Financing and Credit Rationing in Family-owned SMEs: a Comparative Analysis.

Dr. Sheila O Donohoe and Denis Walsh*, Waterford Institute of Technology, Ireland.

Abstract

Family-owned firms account for the majority of European SMEs and are the backbone of the European economy. They are particularly prevalent in the so-called PIIGS (Portugal, Ireland, Italy, Greece, and Spain). We examine the sources of finance used by family-owned SMEs in these five countries which were most adversely affected by the more recent economic and sovereign debt crisis. Using the ECB/EC SAFE survey and probit maximum likelihood method we compare both financing differences in these distressed countries to seven other non-distressed EU states covering 2014 to 2017, and differences between family-owned SMEs and solely-owned SMEs. In addition, we test for the presence of any form of bank credit rationing in family-owned SMEs across these distressed states.

Our results suggest that PIIGS firms are more likely to use grants/subsidies, bank loans, and trade credit and are less likely to avail of other loans, equity capital, and Leasing/HP. Even controlling for these geographical differences and other firm-level factors family-owned SMEs are more likely to use retained earnings, bank credit lines, bank loans, trade credit, and other loans than their solely-owned counterparts.

Furthermore, our findings show that SMEs in the PIIGS make more applications for bank loans and bank credit lines and are no more likely to experience any form of credit rationing or borrower discouragement. Our evidence suggests family firms irrespective of their growth or financial performance prefer more traditional sources and those which will not dilute their ownership.

The results are robust, controlling for several competing firm level explanatory variables. The traditional financing preferences of family-owned SMEs is likely to present challenges to the stated objectives of the European Capital Markets Union to open up financing avenues for firms, notably SMEs, which are currently inaccessible.

Keywords: Family Firm, Family Business, Finance, SME Finance, Distressed Economies
*Corresponding author: Denis.walsh@postgrad.wit.ie

1 Introduction

Small and medium family-owned enterprises are the most numerous types of organisation (Gnan, et al., 2015) and particularly so in Western Europe (Faccio & Lang, 2002; Burgstaller & Wagner, 2015). Studies show that family-owned firms often have different goals, control orientations, risk aversion, along with a long-term successional commitment when compared to other SMEs (Sharma, et al., 1997). Thus, understanding their financing decisions is of significance to family firms and policy makers given their unique characteristics and contribution to economic wellbeing. Yet, despite their importance the financing of family firms remains relatively under researched (Koropp et al.,2013; Ramalho, et al., 2014) and most of the work to-date has a single country focus. The significance of a country's institutional setting on the capital structure (González et al., 2013) of family-owned SMEs is heightened by their pronounced reliance on bank debt. This paper examines the funding of family-owned SMEs in European distressed countries (five) and sheds light on the sourced used by them. The sources include internal equity, bank debt, grants, trade credit, leasing/HP, debt securities, external equity and alternative sources. Moreover, the paper tests for any form of bank credit rationing for family-owned SME firms in the same five countries in contrast to other ownership types.

Twelve European countries, regarded as a representative sample of the Euro area (ECB, 2017), are analysed including the geographic and economic sub-division known as the so-called PIIGS nations. PIIGS is an acronym used, mainly in media and political fields refers to Portugal, Ireland, Italy, Greece and Spain (Brazys & Hardiman, 2015). These countries experienced severe economic and financial trauma during the economic/financial crisis (2007/2009) and the sovereign debt crisis which unfolded in 2010. The distress in the other seven countries (Austria, Belgium, Finland, France, Germany, Netherlands and Slovakia) was at a lower level (Ferrando, et al., 2017). Most of the SMEs in the PIIGS group (distressed economies) are shown to be family-owned as compared with the non-PIIGS countries (non-distressed). Given the heightened importance of family-owned SMEs to the distressed countries, the study also examines differences in finance usage between the two groups.

This study employs the ECB and EC Survey on the Access to Finance of Enterprises (SAFE). The final sample has twelve countries in the period 2014-2017 and 59,000 firm responses. A probit maximum-likelihood methodology is adopted to test for the usage of financing sources

ranging from traditional bank debt to the newer alternative sources of finance and to test for the likelihood of any form of bank credit rationing in this cohort. The methodology includes controls for a suite of explantory variables including firm size, age, sector, and whether located in a distressed economy.

Findings suggest that family-owned SMEs in the PIIGS when compared to solely-owned firms are likely to use more bank debt, retained earnings, trade credit and other loans. These firms favour the use of non-control-diluting credit and display a negative relationship with equity capital and the newer alternative sources of finance. Family firms are more likely to apply for bank finance, are less likely to be borrower discouraged and are no more likely to experience any form of bank credit rationing.

This paper makes a number of contributions to the literature. It is the first to empirically evaluate the sources of finance employed and for any evidence of bank credit rationing by European family-owned SME firms in contrast to non-family sole-owner SMEs in the PIIGS. Secondly, the paper adds to understanding family firm finance preferences which inform capital structure decision-making and verification of the theories utilised. This work builds directly on the study of Crespí and Martín-Oliver (2015). Methodologically, the work builds on recent SME research using the SAFE dataset including, (Casey & O'Toole 2014; Moritz, et al. 2016; Ferrando, et al., 2017; Andrieu, et al., 2018). The study contributes to the practitioner community and policy makers given the importance of family-owned SMEs to Europe given the dearth of multi country analysis. Finally, academics, practitioners and industry interests may find further contributions in the usage of alternative finance in the family-firm arena and across distressed economies of value as the economic/financial crisis impact recedes.

The rest of the paper is organized as follows. Section 2 presents the theoretical background of family-owned SMEs together with the proposed hypotheses. Section 3 describes the data and methodological approach together with the variables employed. The results are presented in section 4 while the final section concludes the paper.

2 Theoretical background and proposed hypotheses

The hallmarks of family firms are, at their most simple, the interaction of two systems; a family, and a business - often illustrated in a typical two-circle Venn-diagram. This Venn-

diagram was expanded to the 'three-circle model' incorporating family, business and firm ownership (Tagiuri & Davis,1982; Davis & Tagiuri, 1989). The intent for trans-generational wealth transfer, or succession is another oft-cited and key hallmark of family firms (Churchill & Hatten, 1987). Miller et al., (2007) suggests that sole owners are independent of succession and family conflict issues. Family firms have been seen to forego growth to retain safe control and avoid external ownership or claims on the firm. Finally, family firms are characterised as seeking the safest financing routes (Romano, et al., 2001; González, et al., 2013).

The 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 it's use is intended (Modigliani & Miller, 1958). In the intervening period traditional finance theories such as agency theory (1970's), trade-off theory (1970/80's), life-cycle theory (1950's), pecking order theory (1980's) and more recently the role of institutional settings offers potential insights into firm financial preferences and the availability of finance to them.

Agency theory is concerned with resolving the agency problems that arise from asymmetric information between the firm and its capital suppliers (Harris & Raviv, 1991). The potential for credit constraint to arise from agency concerns is manifested through agency costs (Jensen & Meckling, 1976). Studies of firm financing attest that family firms have advantages and disadvantages in dealing with agency costs (Fama & Jensen, 1983; Ang et al., 2000; Schulze et al., 2003). Berger & Udell (1998) and Andres (2011) attest that family ownership is associated with the alleviation of agency conflicts due to the unification of ownership and management. The family unit and the firm are intertwined in a family firm, as such altruism towards family members is evident. However, family firms may be susceptible to the 'dark side of altruism' (Schulze et al., 2003) or the problem of free-riders (Crespí & Martín-Oliver, 2015). Agency theory is relevant to understanding how SMEs family-owned firms are financed as it shapes relationships and perception of these firms.

Trade-off theory is primarily concerned with balancing the tax shield benefit and the down-side risks of failure, bankruptcy as a consequence of high debt levels in firms' capital structure (Myers, 1984). López-Gracia and Sánchez-Andújar (2007) find no clear evidence that the tax shields of debt influence the financing decisions of family-owned firms. In contrast, the control motivation of family firms (Burgstaller & Wagner, 2015) may be a more potent incentive to embrace debt rather than any tax shield benefits.

Pecking order theory posits that firms prefer internal financing only followed external finance as a quasi-last resort due to information and transaction costs. (Myers, 1984; Myers & Majluf, 1984). In the case of family firms a hierarchial order to financing is attested in research (López-Gracia & Sánchez-Andújar, 2007; Vieira, 2013; Burgstaller & Wagner 2015). Lappalainen and Niskanen (2013) concur finding that small family firms firms in Finland have a preference for internal equity over non-control altering finance such as trade credit and bank debt. In sum, much support persists for the pecking order theory in Europe in family-owned SMEs.

The firm life cycle theory (Penrose, 1952; Rostow, 1959) charts the evolution of a firm through various growth stages measured by firm age. Keasey, et al. (2015) find that young family firms are unwilling to dilute control. Hence, these firms source their finance through bank debt or informal channels. In sum, this theory has application in both SME and family firm research. Omitting the non-economic goals inherent in family-owned firms lacks completeness (Romano et al., 2001).

The role of country effects in determining the capital structure of firms has garnered increasing attention in the literature. The importance of country effects such as the legal systems, enforcement and financial development is paramount to SMEs' ability to access appropriate external finance to grow (Beck & Demirguc-Kunt, 2006). Private family firms have been shown to have greater reliance on bank debt for a myriad of reasons (Crespí & Martin-Oliver, 2015). A pan-European study necessitates consideration of the implications of differing institutional settings across nations (Beck, et al., 2008; Jõeveer, 2013; McNamara et al., 2017). The institutional setting of a country affects operations and availability of finance for firms. The institutional environment gap identified in prior SME based studies (Hall et al., 2004) to the author's knowledge the gap extends to the SME family-owned firms where a comparable cross-country analysis does not exist. Understanding the impact of the institutional setting matters as SME family firms rely more on bank finance (Crespí & Martin-Oliver, 2015). Any increase in sovereign risk is likely to impact the funding position of banks leading to a sharp decline in the availability of finance for SMEs and are more likely to become credit rationed (Duygan-Bump, et al., 2015; Ferrando et al., 2017). In summary, consensus exists as to the importance of institutional setting in which small family-owned firms are based (Beck, et al., 2005; Masiak et al., 2017). Schmid (2013) recommends that the institutional environment should not be ignored in studies of family firm finance.

The hypotheses which are linked to finance usage are enabled by the SAFE survey which seeks information on the use of various financing sources. These include internal equity, bank debt, grants, trade credit, leasing/HP, debt securities, external equity and newer alternative financing sources (Appendix 1 details the survey question and description of each finance type).

Several studies find that family-owned SME firms place strong reliance on retained earnings and are reluctant to use external sources of finance (Poutziouris, 2001; Vadnjal & Glas, 2008; Molly et al., 2012; Mohamadi, 2012). Given the strong evidence to support the preference for retained earnings by family-owned firms Hypothesis 1 is:

Hypothesis 1: Family-owned SMEs are more likely to use retained earnings than SME sole-owner firms.

Vadnjal & Glas (2008) show how SME family-owned firms are both better informed and display a preference for using government support. As government grants and subsidised bank loans do not impact on the control orientation of family-owned SMEs, Hypothesis 2 proposes:

Hypothesis 2: Family-owned SMEs are more likely to use grants and subsidised loans than SME sole-owner firms.

Numerous studies attest that SME family-owned firms rely more on short-term bank debt (Coleman & Carsky, 1999; Colot & Croquet, 2009; Lappalainen & Niskanen, 2013; Węcławski, 2014; Burgstaller & Wagner, 2015). Such evidence suggests support for the pecking order theory. Thus, given the significant cohort of evidence to support the use of bank credit lines by family-owned SMEs Hypothesis 3 reads:

Hypothesis 3: Family-owned SMEs are more likely to use bank credit lines than SME sole-owner firms.

If external finance is required then family-owned firms are more likely to use long-term bank debt than non-family firms (Serrasqueiro et al., 2012; Lappalainen & Niskanen, 2013; Ramalho et al., 2014; Burgstaller & Wagner, 2015). Vadnjal & Glas, (2008) show how small family-owned firms use more bank loans than their counterparty due to strong banking

relationships. Given the overarching evidence in support of bank loan usage by family-owned SMEs Hypothesis 4 is as follows:

Hypothesis 4: Family-owned SMEs are more likely to use bank loans than SME sole-owner firms.

Family-owned firms are shown to rely more on trade credit because collateral or information sharing is not required (Poutziouris, 2001; Lappalainen & Niskanen, 2013; Moritz et al., 2016). Young family-owned SMEs in the trade sector are more likely to use trade credit (Moritz et al., 2016; Masiak et al., 2017). Given the body of evidence supporting usage of trade credit by family-owned SMEs Hypothesis 5 suggests:

Hypothesis 5: Family-owned SMEs are more likely to use trade credit than SME sole-owner firms.

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; Lappalainen & Niskanen, 2013). Thus, based on the supporting evidence and risk aversion orientation of SME family-owned firms Hypothesis 6 reads:

Hypothesis 6: European SME family firms are more likely to use other loans than SME sole-owner firms.

Debt securities have been found to be of little relevance in the financing of SMEs (Moritz et al., 2016; Ferrando et al., 2017). Given the dearth of evidence Hypothesis 7 proposes:

Hypothesis 7: There is no difference in the use of debt securities between Family-owned SMEs and SME sole-owner firms.

Considerable evidence assert that family-owned SMEs and indeed non-family SMEs are reluctant to use external equity capital because of their desire to maintain control (Poutziouris, 2001; Cosh et al., 2009; Ferrando et al., 2017). Given the heightened risk aversion inherent in family-owned SMES, such firms are reluctant to use external equity (Poutziouris, 2001; Vadnjal & Glas, 2008; Croci et al., 2011; Motylska-Kuzma, 2017). Given the body of evidence that equity capital is not preferred as a source of finance for family owned SMEs Hypothesis 8 proposes:

Hypothesis 8: Family-owned SMEs are less likely to use equity capital than SME sole-owner firms.

Family owned SMEs rely on short-term finance such as leasing and hire purchase (Poutziouris, 2001; Lappalainen & Niskanen, 2013). Moritz et al. (2016) shows how younger family-owned firms rely more on leasing as a source of finance. Given this strong evidence to support the usage preference for leasing and hire purchase sources by family owned firms Hypothesis 9 is:

Hypothesis 9: Family-owned SMEs are more likely to use leasing and hire purchase than SME sole-owner firms.

Small family-owned firms display limited use of factoring (Di Giuli et al., 2011). Yet, Lappalainen & Niskanen (2013) show how family-owned SMEs are more likely to use factoring, due to difficulty in accessing long-term bank loans. Based on the evidence that family-owned SMEs rely more on short-term debt such as factoring leads to Hypothesis 10:

Hypothesis 10: Family-owned SMEs are more likely to use factoring than European SME sole-owner firms.

Crowdfunding and peer to peer lending are the main alternative finance sources accounting for circa 87% of the European market volume in 2016 (Cambridge Centre for Alternative Finance, 2018). Rupeika-Apoga and Saksonova (2018) point to the fragmented nature of the alternative financing providers for SMEs which may limit growth. Given the unlikely usage of other sources by family-owned SMEs and indeed non-family owned SMEs Hypothesis 11 proposes:

Hypothesis 11: There is no difference in the use of other sources between Family-owned SMEs and SME sole-owner firms.

Family-owned Spanish unlisted firms, during times of crisis, are found to suffer fewer external financing constraints likely due to their long-term goals and better relationships with lenders (Crespí & Martin-Oliver., 2015). Similar results are attested by Migliori, et al., (2018) for Italian family-owned SMEs. Based on the evidence that family-owned SMEs are likely to experience less bank credit line constraint, Hypothesis 12 proposes:

Hypothesis 12: Family-owned SMEs are less likely to be credit constrained for bank credit lines in contrast to SME sole-owner firms.

Keasey et al. (2015) contend that the relationship which European family-owned firms forge with banks helps to alleviate possible credit constraint. Spanish and Italian family-owned SMEs are found to experience less bank credit constraint compared to non-family firms (Crespí & Martin-Oliver., 2015; D'Aurizio et al., 2015), due to fewer agency problems between family firms and banks. Thus, given the evidence that family-owned SMEs are less likely to be credit rationed for bank loans Hypothesis 13 reads:

Hypothesis 13: Family-owned SMEs are less likely to be credit constrained for bank loans in contrast to SME sole-owner firms.

3 Data and Methodology

To test the usage of credit sources by European SMEs, the following model estimates the usage of various sources of credit by firms via a maximum-likelihood Probit:

$$Prob\ (Instrument\ Usage_a = 1) = (\beta 1 Ownership + \beta 2 Firm_{abcde} + \beta 3 Distressed + \beta 4 Indices_{fg} + \varepsilon)$$

The dependent variable $Instrument\ Usage_a$ is a binary variable that takes a value of 1 when a financing instrument has been used by the firm in the previous six months, if the financing source has not been used in that time frame it has a value of 0. There are eleven instruments (a) tested. Furthermore, the model is specified twice based on two comparative groupings of ownership ($\beta_1 Ownership_{bc}$). $\beta 1 Ownership$ has a binary outcome for the ownership type, 1 when the firm is family-owned, 0 when the firm is classed as a sole owner
$\beta 2 Firm_{abcd}$ is a collection of non-binary categorical firm specific variables where a is the age of the firm, b is firm size by number of employees, c is the economic activity in which the firm is engaged, d is the percentage of total firm turnover that is represented by exports, and e represents whether the firm is engaged in innovation. $B_3 Distressed$ is a dummy variable representing distressed economies within the sample with a value of 1 if the firm operates in Greece, Ireland, Italy, Portugal, or Spain and has a value of 0 if it is any of the other countries within the sample.

Finally, $B_4Indices_{fg}$ contains two indices derived from questions across the ECB SAFE survey. Trading Distress (*f*) provides a recent measure a firm's specific trading condition. The Trading distress index which 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 trading distress. The second index (*g*) devised aims to capture the financial health of a firm, 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 (see appendix 2).

To test for bank credit constraint experienced by European SMEs, the following model estimates the usage of various sources of credit by firms via a maximum-likelihood Probit:

$$Prob\ (Applications\ and\ Outcomes_a = 1) = (\beta 1Ownership + \beta 2Firm_{abcde} + \beta 3Distressed + \beta 4Indices_{fg} + \varepsilon)$$

In this case, the dependent variable instrument $Applications\ and\ Outcomes_a$ represents a number of variables that takes a value of 1 when bank finance (loans or credit lines) has been applied for, not needed, or the firm has self-rationed or been rationed by the provider in the previous six months. If the response to these questions in that time frame is negative, it has a value of 0. Two instruments (*a*) are tested. The independent variables respectively are as reported above.

The European Commission (EC) and the European Central Bank (ECB) established the Survey on the Access to Finance of Small and Medium-sized Enterprises (SAFE) in 2009. The purpose of the survey, which covers 38 countries, is to assess the trends in financing conditions primarily for SMEs' but also for larger firms. Several questions regarding firm finance are asked including firms' perception of the prevailing economic and financing conditions. The firms sampled are randomly selected from the Dun & Bradstreet business register. The sample stratified by country, enterprise size class and economic activity, is conducted bi-annually. Six SAFE waves for 12 countries covering the period April 2014 – March 2017 have been chosen. These 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).

Table 1 reports the summary statistics for the entire SME sample and across the forms of ownership, represented by 46% family-owned SMEs, 37% solely-owned firms and 17% other SMEs. The sample comprises twelve countries with the largest samples from Italy, France, Spain and Germany. SMEs who report their turnover is comprised of exports represent 45.8 percent of the sample.

Family-owned firms are more dominant in the PIIGS accounting for 55% of the sample in contrast to solely-owned firms at 34%. Moreover, family firms are older in these distressed countries with a representation of 85% compared to 78% of sole owner SMEs who are over 10 years of age. Solely-owned firms have a greater share of the micro SME category at 56% in contrast to family-owned SMEs at 40%. Family-owned SMEs in the PIIGS report that 49% of their turnover comprises of export activity in comparison with 38% reported by solely-owned firms.

[Table 1 here]

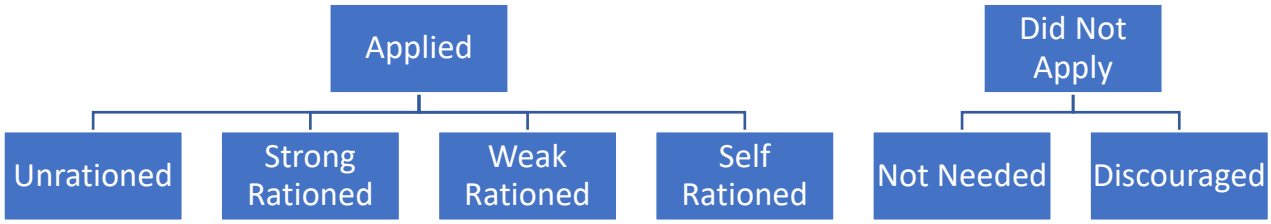
3.1 Dependent Variable

To analyse firm financing usage in the sample, SAFE question four is of primary importance. Firms are asked if they used various finance sources over the previous six months. Respondents can also reply - did not use them during the past six months but have experience with them, never used this form of financing or firms could indicate that they did not use any external financing. There are eleven financing sources, namely, (a) retained earnings or sale of assets, (b) 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 a related company or shareholders), (g) debt securities, (h) equity capital (quoted shares, unquoted shares or other forms of equity provided by the owners or external investors e.g. venture capital companies or business angels). (i) leasing & hire-purchase, (j) factoring (k) other sources (crowdfunding, subordinated debt, participating loans and peer-to-peer lending).

To test for forms of bank credit constraint, a two-part approach is taken which is further divided into 7 models. The SAFE dataset provides information on firm credit applications (Q7A) and whether the firm received all, some, or none of the credit they applied for (Q7B). The responses from Q7A shed light on applications made, or whether the firm did not apply

because of sufficient current resources or discouragement. Q7B represents the credit supply side decisions, whether the firm was unrationed, strong rationed, weak rationed, or self-rationed, as displayed in figure 1 below.

Figure 1 Application and Outcomes Decision Tree



Source: The Author

3.2 Independent Variables

This paper has three forms of ownership namely family-owned firms, sole owners, and all other SMEs. Five countries have proportionally more family-owned firms, namely, Greece, Ireland, Italy, Portugal, and Spain (PIIGS). Several studies attest that the ownership of a firm can influence the financial decision making (Romano et al., 2001; Ferrando & Griesshaber 2011; Ramalho, et al., 2014).

Three age categories are used; young (0-5), established (5-10), and mature (10+). Keasey et al. (2015) assert that age is the primary differentiating factor between family-owned firms and non-family firms that impacts on firm leverage.

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). Firm size in conjunction with a family firm ownership structure has predictive merit for debt usage (Romano, et al., 2001; Maherault 2004; Ramalho et al., 2014).

SAFE uses four sectors to describe the economic activity of a firm – industry, construction, trade and services.

A category is also used to display an SMEs percentage of turnover that is represented by exports. Riding et al. (2012) show that export SMEs are more likely to apply for a greater range

of external financing. A category also describes a firm who has innovation activity, by developing a new or improved product or service in the previous period.

Twelve countries are used in this study together with a geographic split between PIIGS (5 distressed economies) and non-PIIGS (7 non-distressed countries). The pronounced reliance by privately owned family firms on bank debt heightens the significance of a countries' institutional setting in their capital structure (González et al.,2013; Keasey et al., 2015).

4 Findings

Tables 2 show how SMEs in distressed countries are more likely to use Grants and subsidised bank loans, bank loans, debt securities and especially trade credit. In the comparative analysis with sole owner firms, the family cohort are more likely to use retained earnings, bank credit lines, bank loans, other loans and trade credit. While there is evidence in Table 2 that family-owned SMEs are also more likely to use equity capital, it is noted that the marginal effects are very small and comparison with solely-owned firms is largely irrelevant given that equity capital is beyond their remit. Hypothesis 1 is supported. In addition, and statistically insignificant, the family firm subsample (Table 3) reverses the direction of relationship between retained earnings and PIIGS domiciliary. Family-owned SMEs prefer using their own resources likely due to their conservative nature and unwillingness to dilute control which is in keeping with the internal sources first supposition of the pecking-order hypothesis.

Firms in the PIIGS are reported more likely to use grants and subsidised bank loans although family firms are no more likely to use this source (Table 2) when compared to solely-owned firms. Grants and subsidised bank loans are an important source of finance for family-owned SMEs in the PIIGS (Table 3) likely due to a preference for this source and a decline in the availability of other sources in these countries, notably bank finance. Vadnjal & Glas (2008) attest that family-owned SMEs are better informed and are more likely to use government financial support. Our tables lend support to family firms being more likely to consider forms of credit that mitigate financial jeopardy. The results do not reject Hypothesis 2.

Several studies show that family-owned SME rely more on short-term bank debt (Coleman & Carsky, 1999; Lappalainen & Niskanen, 2013; Węcławski, 2014; Burgstaller & Wagner, 2015). Such evidence suggests support for the pecking order theory. Bank loans represent the other traditional form of bank financing and are more heavily relied upon by family firms than their

non-family counterparts (Vadnjal & Glas, 2008; Mohamadi, 2012 Serrasqueiro et al., 2012; Ramalho et al., 2014; Burgstaller & Wagner, 2015). Several reasons for this have been posited including control, risk-aversion, and relationship ties with lenders. Firms in distressed countries are more likely to use bank loans yet such evidence is not found for bank credit lines. Comparatively, family-owned SMEs are more likely to use bank credit lines and bank loans than solely-owned firms (1.5 per cent and 1.4 per cent respectively). The direction of this relationship continues in the family-owned firm subsample (Table 3) albeit the significance is insignificant. These findings suggest support for Hypothesis 3 and 4.

Family-owned SMEs are found to use more trade credit in contrast to sole-owner firms (Table 2). Family-owned firms have been shown to use trade credit where collateral and/or information sharing is less required (Poutziouris, 2001; Lappalainen & Niskanen, 2013; Moritz et al., 2016). It is not surprising that firms in distressed countries are considerably more likely to use trade credit, and stronger evidence of this relationship is reported in the family-owned firm subsample (Table 3) . Support is found for Hypothesis 5.

Young family-owned SMEs have previously placed significant reliance on loans from friends and family in the early stages of firm growth (Romano et al., 2001; Chavis et al., 2011; Lappalainen & Niskanen, 2013). However, the results for use of other loans are mixed but, not necessarily contradictory. As shown in Table 2 when family firms are compared with sole owner SMEs a statistically significant positive relationship is evident, suggesting some support for Hypothesis 6. Yet, firms in the PIIGS are less likely to use other loans in contrast to SMEs in other countries. Indeed, family-owned SMEs (Table 3) in the PIIGS follow a similar pattern as they are less likely to use other loans.

Debt securities are not a preferred source of finance for SMEs (Moritz et al., 2016; Ferrando et al., 2017). Interestingly, firms in distressed countries (Table 2), as are family-owned SMEs (Table 3), are reported to use more debt securities than those in the other countries. Family-owned SMEs show a statistically insignificant relationship with debt securities compared against solely-owned firms. Hypothesis 7 is reaffirmed.

There is overwhelming evidence to support the reluctance of family-owned SMEs to use external equity capital to maintain control of their business (Poutziouris, 2001; Romano et al., 2001; López-Gracia & Sánchez-Andújar, 2007; Vadnjal & Glas, 2008; Gonzalez et al., 2013;

Ramalho et al., 2014). The findings in Table 2 suggest rejection of Hypothesis 8 as family-owned firms show a statistically significant positive relationship with equity capital compared with solely owned SMEs, albeit the magnitude is minor. This is not surprising given the difficulty that sole owners would face in accessing equity capital. In the family-owned SME subsample analysis (Table 3) evidence supports the reluctance of this cohort to use this source of finance.

There is no difference reported that family-owned SMEs are any more likely to use leasing and hire-purchase compared with sole owner (Table 2). The results reject Hypothesis 9, and differ to prior studies (Poutziouris, 2001; Lappalainen & Niskanen, 2013; Moritz et al., 2016). Indeed, firms in the PIIGS are found much less likely to use leasing and hire purchase than those in other countries. Family-owned firms domiciled in the PIIGS are also much less likely to use this source of finance (Table 3).

Mixed evidence exists of the usage by family-owned SMEs of factoring as a source of capital. Firstly, Di Giuli et al. (2011) found that small family firms show little appetite for factoring. On the other hand, some studies show that these firms prefer factoring (Poutziouris, 2001: Lappalainen & Niskanen 2013). Interestingly, the findings for usage of factoring when compared with sole-owners are insignificant. These results contradict several prior studies. The results suggest rejection of Hypothesis 10.

Alternative and newer sources of finance, while a financing growth area have not yet been found to play a strong role in the capital structure of family-owned SMEs. In our results, family-owned SMEs are shown to have a statistically insignificant relationship when compared with sole owners. Table 3 (family firm subsample) provides evidence again that family firms are reluctant to use a source of finance likely to impact control of the business. The findings support Hypothesis 11.

While the studies' primary goal is to gauge the effect of family ownership on financial instrument usage in distressed countries in contrast to solely-owned SMEs there are several findings that have wider implications for the financing of the European family-owned SME community (Table 3). The effect of size on the likelihood of a family firm using a particular financial instrument is consistent. All else being equal, a small firm is more likely to use a given finance source than a micro firm, while a medium firm is more likely to use the same source

more than a small family firm. Directionally this holds true across all financing sources, most notably retained earnings, grants and subsidised bank loans, trade credit bank credit lines, bank loans, leasing and hire purchase. The impact of the age variable is not as consistent. Yet these findings are consistent with the backbone of pecking order and life-cycle theories, as firms grow and age, they can mitigate issues of information asymmetry. Family-owned SMEs who experience trading distress are found to use few external financing instruments, whilst those suffering financial distress are found to rely on a broad range of sources (Table 3).

[Tables 2 – 3 Here]

Tables 4 illustrate the likelihood of credit rationing of family-owned SMEs in contrast to solely owned firms with regards to bank credit lines. In this test there is no evidence whatsoever of bank credit rationing. There is evidence that family firms are more likely to receive everything sought from bank and are less likely to experience weak rationing (Table 4). This suggests support for hypothesis 12. This result was expected given family firm preference for sources of finance that do not jeopardise control and lends support to Crespí & Martin-Oliver (2015) and Migliori, et al. (2018). Furthermore, SMEs operating in PIIGS economies are ten per cent more likely to make an application for bank credit lines in contrast to sole owners. Firms in these previously distressed countries are less likely to receive their full application allotment and are more likely to be weak rationed.

[Table 4 Here]

Bank loans, the other traditional form of bank financing, have been found to be preferred more by family firms than their non-family counterparts (Vadnjal & Glas, 2008; Mohamadi, 2012; Serrasqueiro et al., 2012; Ramalho et al., 2014; Burgstaller & Wagner, 2015). The rationale includes control, risk-aversion, and better relationship ties with lenders. Tables 8 and 9 present the findings. Family firms are statistically more likely to apply for a bank loan and are more likely to be granted everything sought when compared to sole owner SMEs. Just as with bank credit lines there is no evidence found of any credit rationing likelihood. These results suggest that family-owned SMEs are better able to mitigate agency concerns with lenders. Support is found for hypothesis 13. Once again, firms in PIIGS nations are more likely to apply for bank loans, though not at the same level as seen with the more informal bank credit lines. However, the outcomes of these applications are significantly more constrictive

to PIIGS SMEs, as firms are approximately ten per cent less likely to receive their application in full.

[Table 5 Here]

Tables 6 and 7 (below) present the family firm subsample in respect of the likelihood of credit constraint for bank credit lines and bank loans. When only considering PIIGS firms which are owned by families, bank credit applications increase while discouragement lessens. However, in terms of the bank decision it is found that the likelihood of receiving the full amount of an application is diminished with strong and weak-rationing somewhat more likely, although the statistical evidence is weak. This finding suggests that the family protections against bank credit rationing are stronger in non-distressed nations.

[Tables 6 and 7 Here]

5 Conclusion

This paper examined the sources of finance employed by European SMEs in distressed countries and specifically family-owned firms within this group. It is shown that family ownership conveys a broadly positive effect on the use of external sources of credit. Retained earnings, trade credit, other loans and notably both forms of bank finance are preferred by family-owned firms in comparison with solely-owned SMEs. This all tells a story of family ownership heightened likelihood of using external sources of finance. Family-owned SMEs, likely due to risk aversion and control orientation, are least likely to use equity capital and are likely to pass on the newer alternative finance sources in favour of bank debt.

Family-owned SMEs are more likely to apply for both forms of bank finance and when compared with sole owners are likely to be granted everything sought. No evidence is found that the family firm cohort in distressed countries experience any form of credit rationing and in fact are less likely to be credit discouraged. This suggests that family firms are better able to mitigate agency concerns with lenders.

There are more family-owned firms in the distressed economies. However, all SMEs domiciled in PIIGS countries appear to have a lingering appetite for all forms of traditional bank financing

and they do not display any great level of discouragement. However, there does appear to be frictions in receiving the full amount of their applications, with weak-rationing evident. Family-firms offer some protection from bank credit constraint but that is only evident in non-distressed nations.

SME size and age variables results are similar indicating that as firms grow, they are likely to use a broader range of financing sources, consistent with the backbone of pecking order and life-cycle theories. It is noted that family-owned firms are on-average older and larger than solely owned SMEs.

The study has limitations. Firstly, the categorical nature of the data restricts the type of possible regression analyses. Secondly, self-selection of ownership type may be considered a limitation. Finally, there are no measures of direct family control, management, governance, generation of ownership, thus limiting exploration of intra-family heterogeneity issues.

The results of this study contribute to the SME family-firm finance literature as the first to examine the financing sources, and potential for bank credit constraint of this strategic cohort. Secondly, this research adds to the body of evidence that family-owned, and solely-owned are distinctly different. Third, this study contributes to cross-country research on SME financing focusing on 12 European countries, and tracking the lingering impact of sovereign debt crisis on the SME financing landscape. Finally, the study has policy implications as the results reveal that SME financing in Europe is not homogenous, but that different financing usage patterns exist depending on a number of characteristics including the ownership of the firm, and also whether the firm is operating in one of the much-maligned PIIGS economies.

Future work is encouraged by this paper which sheds light on the financing usage of SME family-owned firms in European distressed countries. Further study of this cohort in European countries with a focus on the institutional setting and lending environment would provide a more robust understanding of SME family-firm credit availability and financing constraint.

Table 1 – Descriptive Statistics – Full Sample & By Ownership

	Full Sample			Family Firms			Sole Owners			Other 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	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

Table 2 - Source Usage - Family-owned SMES versus Sole Owner SMEs (Marginal Effects)

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
PIIGS	-0.0044	0.0484***	0.0062	0.0197***	0.1181***	-0.0268***	0.0062***	-0.0197***	-0.1544***	0.0083**	-0.0084***
	(-0.79)	(10.84)	(0.81)	(3.17)	(22.80)	(-6.20)	(3.95)	(-7.77)	(-24.48)	(2.31)	(-3.63)
Family Firms	0.0398***	0.0065	0.0148**	0.0135**	0.0167***	0.0125***	0.0017	0.0059***	0.0089	0.0054	0.0008
	(7.49)	(1.49)	(1.99)	(2.24)	(3.24)	(3.04)	(1.19)	(2.96)	(1.47)	(1.52)	(0.39)
5-10 years	0.0200*	0.0100	0.0551***	0.0299**	0.0056	-0.0393***	0.0034	-0.0120**	0.0152	-0.0061	-0.0151**
	(1.73)	(1.01)	(3.37)	(2.26)	(0.47)	(-3.82)	(1.14)	(-1.97)	(1.07)	(-0.69)	(-2.52)
10+ years	0.0356***	0.0097	0.0725***	0.0362***	0.0098	-0.0364***	0.0031	-0.0190***	-0.0067	-0.0080	-0.0175***
	(3.62)	(1.16)	(5.22)	(3.24)	(0.96)	(-3.94)	(1.30)	(-3.48)	(-0.56)	(-1.03)	(-3.21)
10 to 49	0.0514***	0.0484***	0.0656***	0.0787***	0.0527***	0.0035	0.0011	0.0056**	0.1418***	0.0426***	0.0110***
	(8.56)	(9.58)	(7.68)	(11.54)	(8.94)	(0.76)	(0.65)	(2.44)	(20.30)	(10.86)	(4.34)
50 to 249	0.1123***	0.0752***	0.1144***	0.1698***	0.0897***	0.0268***	0.0031	0.0083***	0.2388***	0.0789***	0.0096***
	(13.69)	(10.94)	(10.84)	(18.23)	(11.43)	(4.32)	(1.32)	(2.87)	(25.53)	(13.50)	(3.06)
Construction	0.0112	-0.0334***	0.0494***	-0.0024	0.0110	0.0121	0.0028	0.0018	0.0433***	-0.0205***	0.0103**
	(1.07)	(-3.90)	(3.42)	(-0.21)	(1.07)	(1.57)	(0.97)	(0.45)	(3.67)	(-2.82)	(2.45)
Trade	-0.0086	-0.0308***	0.0236**	0.0128	0.0349***	0.0204***	0.0036	-0.0010	-0.0071	-0.0251***	0.0031
	(-1.06)	(-4.38)	(2.04)	(1.37)	(4.18)	(3.34)	(1.58)	(-0.32)	(-0.79)	(-4.39)	(1.12)
Services	-0.0107	-0.0342***	-0.0273**	-0.0227***	-0.0525***	0.0124**	-0.0013	0.0012	0.0154*	-0.0352***	0.0087***
	(-1.43)	(-5.18)	(-2.54)	(-2.66)	(-7.29)	(2.24)	(-0.69)	(0.44)	(1.84)	(-6.67)	(3.24)
Exporters	0.0260***	0.0188***	0.0400***	0.0093	0.0272***	0.0090**	0.0009	0.0051**	0.0343***	0.0191***	0.0050**
	(4.68)	(4.13)	(5.15)	(1.47)	(5.10)	(2.11)	(0.62)	(2.41)	(5.42)	(5.17)	(2.28)
Innovators	0.0210***	0.0319***	0.0281***	0.0227***	0.0203***	0.0261***	0.0038***	0.0061***	0.0081	0.0154***	0.0104***
	(3.84)	(7.33)	(3.64)	(3.66)	(3.89)	(6.27)	(2.58)	(2.98)	(1.28)	(4.39)	(4.82)
Trading Distress	0.0038***	-0.0011	-0.0077***	-0.0041***	-0.0052***	0.0007	0.0003	0.0007	-0.0046***	-0.0026***	-0.0008
	(2.83)	(-0.94)	(-4.08)	(-2.68)	(-3.96)	(0.65)	(0.89)	(1.30)	(-3.00)	(-2.88)	(-1.38)
Financial Distress	-0.0189***	0.0064***	0.0220***	0.0059***	-0.0010	0.0067***	0.0022***	-0.0002	-0.0030	0.0059***	0.0021***
	(-10.96)	(4.58)	(9.07)	(3.03)	(-0.61)	(5.06)	(4.50)	(-0.30)	(-1.51)	(5.23)	(2.98)
Observations	21921	22033	22315	22180	22083	22096	21893	21865	22243	21956	21630

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

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.$

Table 3 – Source Usage - Family-owned SME Subsample (Marginal Effects)

	Retained Earnings	Grants & Subsidies	Credit Lines	Bank Loan	Trade Credit	Other Loans	Debt Securities	Equity Capital	Leasing & HP	Factoring	Other Sources
PIIGS	0.0047	0.0500***	0.0134	0.0131	0.1362***	-0.0291***	0.0067***	-0.0185***	-0.1552***	0.0166***	-0.0076**
	(0.60)	(7.71)	(1.31)	(1.54)	(17.84)	(-5.01)	(2.87)	(-5.71)	(-19.64)	(3.22)	(-2.56)
5-10 years	0.0143	0.0206	0.0576**	0.0359*	-0.0151	-0.0539***	0.0029	-0.0047	-0.0096	-0.0122	-0.0179*
	(0.76)	(1.35)	(2.32)	(1.76)	(-0.77)	(-3.34)	(0.52)	(-0.50)	(-0.44)	(-0.82)	(-1.94)
10+ years	0.0344**	0.0233*	0.0588***	0.0434**	-0.0112	-0.0475***	-0.0003	-0.0158*	-0.0334*	-0.0117	-0.0187**
	(2.11)	(1.81)	(2.76)	(2.50)	(-0.65)	(-3.23)	(-0.06)	(-1.91)	(-1.77)	(-0.91)	(-2.19)
10 to 49	0.0603***	0.0432***	0.0652***	0.0784***	0.0584***	0.0074	0.0013	0.0127***	0.1583***	0.0508***	0.0113***
	(6.96)	(6.07)	(5.54)	(8.30)	(6.85)	(1.15)	(0.54)	(3.99)	(16.97)	(9.16)	(3.33)
50 to 249	0.1364***	0.0781***	0.1198***	0.1753***	0.0950***	0.0245***	0.0038	0.0152***	0.2483***	0.0868***	0.0101**
	(12.15)	(8.46)	(8.64)	(14.43)	(8.84)	(3.04)	(1.17)	(3.92)	(21.15)	(11.33)	(2.53)
Construction	0.0161	-0.0533***	0.0456**	-0.0363**	0.0100	0.0015	0.0022	0.0028	0.0436***	-0.0123	0.0121**
	(1.08)	(-4.51)	(2.36)	(-2.31)	(0.67)	(0.14)	(0.52)	(0.50)	(2.75)	(-1.15)	(1.99)
Trade	0.0020	-0.0409***	0.0232	0.0153	0.0405***	0.0098	0.0039	-0.0003	-0.0178	-0.0256***	0.0023
	(0.18)	(-4.20)	(1.53)	(1.19)	(3.42)	(1.18)	(1.13)	(-0.07)	(-1.53)	(-3.24)	(0.60)
Services	-0.0061	-0.0403***	-0.0288**	-0.0358***	-0.0612***	0.0072	-0.0039	0.0014	0.0137	-0.0383***	0.0059
	(-0.59)	(-4.35)	(-2.04)	(-3.07)	(-6.00)	(0.94)	(-1.39)	(0.37)	(1.25)	(-5.29)	(1.62)
Exporters	0.0241***	0.0301***	0.0474***	0.0045	0.0286***	0.0065	-0.0006	0.0017	0.0297***	0.0259***	0.0041
	(2.95)	(4.50)	(4.46)	(0.51)	(3.62)	(1.09)	(-0.27)	(0.58)	(3.44)	(4.67)	(1.36)
Innovators	0.0181**	0.0326***	0.0204*	0.0276***	0.0217***	0.0251***	0.0039*	0.0062**	0.0051	0.0127**	0.0099***
	(2.27)	(5.15)	(1.94)	(3.19)	(2.82)	(4.33)	(1.79)	(2.14)	(0.60)	(2.44)	(3.35)
Trading Distress	0.0048**	-0.0015	-0.0047*	-0.0036*	-0.0067***	0.0010	0.0007	0.0004	-0.0050**	-0.0027**	-0.0009
	(2.39)	(-0.92)	(-1.80)	(-1.66)	(-3.47)	(0.71)	(1.33)	(0.54)	(-2.35)	(-2.08)	(-1.24)
Financial Distress	-0.0260***	0.0080***	0.0209***	0.0048*	-0.0012	0.0058***	0.0017**	-0.0005	-0.0012	0.0071***	0.0020**
	(-10.32)	(3.94)	(6.29)	(1.75)	(-0.48)	(3.14)	(2.41)	(-0.58)	(-0.45)	(4.30)	(2.12)
Observations	12370	12438	12604	12531	12482	12474	12342	12325	12550	12377	12173

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

Table 4 – Bank Credit Line Applications and Outcomes - Family-owned SMES versus Sole Owner SMEs (Marginal Effects)

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
PIIGS	0.0958***	0.0418***	-0.1388***	-0.0299*	-0.0177*	0.0503***	-0.0047
	(9.92)	(4.42)	(-14.39)	(-1.79)	(-1.67)	(3.44)	(-0.78)
FF	0.0136	-0.0054	-0.0068	0.0314*	-0.0013	-0.0318**	0.0028
	(1.41)	(-0.58)	(-0.71)	(1.85)	(-0.13)	(-2.12)	(0.47)
5-10 years	0.0305	0.0210	-0.0522**	0.1116***	-0.0322	-0.0549	-0.0187
	(1.34)	(1.00)	(-2.35)	(2.73)	(-1.15)	(-1.53)	(-1.18)
10+ years	-0.0215	0.0215	-0.0025	0.1256***	-0.0541**	-0.0470	-0.0196
	(-1.10)	(1.19)	(-0.13)	(3.44)	(-2.16)	(-1.45)	(-1.35)
10 to 49	0.0492***	-0.0441***	-0.0059	0.0096	-0.0162	0.0038	0.0026
	(4.53)	(-4.12)	(-0.54)	(0.49)	(-1.29)	(0.22)	(0.37)
50 to 249	0.0886***	-0.0873***	-0.0034	0.0856***	-0.0564***	-0.0232	-0.0125*
	(6.60)	(-6.98)	(-0.26)	(3.84)	(-4.39)	(-1.18)	(-1.78)
Construction	0.0021	0.0141	-0.0160	-0.0263	0.0141	0.0050	0.0055
	(0.11)	(0.81)	(-0.89)	(-0.84)	(0.66)	(0.18)	(0.48)
Trade	-0.0134	-0.0065	0.0193	0.0018	-0.0024	-0.0007	0.0008
	(-0.91)	(-0.46)	(1.31)	(0.07)	(-0.14)	(-0.03)	(0.09)
Services	-0.0342**	0.0236*	0.0106	0.0299	-0.0318**	-0.0000	0.0013
	(-2.46)	(1.75)	(0.77)	(1.26)	(-2.02)	(-0.00)	(0.14)
Exporters	0.0181*	-0.0156	-0.0038	-0.0258	-0.0032	0.0423***	-0.0147**
	(1.80)	(-1.61)	(-0.38)	(-1.48)	(-0.29)	(2.77)	(-2.24)
Innovators	0.0585***	0.0019	-0.0609***	-0.0557***	0.0043	0.0432***	0.0071
	(6.03)	(0.20)	(-6.19)	(-3.34)	(0.40)	(2.96)	(1.19)
Trading Distress	0.0014	0.0067***	-0.0085***	-0.0076*	0.0026	0.0032	0.0012
	(0.57)	(2.88)	(-3.54)	(-1.87)	(1.02)	(0.89)	(0.78)
Financial Distress	0.0330***	0.0197***	-0.0539***	-0.0499***	0.0181***	0.0266***	0.0054***
	(11.48)	(6.99)	(-18.87)	(-10.67)	(5.83)	(6.30)	(3.04)
Observations	12688	12688	12688	3846	3846	3846	3846

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

Table 5 – Bank Loan Applications and Outcomes - Family-owned SMES versus Sole Owner SMEs (Marginal Effects)

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
PIIGS	0.0222**	0.0662***	-0.0916***	-0.1010***	0.0023	0.0917***	0.0075
	(2.52)	(7.60)	(-10.01)	(-6.45)	(0.21)	(7.10)	(1.28)
FF	0.0188**	-0.0124	-0.0056	0.0299*	-0.0126	-0.0169	-0.0000
	(2.18)	(-1.44)	(-0.62)	(1.86)	(-1.13)	(-1.28)	(-0.01)
5-10 years	0.0119	0.0347*	-0.0477**	0.0834**	-0.0850***	-0.0173	0.0203**
	(0.59)	(1.80)	(-2.32)	(2.12)	(-2.86)	(-0.52)	(2.21)
10+ years	-0.0066	0.0125	-0.0093	0.1098***	-0.0898***	-0.0384	0.0201***
	(-0.39)	(0.76)	(-0.52)	(3.18)	(-3.32)	(-1.33)	(3.29)
10 to 49	0.0944***	-0.0679***	-0.0254**	0.0381**	-0.0265*	0.0060	-0.0155**
	(9.65)	(-6.76)	(-2.46)	(1.98)	(-1.91)	(0.39)	(-2.25)
50 to 249	0.1697***	-0.1286***	-0.0438***	0.1223***	-0.0887***	-0.0212	-0.0161**
	(13.78)	(-11.08)	(-3.60)	(5.94)	(-6.65)	(-1.28)	(-2.11)
Construction	-0.0077	0.0169	-0.0074	-0.0316	0.0301	-0.0019	0.0052
	(-0.47)	(1.03)	(-0.43)	(-1.06)	(1.46)	(-0.08)	(0.48)
Trade	-0.0060	-0.0169	0.0240*	0.0025	0.0165	-0.0161	-0.0018
	(-0.46)	(-1.29)	(1.76)	(0.11)	(1.06)	(-0.87)	(-0.22)
Services	-0.0138	0.0131	0.0025	-0.0151	0.0262*	-0.0141	0.0058
	(-1.14)	(1.06)	(0.20)	(-0.71)	(1.78)	(-0.81)	(0.73)
Exporters	0.0187**	-0.0264***	0.0080	-0.0255	0.0106	0.0231*	-0.0103*
	(2.09)	(-2.96)	(0.85)	(-1.57)	(0.95)	(1.74)	(-1.71)
Innovators	0.0499***	0.0011	-0.0527***	-0.0368**	0.0148	0.0207	0.0015
	(5.74)	(0.13)	(-5.70)	(-2.38)	(1.37)	(1.64)	(0.27)
Trading Distress	-0.0066***	0.0139***	-0.0080***	-0.0059	0.0049*	0.0002	0.0001
	(-3.04)	(6.45)	(-3.53)	(-1.53)	(1.86)	(0.07)	(0.10)
Financial Distress	0.0208***	0.0259***	-0.0481***	-0.0407***	0.0219***	0.0151***	0.0036**
	(7.99)	(9.91)	(-17.72)	(-9.19)	(6.85)	(4.11)	(2.10)
Observations	14734	14734	14734	4012	4012	4012	4012

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

Table 6 – Bank Credit Line Applications and Outcomes - Family-owned SME Subsample (Marginal Effects)

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
PIIGS	0.101***	0.0227	-0.121***	-0.0424*	-0.00274	0.0487*	-0.00408
	(7.79)	(1.83)	(-9.66)	(-1.98)	(-0.21)	(2.58)	(-0.53)
5-10 years	0.0217	0.0185	-0.0427	0.160**	-0.0686	-0.0680	-0.0198
	(0.64)	(0.63)	(-1.31)	(2.83)	(-1.65)	(-1.38)	(-1.04)
10+ years	-0.0353	0.0476	-0.0171	0.162**	-0.102**	-0.0484	-0.00921
	(-1.21)	(1.88)	(-0.60)	(3.17)	(-2.68)	(-1.08)	(-0.50)
10 to 49	0.0380*	-0.0510***	0.0134	0.0307	-0.0106	-0.00992	-0.0120
	(2.54)	(-3.49)	(0.90)	(1.20)	(-0.65)	(-0.45)	(-1.23)
50 to 249	0.0862***	-0.102***	0.0141	0.0987***	-0.0586***	-0.0226	-0.0248**
	(4.86)	(-6.21)	(0.82)	(3.53)	(-3.71)	(-0.92)	(-2.68)
Construction	0.00105	0.0282	-0.0275	-0.0121	-0.000270	0.000136	0.00862
	(0.04)	(1.25)	(-1.17)	(-0.31)	(-0.01)	(0.00)	(0.55)
Trade	-0.00583	-0.0103	0.0185	-0.00145	-0.00468	0.0124	-0.00857
	(-0.30)	(-0.58)	(0.98)	(-0.05)	(-0.23)	(0.47)	(-0.78)
Services	-0.0400*	0.0483**	-0.00804	0.0286	-0.0225	-0.00484	-0.00461
	(-2.22)	(2.84)	(-0.46)	(0.99)	(-1.19)	(-0.19)	(-0.41)
Exporters	0.0188	-0.00226	-0.0179	-0.0261	-0.00627	0.0371	-0.00420
	(1.37)	(-0.18)	(-1.33)	(-1.17)	(-0.46)	(1.90)	(-0.53)
Innovators	0.0558***	0.0101	-0.0656***	-0.0387	0.00355	0.0310	0.00399
	(4.23)	(0.80)	(-5.02)	(-1.83)	(0.27)	(1.67)	(0.53)
Trading Distress	-0.00116	0.00739*	-0.00669*	-0.00948	0.00202	0.00443	0.00259
	(-0.35)	(2.39)	(-2.08)	(-1.82)	(0.62)	(0.97)	(1.38)
Financial Distress	0.0284***	0.0240***	-0.0535***	-0.0501***	0.0199***	0.0278***	0.00268
	(7.18)	(6.38)	(-13.88)	(-8.36)	(5.07)	(5.14)	(1.22)
N	7377	7377	7377	2363	2363	2363	2363

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7 – Bank Loan Applications and Outcomes - Family-owned SME Subsample (Marginal Effects)

	Applied	Not Needed	Discouraged	Received In Full	Strong Rationed	Weak Rationed	Self Rationed
PIIGS	0.0275*	0.0587***	-0.0876***	-0.112***	0.0202	0.101***	-0.00451
	(2.33)	(5.16)	(-7.41)	(-5.64)	(1.47)	(5.93)	(-0.61)
5-10 years	-0.0273	0.0566*	-0.0361	0.111*	-0.136**	0.0197	0.0131
	(-0.92)	(2.04)	(-1.23)	(2.00)	(-3.20)	(0.42)	(1.20)
10+ years	-0.0274	0.00546	0.0148	0.159***	-0.137***	-0.0400	0.0208**
	(-1.06)	(0.23)	(0.58)	(3.29)	(-3.48)	(-1.00)	(2.76)
10 to 49	0.0887***	-0.0775***	-0.00964	0.0454	-0.0386*	0.00586	-0.00967
	(6.67)	(-5.67)	(-0.69)	(1.78)	(-2.21)	(0.29)	(-0.98)
50 to 249	0.179***	-0.143***	-0.0362*	0.123***	-0.0816***	-0.0245	-0.0185
	(11.19)	(-9.46)	(-2.29)	(4.57)	(-4.66)	(-1.13)	(-1.88)
Construction	-0.0428*	0.0386	0.00258	-0.0487	0.0588*	-0.00927	0.000295
	(-1.99)	(1.80)	(0.12)	(-1.25)	(2.17)	(-0.29)	(0.02)
Trade	0.00729	-0.0294	0.0244	0.0139	0.0205	-0.0289	-0.00531
	(0.43)	(-1.81)	(1.42)	(0.51)	(1.15)	(-1.27)	(-0.56)
Services	-0.0207	0.0146	0.00833	-0.0130	0.0267	-0.0169	0.00613
	(-1.31)	(0.94)	(0.52)	(-0.50)	(1.57)	(-0.77)	(0.62)
Exporters	0.0167	-0.0116	-0.00466	-0.0233	0.00601	0.0173	-0.00224
	(1.37)	(-1.00)	(-0.38)	(-1.12)	(0.44)	(1.00)	(-0.30)
Innovators	0.0549***	-0.00664	-0.0494***	-0.0132	-0.00141	0.0135	0.00290
	(4.67)	(-0.57)	(-4.05)	(-0.67)	(-0.11)	(0.83)	(0.41)
Trading Distress	-0.00389	0.0139***	-0.0108***	-0.00454	0.00638	-0.00176	-0.000223
	(-1.32)	(4.91)	(-3.59)	(-0.93)	(1.95)	(-0.43)	(-0.13)
Financial Distress	0.0209***	0.0249***	-0.0471***	-0.0412***	0.0209***	0.0152**	0.00450*
	(5.91)	(7.24)	(-13.09)	(-7.35)	(5.39)	(3.20)	(2.09)
N	8703	8703	8703	2521	2521	2521	2521

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendices

Appendix 1 – SAFE Finance Sources

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

The ECB SAFE survey (2017) defines the eleven financing sources as:

Retained earnings are the 'internal funds like cash or cash equivalent, resulting for instance from savings, retained earnings or sale of assets'

Grants and subsidised bank loans are 'support from public sources in the form of guarantees or reduced interest rate loans'

Credit lines 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'.

Bank loans have a 'precise amount of loan' and that 'the dates of repayments are usually fixed'.

Trade credit is 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'.

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'.

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'

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'

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'.

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' (European Central Bank, 2017).

Appendix 2 – SAFE Indices

Building on the work of O'Toole et al., (2015) two composite indices are created to measure influencers on financial usage by European SMEs.

Trading Distress aims to provide a recent measure a firm's specific trading condition. The trading distress index relates to changes in (a) turnover, (b) labour costs, (c) other costs, (d) profit, and (e) sales. Index range is -5 to +5, with -5 indicating a firm has reported the best possible trading scenario and +5 indicating a firm has experienced the highest trading distress.

The second index devised aims to capture the financial strength of a firm created from changes in (a) the firms' debt-to-asset ratio, (b) own capital, (c) credit history, and (d) interest expenses. Index range is -4 to +4, with -4 indicates the lowest financial risk and +4 indicates a firm has experienced the highest financial risk.

Trading Distress	(Q2a) changes in turnover, (Q2b) changes in labour costs, (Q2c) changes in other costs, (Q2e) changes in profit, (Q11c) changes in sales over the past six months.	improved (-1), unchanged (0) or deteriorated (+1)
Financial Health	(Q2j) changes in the firms' debt-to-asset ratio, (Q11d) changes in own capital, (Q11e) changes in credit history, (Q2d) changes in interest expenses over the past six months	improved (-1), unchanged (0), or deteriorated (+1)

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