ANGEL FINANCING)

Export credits or guarantees

Tax incentives

Business support services (FOR EXAMPLE, ADVISORY SERVICES, TRAINING, BUSINESS NETWORKS, CREDIT MEDIATION, MATCH-MAKING SERVICES ETC.)

Making existing public measures easier to obtain (FOR EXAMPLE, THROUGH THE REDUCTION OF ADMINISTRATIVE BURDENS)