

1 Introduction

A debated issue in the family business literature is the impact that active family involvement in the company's management has on the firm's performance. Two major theoretical trade-offs are typically distinguished to determine advantages and disadvantages of family management and explain the mixed empirical findings: the agency trade-off (Bertrand and Schoar, 2006; Villalonga and Amit, 2006), and the stewardship trade-off (Miller et al., 2011, 2013; Chrisman et al., 2016). According to the agency trade-off, family appointed executives may lower the negative impact of information asymmetries between ownership and management at the cost, however, of exacerbating the risk of diversion of resources out of the company. In the stewardship trade-off, long-term-oriented family CEOs may support the prosperity of the company in the long run by investing resources in nurturing its reputation and social ties at the cost of promoting nepotism.

A third potential trade-off associated with the family's involvement in the business is the relational human capital trade-off between managerial skills and relational resources (Chung and Luo, 2013; Bennedsen and Fan 2014; Bennedsen et al., 2015; Carillo et al., 2015). In this case, the trade-off underlying the choice of who is to be entrusted with the leadership of the family business hinges on three key considerations. First, both the management's human capital of the business leader as well as the network of relationships of the family built over time by the founder and other family members are important factors in running a firm successfully¹. Second, family reputation and relationships are intangible assets that cannot be easily passed on, as a matter of routine, to professional managers outside the family circle. Third, the management's human capital available within the limited circle of family members tends to be, on average, lower than what can be secured

¹ As observed by a third-generation CEO of a successful Italian family company interviewed by the business historian Andrea Colli (2012, p. 253), "the most important thing my father passed on to me was not the company in itself, nor its financial good shape, nor the money and capital, nor even the business idea [...]. The most important thing he gave us was the reputation of the company, and with the reputation, contacts and personal relationships."

by entrusting the firm's leadership to unrelated managers (Bertrand and Schoar, 2006; Bloom and Van Reenen, 2010; Caselli and Gennaioli, 2013; Bennedsen and Fan, 2014; Carillo et al., 2015). In this scenario, hiring an external CEO selected from a large pool of professionally qualified candidates facilitates the avenue of enhancing the quality of management of the company, but this will happen at the expense of the relational capital of the firm. By contrast, entrusting the leadership to a family member allows to rely on a unique set of valuable assets, like family names and values, tacit knowledge and personal connections, that permit better and easier access to internal and external resources at the cost, however, of being constrained by a lower level of management human capital.

The trade-off between relational and managerial capital, although often overlooked by the current literature, can be of crucial importance for the relationship with subjects outside the company and access to external resources. In this paper, we examine the role of a family CEO's relational capital and external managers' managerial skills in the context of bank relationships². In particular, we investigate whether the relational and managerial human capital embodied in the family leadership of the company influences access to credit, distinguishing two major indirect and direct channels channels working through the production of soft information and the length of the bank-firm relationship, and the level of managerial skills of the CEO.

We proceed in two steps. First, we test whether the bank relationships of family firms with a family appointed CEO are more strongly dependent on the exchange of private soft information than those held by family firms managed by a professional CEO, and whether these relationships are longer lasting. Second, we investigate whether the likelihood of family firms experiencing

² As we do not have direct measures for relational capital and managerial skills, following the current literature on family management (Le Breton and Miller, 2005; Bertrand and Schoar, 2006; Bennedsen and Fan, 2014; Luo et al., 2014; Carillo et al., 2015; Zona, 2016), we assume that a family CEO is embodied with greater relational human capital than a professional manager external to the family, while the latter has (on average) higher managerial skills.

credit restrictions is directly affected by the managerial capital of professional CEOs and indirectly influenced by the relational capital of family managers by including first-step predicted values for the production of soft information and the creation of long-lasting lending relationships.

In our empirical analysis, we draw information about a firm's ownership, management and bank relationships from the EU-EFIGE/Bruegel UniCredit survey (Altomonte and Aquilante 2012). This survey covers a large sample of manufacturing firms in seven European countries, and provides detailed data on the type and importance of information required by banks for assessing the creditworthiness of a firm, the duration of the lending relationship with the main bank, the firm's credit demand, and its access to loans.

By way of preview, we find that family owned businesses run by family CEOs are significantly more likely to create soft-information-based and long-lasting lending relationships than in the case of family firms hiring external CEOs, a result which is consistent with the idea that relational capital does matter in shaping bank–firm relationships. These findings are robust to different definitions of soft-information-based lending ties and long-lasting lending relationships. Conversely, we do not find any evidence that the managerial capital of non-family professional executives has a significant impact on access to bank credit. The probability of experiencing credit restrictions in the bank lending market is not significantly different for family and non-family CEOs, thus suggesting that the higher managerial human capital of professional CEOs does not outweigh the advantages of family relational capital in bank–firm relationships. On the whole, therefore, the family relational capital of CEOs appointed within the family circle plays a significant and beneficial role in bank relationships which is not offset by adverse effects on access to credit due to (potentially) lower management skills.

Europe provides an ideal context to study the characteristics of family firms' lending relationships. First, in Continental Europe, family firms account for more than 85% of listed

companies and SMEs, and in the UK some of the largest publicly traded firms are controlled by families (Shleifer and Vishny, 1997; Claessens et al., 2000; Faccio and Lang, 2002). Second, as the European manufacturing sector consists mainly of small- and medium-sized businesses, investments are mainly financed through bank loans and the creation of strong and stable lending relationships is at the heart of the success and development of many companies (Gambini and Zazzaro, 2013; Minetti et al., 2015; Schafer et al., 2017; Andersson et al., 2017).

The rest of the paper is organised as follows. In Section 2, we review the related literature on family firms' relational capital and access to credit, and formulate our testable hypotheses. In Section 3, we describe the dataset and the variables employed in the regression analyses. Section 4 presents the econometric models used to test our hypotheses. In Section 5, we discuss our empirical results; and Section 6 concludes the paper.

2 Related literature and research hypotheses

Our research is primarily related to three aspects of the family business and banking literature, that consider the impact of family relational capital and management on the firm's performance, the determinants of soft information production, and the access to credit for family businesses.

The crucial role of a family firm's relational capital in the pursuit of a business enterprise has been well documented in the academic literature. Historical research reports many examples of successful business and industry ventures based on family relationships, in some cases promoted or cemented by arranged marriages, parenthood and affiliation to societies (Rose, 2000; Alfani and Gourdon, 2012; Braggion, 2011; Colli, 2012). Consistently, management and economic studies indicate that family companies invest large amounts of resources in nurturing interpersonal relations, and building webs of business and political contacts, and that family relational capital has an influence on leadership succession and performance (Sirmon and Hitt, 2003; Salvato and

Melin, 2008; Zahra, 2010; Bennesen and Fan, 2014). Other studies find that, in order to capture public resources, avoid expropriations, and improve their economic performance, family firms are more likely to develop political connections, both in emerging markets and developed countries (Faccio and Parsley, 2009; Amore and Bennesen, 2013; Bunkanwanicha et al., 2013), and that the succession of ownership and management within the family is more likely in politically connected family firms (Xu et al., 2015). Finally, consistent with the hypothesis of family firms trading off the benefits of a higher human capital of professional managers against the benefits of family relational capital of family managers, Bloom and van Reenen (2007) find that the quality of management of second-generation family owned enterprises with a family CEO is lower only if the succession is determined by primogeniture. In a similar vein, Carillo et al. (2015) find that the worst management quality of family managed firms is broadly limited to societies that are characterised by strong family values. Finally, considering a large sample of Taiwanese listed companies, Chung and Luo (2013) show that the profitability premium of appointing professional and talented CEOs external to the controlling family is mitigated, and even reversed, in firms where the controlling share of the family is large and for which the relational capital is arguably of greater importance.

Despite lending by banks being the major source of external financing for the greatest part of family businesses, the impact of a firm's leadership on bank-firm relationships is still a relatively unexplored issue. The finance literature has investigated the harshness of financing constraints for family firms, indicating that publicly traded family companies are significantly associated with lower investment cash flow sensitivity and lower cost of debt financing (Anderson et al., 2003; Andres, 2011; Pindado et al., 2011). Similarly, the banking literature has highlighted a beneficial effect of family ownership on the availability of credit, both in normal times and during the recent financial crisis, although the impact on the terms of a loan contract seems to be mixed. Bopaiah

(1998) analyses the availability and cost of credit to a large sample of US small-medium enterprises included in the National Survey of Small Business Finance (NSSBF). Following Petersen and Rajan (1994), she looks at the percentage of discounts offered to firms using trade credit as a proxy for restrictions in access to bank credit, and find that discounts offered to family owned enterprises are significantly larger than those offered to non-family firms. Using the same NSSBF data, Brau (2002) does not find any significant correlation between family ownership and loan contract terms (interest rate and collateral). By contrast, Voordeckers and Steijvers (2006) and Steijvers et al. (2010) find that family owned enterprises are more likely to pledge collateral for loans received, while Cucculelli and Peruzzi (2016) show that founder-run family businesses are subject to a deeper screening by banks than non-family owned companies.

D'Aurizio et al. (2015) and Stacchini and Degasperi (2015) consider access to credit and interest rates in Italian family firms. The former documents that after the Lehman Brothers' collapse, credit availability to family firms shrank significantly less than the amount of credit to non-family firms. What is more interesting, D'Aurizio et al. (2015) show that the average positive effect of a family firm's ownership on credit availability is almost entirely driven by banks that increased the use of soft information during the crisis, thus suggesting that the family firm's soft information advantages played a crucial role in limiting loan contraction in the quarters after Lehman's failure. Stacchini and Degasperi (2015) consider a sample of Italian manufacturing firms included in the EFIGE survey, and find that family ownership is associated with a significant interest discount (15 basis points), and that this discount is especially large (even up to 80 basis points) for bank-firm relationships in regions where social capital and trustiness is low, thus indicating that strong family ties are a worthy substitute for the lack of general trust in society.

A well-established result in banking literature is that the production of soft information about borrowers plays a fundamental role in lending relationships. Traditionally, the availability of

soft information is subsumed in the duration, exclusivity, or multiplicity of the lending relationship (Petersen and Rajan 1994, 1995). Recently, however, a growing number of studies have specifically explored the production of soft information by using data from surveys on borrowers/lenders, or from the bank's credit files (Scott, 2004; Uchida et al., 2012; Ogura and Uchida 2014; Uchida, 2014). Using information from interviews with loan officers of 11 banks in the Chicago area, Uzzi and Lancaster (2003) show that social closeness to, and familiarity with borrowers is a primary source for lenders of subjective private information and new knowledge. Bartoli et al. (2013), using survey data on Italian manufacturing firms, document that the likelihood of a firm considering production and acquisition of soft information as the main factor driving the choice of the main bank is significantly associated with the importance that the same bank attributes to soft information in granting loans. Finally, a number of studies have documented that centrality and availability of soft information to banks improves a firm's access to credit and increases a firm's investments (Chelli and Zazzaro, 2008; Liberti and Mian, 2009; Uchida et al., 2012; Ferri and Murro, 2015; Andrieu et al. 2017). In particular, using the EFIGE survey, Cosci et al. (2015) show that firms which are routinely involved in interviews with loan officers on the firm's policies and prospects, and also report business plans and financial targets to the bank, are less likely to suffer credit rationing, and are more likely to innovate (see Hernández and Martínez (2007) for the existence of rationing in lending relationship in a large sample of Spanish SMEs).

Motivated by the reviewed literature, we investigate whether family firms managed by family CEOs suffer more or less from credit constraints than family firms managed by professional CEOs and non-family firms by considering the relational and human capital channels. We distinguish two possible channels that may affect the extent of credit constraints, which are related to the CEO's family relational capital and the CEO's managerial skills. The first channel operates indirectly through the effect that family relational capital has on the production of soft information

and on the intensity of the lending relationship with the main bank. The second channel operates directly through the managerial skills of the CEO at the helm of the family business. More precisely, the following two hypotheses outline the two potential channels through which the involvement of family members in the management of the family business influences lending relationships and access to credit. Thus:

Hypothesis 1 (first channel). If family relational capital matters in lending relationships, family owned firms with a family CEO are more likely to maintain soft-information-based and longer-lasting lending relationships with their main bank, with positive effects on access to credit.

Hypothesis 2 (second channel). To the extent that family members have, on average, lower managerial skills than non-family professional CEOs, family firms run by family CEOs are, all else being equal, more likely to experience credit restrictions.

3 Data sources and variable definitions

3.1 Datasets

We draw information from two sources: (1) the EU-EFIGE Bruegel-UniCredit survey on “European Firms in a Global Economy”; (2) the BvD-Amadeus database. The EFIGE survey collects information about a firm’s ownership, its governance, financial condition and lending relationships for a representative sample (at the country and industry level) of almost 15,000 manufacturing firms in seven European countries: Austria, France, Germany, Hungary, Italy, Spain and the UK.³ The survey was conducted in early 2010, and information is mostly collected as a

³ In the empirical estimation, the number of German firms has been significantly reduced because of missing information on question F16.

cross-section for the year 2008, although some questions cover the period 2007–2009. We merged EFIGE survey data with financial data provided by BvD-Amadeus, the most comprehensive and widely used source of financial information for public and private enterprises in Europe.

3.2 Variable definitions

Table 1 reports the complete list of the dependent and independent variables used in the empirical analysis, their definitions and descriptive statistics. Here, we provide a detailed description of their measurement.

3.2.1 Family ownership and control

Despite the widespread literature on family businesses, there is no clear consensus on how family firms should be defined. Theoretical and empirical studies have proposed definitions based on ownership shares, family involvement in the business, and some combinations of the two criteria (La Porta et al., 1999; Faccio and Lang, 2002; Anderson and Reeb, 2003; Barontini and Caprio, 2006; Villalonga and Amit, 2006). In this study, we distinguish between family owned and managed businesses on the basis of self-reported information in the questionnaire. In particular, based on questions A20 and A21 of the EFIGE survey,⁴ we classify (1) family owned firms as those companies directly or indirectly controlled by an individual or a family (FAM_FIRM); (2) family managed firms as those companies run by the individual who owns or controls the firm, or by a member of the controlling family (FAM_CEO). As reported in Table 1, more than 70% of the

⁴Questions A20 and A21 read as follows:

A20. *Is your firm directly or indirectly controlled by an individual or a family-owned entity? (yes/no).*

A21. *Is the CEO of your firm (i) the individual who owns or controls the firm, or a member of the family that owns/controls it? (ii) a manager recruited from outside the firm? (iii) a manager appointed within the firm?*

whole sample is made up of family owned enterprises, and 88% of such firms promote family members as CEOs (Table 2).

3.2.2 *Information and lending relationships*

Banks routinely collect hard and soft information on borrowers' businesses and creditworthiness during a lending relationship. Hard information consists of quantitative data that can be verified and easily communicated, for instance, balance sheet data. Soft information consists of subjective knowledge acquired by lenders in the course of frequent face-to-face interactions with borrowers. Lending relationships make use of these types of information to a different degree.

In the EFIGE survey, firms are requested to indicate the type of information that they normally provide to their main bank in the screening and monitoring process. Specifically, question F16 reads as follows:

F16. Which type of information does the bank normally use/ask to assess your firm's creditworthiness? (a) collateral (yes/no); (b) balance sheet information (yes/no); (c) interviews with management on a firm's policy and prospects (yes/no); (d) business plan and firms' targets (yes/no); (e) historical records of payments and debt service (yes/no); (f) brand recognition (yes/no); (g) other (yes/no).

Starting from this categorisation, we build two dummy variables: (1) HARD_INFO, which assumes a value of 1 if the bank asks one or more of information categories (b), (d) and (e), and zero otherwise; (2) SOFT_INFO, which assumes the value of 1 if the bank uses interviews with the management on the firm's policy and prospects to assess creditworthiness of the firm's

(category (c)), and zero otherwise.⁵ In the basic analysis, we exclude the categories “brand recognition” and “other” from the definition of the two types of information, because they are not clearly described in the survey. We also exclude “collateral” because it cannot be considered as a screening technology. However, to the extent that brand recognition captures the firm’s reputational capital, as a measure of robustness, we add category (f) to soft information (SOFT_INFO_2), while we include collateral guarantees in the definition of hard information (HARD_INFO_2).

Descriptive statistics indicate that hard information is almost universally used by lenders in their lending relationships with borrowers, as more than 90% of the companies surveyed are required to provide this type of information, either when we include or exclude collateral guarantees from the definition of hard quantitative data (HARD_INFO and HARD_INFO_2). By contrast, the use of soft information is limited to half the surveyed firms. It is interesting to note that the share of non-family owned and non-family managed firms transmitting SOFT INFORMATION to banks is unconditionally slightly larger than that of family owned and family managed businesses (Table 3 panel A).⁶

In addition to the type of information, we measure the relational characteristics of the bank–firm relationships in terms of duration: specifically, question F11 of the survey requires firms to report the number of years the current bank has been the firm’s main bank (DURATION). The average length of the lending relationships with main banks in our sample is 15 years, and it is statistically greater for family owned firms (16.8 years) than for non-family owned businesses (13.3

⁵ Similar classifications are introduced by Berger and Udell, 2006; Uchida et al., 2012; Bartoli et al., 2013; Cosci et al., 2015.

⁶ Possibly, this may reflect specific characteristics of non-family firms and family firms managed by professional CEOs, such as their stronger involvement in R&D, innovation, internationalization and other non-traditional projects, which require the production of soft information during the screening process by banks. For this reason, in the multivariate analysis, we condition the relationship between family ownership/management and soft information on a large number of firm-specific characteristics.

years). Moreover, in line with our Hypothesis 1, family firms run by family CEOs have significantly longer lasting lending relationships than those run by managers external to the controlling family (17.2 versus 13.9 years). As a test of robustness, we also consider a different proxy for long-lasting relationship with the bank, which derives from a survey question about the factors driving the firm's choice of the main bank. In this case, LONG_LASTING_REL is a variable that takes the value 1 if the firm indicates that the key reason for the choice of the main bank is its long-lasting relationship with the firm, and 0 otherwise.⁷ The univariate tests reported in Table 3 indicate that the share of family owned firms selecting this answer is significantly lower than that of non-family owned businesses. On the contrary, the percentage of firms run by a family CEO is consistently higher than that of firms run by an external CEO, thus further supporting Hypothesis 1.

3.2.3 Firms' access to credit

In order to assess a firm's access to credit, we consider both the probability of the firm seeking credit and the likelihood of the firm experiencing a credit restriction. In particular, we rely on the following two questions of the EFIGE survey:

F13. *During the last year, was the firm willing to increase its borrowing at the same interest rate of its current credit line? (i) yes; (ii) no.*

⁷ Precisely, question F12 of the EFIGE survey asks:

F12: *Which factors are key in the choice of a main bank? (i) the bank offers competitive services and funding; (ii) the bank offers efficient internet services; (iii) the bank's lending criteria is clear and transparent; (iv) the bank is conveniently located; (v) the bank has an extensive international network; (vi) the bank offers also a consultancy on strategic financial decisions; (vii) the bank has a long-lasting relationship with the firm; (viii) the bank has flexible procedures/not constrained by red tape; (ix) it was the group's main bank.*

F14. *During the last year, did the firm apply for more credit? (i) yes, applied for it and was successful; (ii) yes, applied for it and was not successful; (iii) no, did not apply for it.*

We classify firms as demanding bank credit ($DEMAND = 1$) if they respond (i) to the question F13, and either (i) or (ii) to question F14, and non-demanding credit ($DEMAND = 0$) if they respond either (ii) to the question F13 or (iii) to question F14. Then, among the firms that demand bank credit, those firms that unsuccessfully applied for it (i.e., those answering (ii) to question F14), are classified as credit restricted ($RESTRICTED = 1$).

Since firms desiring additional credit from banks but not applying for it (i.e., firms that respond “yes” to F13 and (iii) to F14) are arguably those that are discouraged from doing this in anticipation of a credit denial, we checked the robustness of the findings to this potential selection effect by selecting the sample firms on the basis of their willingness to borrow from banks ($DESIRE$, which takes the value 1 if the firm responds yes to F13 and zero otherwise). Then we use a wider definition of credit restriction, which includes potentially discouraged borrowers from among the restricted ones. Precisely, we use $RESTRICTED_2$ taking the value 1 if the firm responds (ii), or (iii) to F14, and zero if it responds (i).

From panel A of Table 3, 29% of firms in our sample have a positive demand for credit, and this percentage is statistically the same regardless of the ownership and management structure. Among firms demanding loans, 30% of them experience a credit restriction.⁸ Unconditionally, non-family owned firms, and family firms run by professional CEOs, are more likely to face credit rationing than family firms and family businesses with active family involvement, although the

⁸ Credit restricted firms are almost 4% of the whole sample of companies.

difference is statistically non-significant. However, when discouraged borrowers are included in the group of the restricted ones (RESTRICTED_2), family ownership significantly reduces the probability of firms experiencing credit restrictions.

3.2.4 Control variables

In order to correctly identify the impact of family leadership on a firm's lending relationship and access to credit, we control for a large set of possible confounding effects. These controls also help in mitigating the omitted variable concern associated with the cross-sectional structure of our dataset.⁹

First of all, we consider a number of standard firm-specific characteristics and balance sheet indicators. In particular, we control for: (1) the firm's age, measured by the number of years from its inception (AGE); (2) the number of workers employed in the company as proxy for the firm's size (SIZE); (3) the firm's degree of innovativeness, measured by a dummy variable that is equal to 1 for companies that invested in R&D in the 3-year period covered by the survey, and zero otherwise (R&D); (4) the company's degree of internationalisation, measured by a dummy variable equal to 1 for firms selling part of their production abroad, and zero otherwise (EXPORT); (5) the company's level of indebtedness, proxied by the debt ratio computed as total debt over total assets (DEBT_RATIO); (6) the firm's liquidity ratio, measured as current assets over current liabilities (LIQUIDITY_RATIO); (7) the differential profitability of the company (DIFF_ROS) measured by the difference between the firm's return on sales and the median return on sales of its industry (Villalonga, 2004). As SOFT_INFO and HARD_INFO refer to the three-year period 2007–2009, all the balance sheet variables are computed as average values for the same period.

⁹ We try to partially address the omitted variables and measurement issues characterizing cross-section regressions also through an instrumental variable approach.

Then, we control for the CEO's age, as proxy for both his/her experience and reputation (CEO_AGE), and gender, using a dummy that is equal to 1 for companies run by male CEOs (CEO_MALE), to take into account possible discrimination effects in access to credit for female-managed businesses (Bellucci et al., 2010; Alesina et al., 2013). Finally, in order to fully account for industry- and country-specific effects, we include country and industry dummies.

From the univariate analysis reported in panel B of Table 3, family owned businesses, on average, are older, smaller, less indebted, less innovative and export-oriented than non-family firms. Within family firms, the ones that keep management in the hands of family members are, on average, smaller and less innovative and export-oriented than family firms hiring professional CEOs.

4 Empirical model

In order to test our research hypotheses, we follow a two-step approach. First, we test whether the relational capital embodied in the firm's family management has a positive impact on the production of soft information and the length of the bank–firm relationship. Second, we investigate whether the likelihood of family firms experiencing credit restrictions is affected by the family management, directly and indirectly through the effects on soft information intensity and long-lasting lending relationships (by including the predicted values obtained in the first step).

As unobserved factors might simultaneously affect the use of soft information, the length of the borrower–lender relationship and the restriction of credit, our two-step estimates may suffer from endogeneity problems. Moreover, the observed pattern of credit rationing could influence the length and type of lending relationships, thus giving rise to reverse causality concerns. To address these issues, in the first step of our estimations, we include a set of instrumental variables for the length of lending relationships and the use of soft information. Following Ferri and Murro (2015),

we create a firm-level index of closeness of the bank–firm relationship (CLOSENESS), given by the average of the dummies built on answers (iv) and (vi) of question F12 of the EFIGE survey (i.e., the choice of the main banks because of a convenient location or the offering of consultancy services on strategic financial decisions)¹⁰. As these answers measure the importance that a firm places on the ex-ante relational features of its main bank, a high value of this index identifies firms that look for closer lending relationships, thus ending up with a higher use of soft information and a creation of longer bank–firm relationships. Then, as additional instruments, we use the average levels of soft information production (REGIONAL SOFT), and length of the bank–firm relationships (REGIONAL DURATION, expressed in logarithm) computed for the group of firms located in the same region¹¹. These indicators proposed by Caprio et al. (2007), and further adopted by Laeven and Levine (2009) and Ferri and Murro (2015), may capture local factors affecting the production of soft information and the length of the bank–firm relationship, without influencing the likelihood of the credit rationing status of a given firm.

4.1 *Relational capital and lending relationships*

According to Hypothesis 1, family firms appointing a family member as CEO are more likely to maintain soft-information-based and long-lasting lending relationships with their main bank than family firms hiring professional CEOs.

In order to test this hypothesis, we estimate a bivariate probit model which takes into account the joint distribution of the two dependent variables SOFT_INFO and HARD_INFO, and an OLS

¹⁰ The question reads out as follows: “Which factors are key in the choice of a main bank? (i) the bank offers competitive services and funding; (ii) the bank offers efficient internet services; (iii) the bank’s lending criteria is clear and transparent; (iv) the bank is conveniently located; (v) the bank has an extensive international network; (vi) the bank offers also a consultancy on strategic financial decisions; (vii) the bank has a long-lasting relationship with the firm; (viii) the bank has flexible procedures/not constrained by red tape; (ix) it was the group’s main bank”.

¹¹ At the NUTS 3 level of aggregation.

model for the length of the lending relationship with the main bank¹². The choice of a bivariate probit model is driven by the evidence in the banking literature that the use of hard and soft information is complementary in lending relationships (Uchida et al., 2006; Bartoli et al., 2013), and that more than 90% of bank relationships in our sample are characterised by the use of hard information.

Specifically, we test the following bivariate probit model:

$$\text{SOFT_INFO}_i = 1[\theta_1 + \alpha_1 \text{FAM_FIRM}_i + \beta_1 \text{FAM_FIRM}_i * \text{FAM_CEO}_i + \gamma_1 X_i + \varphi_1 Z_i + \varepsilon_{1i} > 0] \quad (1a)$$

$$\text{HARD_INFO}_i = 1[\theta_2 + \alpha_2 \text{FAM_FIRM}_i + \beta_2 \text{FAM_FIRM}_i * \text{FAM_CEO}_i + \gamma_2 X_i + \varphi_2 Z_i + \varepsilon_{2i} > 0] \quad (1b)$$

where X is the set of control variables, Z is the set of instrumental variables, and $\varepsilon = (\varepsilon_1, \varepsilon_2)$ is assumed to be independent of explanatory variables with a bivariate normal distribution:

$$\begin{pmatrix} \varepsilon_1 \\ \varepsilon_2 \end{pmatrix} \sim N \begin{pmatrix} \varepsilon_1 \\ \varepsilon_2 \end{pmatrix} = \left\{ \begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 & \rho \\ \rho & 1 \end{pmatrix} \right\}$$

and the following OLS model:

$$\text{DURATION}_i = \theta + \alpha \text{FAM_FIRM}_i + \beta \text{FAM_FIRM}_i * \text{FAM_CEO}_i + \gamma X_i + \varphi Z_i + v_i \quad (2)$$

where X is the set of control variables, Z is the set of instrumental variables, and v_i is the error term.

The differential effect that active family involvement in the company's management has on the shape of the lending relationship with the main bank is captured by the β coefficients in Equations (1a) and (2), while the effects of hiring professional managers and family ownership on

¹² The length of the bank–firm relationship is expressed in logarithm (Herrera and Minetti, 2007). Then, as a robustness, we estimate a probit model for the probability that firms consider maintaining a long-lasting relationship the key factor in the choice of the main bank.

lending relationships are captured by α and $(\alpha + \beta)$, respectively. Therefore, Hypothesis 1 is verified if β_1 and β in Equations (1a) and (2) are significantly greater than zero.

4.2 Management human capital and access to bank lending

The second step of our investigation aims at analysing whether the likelihood of family firms experiencing credit restrictions is affected (directly) by the managerial capital of professional CEOs and (indirectly) by the relational capital of family managers, measured by the predicted likelihood of maintaining soft-information-based lending relationships and the predicted length of the lending relationships with the main bank as derived from the first step.

Since firms with a positive demand for credit in the period might not be randomly drawn from the population of surveyed firms, we estimate a binary response model with sample selection (Heckman, 1979), where the selection mechanism results from firms applying for bank financing¹³. Specifically, we estimate:

$$\text{DEMAND}_i = 1[\theta_1 + \alpha_1 \text{FAM_FIRM}_i + \beta_1 \text{FAM_FIRM}_i * \text{FAM_CEO}_i + \delta_1 \widehat{\text{LENDING_REL}}_i + \gamma_1 X_i + \varphi Z_i + \varepsilon_{1i} > 0] \quad (3a)$$

$$\text{RESTRICTED}_i = 1[\theta_2 + \alpha_2 \text{FAM_FIRM}_i + \beta_2 \text{FAM_FIRM}_i * \text{FAM_CEO}_i + \delta_2 \widehat{\text{LENDING_REL}}_i + \gamma_2 X_i + u_{2i} > 0] \quad (3b)$$

where $\widehat{\text{LENDING_REL}}_i$ denotes, alternatively, the predicted values obtained from the first-step estimation of Equations (1a)–(1b), i.e., $\widehat{\text{SOFT_INFO}}_i$, or Equation (2), i.e., $\widehat{\text{DURATION}}_i$. X is the set of exogenous covariates and Z the exclusion restriction variables – cash flow over total assets (INTERNAL CAPITAL) and firm growth (ΔSALES) – which are assumed to affect the probability

¹³ In order to overcome potential heteroskedasticity problems arising from the inclusion of predicted values in non-linear models, we also estimate the credit rationing status through a simple OLS without sample selection and through the standard Heckman selection model with linear probability for credit restrictions. Estimation results are discussed in Section 5.3.2.

of demanding additional borrowing without directly influencing access to credit (Brown et al., 2011; Freel et al., 2012)¹⁴.

Our coefficients of interest are δ_2 , for testing the indirect impact of a family CEO's relational capital on the family firm's access to credit (Hypothesis 1), and α_2 and β_2 , for determining the effect of a professional CEO's managerial skills on the probability of family firms experiencing credit restrictions (Hypothesis 2). Specifically, Hypothesis 1 and Hypothesis 2 are verified if, respectively, δ_2 is significantly lower than zero, and β_2 is significantly larger than zero.

5 Results

5.1 Step 1: Family management and lending relationships

Estimation results for the lending relationships models (1a)–(1b) and (2) are presented in Table 4. Columns (1)–(4) report the marginal effects of explanatory variables on the probability of a firm's creditworthiness being assessed by banks based on soft and hard information. First, note that the estimated correlation coefficients are positive and statistically significant at 1% level. This implies that the use of hard and soft information is influenced by some common unobservable factors and validates the choice of a bivariate model, while restricting the residuals' correlation to zero by using two distinct probit models would yield to biased and inconsistent estimates (Lollivier, 2001).

With regard to our key explanatory variables, the estimated coefficient of FAM_FIRM in columns (1) and (2) is statistically not different from zero. This indicates that family ownership does not affect the probability of firms being required to submit a particular type of information

¹⁴ Firms experiencing high levels of cash flow and positive variations of sales may rely on alternative sources of finance, such as internal capital and trade credit, that may be preferred to bank loans. Hence, both variables can be expected to be negatively associated with the probability of demanding additional bank financing. By contrast, following the recent literature (Brown et al., 2011; Freel et al., 2012), we expect a non-significant impact of internal capital and sales variation on the bank lending decisions and, consequently, on the likelihood of firms experiencing credit restrictions.

during the bank's monitoring process, and that family and non-family owned businesses have the same likelihood of creating lending relationships based on soft and hard information. However, when we distinguish between family firms managed by family CEOs and family firms hiring professional managers external to the controlling family, we find that the family leadership is associated with a heavy exchange of soft information with banks. As reported in columns (3) and (4), family firms appointing a family member as CEO are 12.5% more likely to benefit from soft-information-based lending relationships relative to family firms managed by professional CEOs, while these latter are 14.3% less likely to use soft information than non-family owned firms. By contrast, the active involvement of family members in the firm's management has no significant impact on the use of hard information.

Looking at the other firm-specific characteristics, the results in columns (1)–(4) show that larger companies are significantly associated with a higher probability of being required both soft and hard information. This finding is in line with the literature (Uchida et al., 2012; Bartoli et al., 2013; Ogura and Uchida, 2014), and it is not surprising if we consider that larger companies typically ask for a larger amount of credit, thus inducing banks to call for more accurate information, both hard and soft, to establish the exact business prospects and related credit risks. Consistently, we find that financially sound companies with a high share of liquid assets, are less likely to be asked to provide both soft and hard information, and that a company's profitability reduces the probability of being asked for soft information. By contrast, firms engaged in exports and research and development – i.e., companies investing in informationally opaque activities – are more likely to base their lending relationship on the exchange of soft information. Finally, we find that the CEO-specific characteristics, age and gender, do not significantly impact on the type of relationship built with the main bank.

Moving on to the length of the bank–firm relationship, columns (5) and (6) report estimation results of Equation (2). Family owned enterprises have, on average, longer-lasting relationships with the main bank relative to non-family owned businesses. However, when family businesses are classified on the basis of the management type, we find that only family firms run by family CEOs tend to maintain long-lasting lending relationships. In particular, while family businesses promoting family management are associated with longer lending relationships (the estimated coefficient is 0.123, statistically significant at 99%), for family firms hiring professional managers, the duration of the lending relationships is not statistically different from that of non-family businesses.

With regard to the other control variables, coefficient estimates indicate that the length of the bank–firm relationship significantly decreases with the size of the company, and increases with its age¹⁵. Consistent with the idea that well-performing firms are less interested in maintaining long-lasting lending relationships, we find a negative and statistically significant coefficient for the variable DIFF_ROS. By contrast, innovative and highly indebted companies turn out to have shorter lending relationships. Finally, it is interesting to note that female CEOs are significantly associated with longer relationships with their main lender. This result is consistent with the idea of gender discrimination in the credit market (Bellucci et al., 2010; Alesina et al., 2013) to which female-run companies try to respond by maintaining close lending ties with their main bank.

Finally, the strong statistical significance of CLOSENESS, REGIONAL SOFT and REGIONAL DURATION supports the validity of our instruments for the length of the lending

¹⁵ A 1% growth in the number of employees is associated with a 6-month reduction in the length of the bank–firm relationship, while a 1-year increase in the company’s age increases the duration of the lending relationship by almost 3 months.

relationship and the production of soft information¹⁶. The CLOSENESS indicator and the regional measure of the use of soft information, and length of the bank–firm relationship (REGIONAL SOFT and REGIONAL DURATION) positively affect the probability of being required for soft information during the bank screening process and the length of the bank–firm relationships, while reducing the probability of experiencing hard information-based lending.

To sum up, our results clearly support Hypothesis 1. Family businesses run by family CEOs are significantly more likely to maintain long-lasting relationships with their main banks based on the exchange of private soft information in comparison with family firms managed by CEOs external to the owner family.

5.2 Step 2: Family management and access to credit

The second step of our investigation aims at analysing whether, and through which channels, the family management affects a family firm’s access to credit. Specifically, we study whether the likelihood of family firms experiencing credit restrictions is affected directly by the presence of professional CEOs external to the family (Hypothesis 2), and indirectly by the relational capital of family members involved in the management captured by the predicted values of $\widehat{\text{SOFT_INFO}}$ and $\widehat{\text{DURATION}}$ obtained from the first step estimations of models (1a)-(1b) and (2) (Hypothesis 1).

As described in Section 4.2, we apply the Heckman selection procedure to eliminate the sample selection bias arising from the fact that not all firms in the sample have a positive demand for credit, and that unobservables affecting the probability of applying for credit can be correlated with unobservables affecting the likelihood of experiencing credit restriction. Therefore, we first

¹⁶ The strength of the chosen instruments is further confirmed by the F-test computed on a standard 2SLS model for the estimation of soft information production (and length of the bank–firm relationship) in the first stage, and credit rationing in the second stage. The F-tests for the set of soft-information and duration instruments are, respectively, 23.50 and 29.27.

estimate a probit model for the firm's demand for credit and then we add the inverse Mills ratio to the estimate of the likelihood of firms experiencing a credit restriction. Table 5 reports our main estimation results.

First, it is interesting to note that exclusion restriction variables, INTERNAL_CAPITAL and Δ SALES, are both significantly and negatively correlated with the demand for bank credit. In addition, the inverse Mills ratio is negative and highly significant, suggesting that there is self-selection into the credit market: firms that participate in the credit markets are also firms that are less likely to experience credit restrictions. This means that the choice of a selection model is appropriate, and that the estimation of a simple probit model would have produced downward-biased results.

Starting with the selection equation (Pr(DEMAND)), marginal effects reported in Table 5 indicate that both family ownership and the direct involvement of the family in the company's management reduces the likelihood of demanding bank credit. More specifically, family-owned firms are 2.9% less likely to apply for a bank loan than non-family owned businesses (column 1), while family firms run by family CEOs are 3.6% less likely to demand additional credit than family businesses managed by professional directors (column 3). These results run contrary to the idea that family firms are, *ceteris paribus*, more likely to rely on bank credit due to their lower ability and willingness to access capital markets relative to widely held corporations. However, it supports survival and reputational theories: in order to pass a financially stable company into the hands of future generations, family owners and managers are less likely to draw on external bank financing.

Regarding the predicted values of soft information production and bank-firm relationship length, estimation results indicate that the existence of a long-lasting lending relationship (DURATION) significantly reduces the probability of firms seeking credit (columns 5 and 7), presumably because they can rely on larger credit lines or because they shy away from possible

hold up problems. By contrast, the exchange of private soft information in the relationship with the main bank is not significantly associated per se with credit demand.

Finally, other firm-specific characteristics significantly impact on a company's desire for additional borrowings. First, consistent with a firm's lifecycle theories, older businesses are often characterised by either lower market and investment opportunities or higher capacity to access other sources of external finance, resulting in being less likely to demand bank credit. In the same way, more profitable and liquid companies are significantly associated with a reduced likelihood of requiring additional financing. By contrast, large, highly indebted, innovative and export-oriented firms are significantly more likely to approach banks for additional credit lines.

Moving on to our outcome equation on credit restriction, the marginal effects reported in Table 5 indicate that neither firm ownership nor management significantly affect the likelihood of experiencing a credit restriction directly. We do not find evidence supporting the idea that banks value professional leadership more than family management, as both β_2 and α_2 coefficients are not statistically different from zero. By contrast, the creation of soft-information-based lending ties results in a lower probability of being restricted in access to credit. In particular, as reported in columns (2) and (4), companies required to provide soft information during the bank screening process reduce the probability of experiencing credit restrictions by more than 12%. Different findings are obtained for the length of the bank–firm relationship, as the coefficient for $\widehat{DURATION}$ is not statistically different from zero. These results suggest that, while the managerial capital of professional CEOs does not significantly affect the lending decisions of banks, the relational capital embodied in the family leadership of the company indirectly reduce the credit rationing status through the production of soft information.

With regard to the other control variables, consistently with the current literature on SMEs' access to credit, we find that firm's size reduces the probability of experiencing credit restrictions

(Bartoli et al., 2013; Ferri and Murro, 2015). In addition, once controlled for the self-selection bias, innovative and export-oriented firms are less likely to be restricted in access to credit, while contrary to the hypothesis of female discrimination in credit markets, we find that when the firm's leadership is in the hands of a male, the likelihood of credit restriction is slightly higher.

Summing up, our findings on credit restrictions support Hypothesis 1 of a relational capital channel, while they do not support Hypothesis 2 of a direct negative impact of family CEOs due to their (supposed) lower entrepreneurial human capital. In fact, the active involvement of family members in the management of the company has no significant influence on the firm's access to credit. Thus, the managerial capital of professional CEOs does not directly impact on the lending decisions of banks. By contrast, the stronger use of relational lending by family firms run by family CEOs suggests that if there is a systematic CEO effect on a family firm's access to credit, this will be in favour of family CEOs. This result confirms the existence of an indirect effect of a family CEO's relational capital on the credit rationing status that operates through the exchange of soft information in the lending relationship. This finding is also consistent with D'Aurizio et al. (2015) who document the beneficial effects of private soft information on credit availability to family firms during the crisis.

5.3 Robustness tests

5.3.1 Alternative measures of information production and lending relationship length

As stated earlier, the main measures of soft and hard information employed in the baseline model do not consider brand recognition and collateral from the set of information that banks can demand from their borrowers. In Table 6, we report first-step estimation results by considering alternative measures of soft and hard information that include these two elements. In particular, in the model reported in columns (1) and (2), SOFT_INFO_2 assumes the value 1 if the bank uses interviews

with the management, and/or the recognition of the firm's brand as sources of information on the firm's merit for credit. which assumes the value 1 if the bank, besides balance sheet information, business plan and historical records of repayments, requires firms to pledge collateral. Finally, columns (5) and (6) report results for a bivariate probit model for `SOFT_INFO_2` and `HARD_INFO_2`. The results broadly reproduce our main findings: the marginal effect on the interaction term `FAM_FIRM × FAM_CEO` is positive and statistically significant, suggesting that the active involvement of family members in the company's management is associated with a 12.5% greater probability of transmitting soft information in the relationship with their main bank relative to family firms that are run by professional CEOs.

In column (7), we estimate a probit model on the probability of firms being required only for soft information in the bank's screening process, where `ONLY_SOFT_INFO` is an indicator assuming the value 1 if `SOFT_INFO = 1` and `HARD_INFO = 0`, and the value 0 in all the other cases. Our results further corroborate Hypothesis 1, showing that family firms conducted by a family member are 2% more likely to use soft information as the unique source of information with the main bank than family firms with professional managers. With respect to the other control variables, the firm's size is negatively and significantly associated with the probability of using only soft information, while as the age of the firm increases, the probability of basing the lending relationship with the main bank on private soft information also increases.

Finally, in column (8) of Table 6, we consider `LONG_LASTING_REL` as a different proxy for long-lasting relationship with main banks. Once again, results are consistent with Hypothesis 1, showing that family CEOs have a higher propensity than professional CEOs to consider the long-lasting relationship with the main bank a source of value for the firm.

In Table 7, we report the second-step estimation results obtained by considering the predicted values of the alternative measures of soft information and lending relationship length¹⁷. The presented marginal effects confirm our previous findings. First, as the interaction between the FAM_FIRM and FAM_CEO dummies is not statistically significant, we reject the hypothesis that banks value professional management more than family management in their credit decisions. Hence, family firms' management does not affect credit availability directly. On the contrary, the relational capital embodied in family CEOs seems to indirectly reduce the credit rationing status, through both the production of soft information and the creation of long-lasting lending relationships. In particular, as reported in column (2), the likelihood of being rationed by banks gets reduced by 12.4% when companies are asked to provide soft information, including brand recognition ($\widehat{\text{SOFT_INFO_2}}$). This result remains statistically significant when we consider the predicted values of the stricter definition of soft information production, i.e., $\widehat{\text{ONLY_SOFT_INFO}}$. In this case, the probability of experiencing credit restrictions decreases by 10.4% (column 4). Finally, unlike the baseline measure of lending relationship length (DURATION), the $\widehat{\text{LONG_LASTING_REL}}$ variable significantly reduces the credit rationing status. The estimated marginal effect is negative and statistically significant (-0.018^*).

5.3.2 OLS and Heckman selection with linear probability model

As the inclusion of predicted values in non-linear models may generate heteroskedasticity problems (Lee et al., 1980; Wooldridge, 1997), we further estimate the credit rationing status either through

¹⁷ In columns (1)–(2), $\widehat{\text{SOFT_INFO_2}}$ indicates the predicted probabilities obtained from the first-step estimation of Equations (1a)–(1b) with SOFT_INFO_2 and HARD_INFO as dependent variables. Results are qualitatively and quantitatively similar when we consider the predicted probabilities obtained from the estimation of a bivariate probit model with SOFT_INFO_2 and HARD_INFO_2 as dependent variables.

a simple OLS without sample selection and through the standard Heckman selection model with linear probability for credit restrictions.

The estimation results reported in Table 8 broadly confirm our findings. Both the OLS and the Heckman selection model indicate that the professional CEO's managerial capital does not directly affect the firm's access to credit, as the interaction between the FAM_FIRM and the FAM_CEO dummies is always not statistically significant. By contrast, the relational capital of family managers indirectly affects the experience of credit restrictions through the production of soft information and the creation of long-lasting lending relationships. In particular, the coefficients reported in columns (1)–(4) of Table 8 indicate that, in the OLS estimation, the predicted values of soft information production and the length of the lending relationship are negatively associated with the credit rationing status¹⁸. Conversely, in the Heckman selection model (columns 5–12 of Table 8), only the creation of soft-information-based lending relationships ($\widehat{\text{SOFT_INFO}}$ and $\widehat{\text{SOFT_INFO_2}}$) and the choice of a main bank because of a long-lasting relationship appear to significantly reduce the experience of credit restrictions ($\widehat{\text{LONG_LASTING_REL}}$), while the length of the lending tie is not statistically significant ($\widehat{\text{DURATION}}$).

5.3.3 *Alternative measures of credit rationing*

In the earlier analysis, we have considered firms that desire additional credit but do not apply for it, as firms whose credit demand is zero. In fact, to the extent that these firms can be discouraged from applying for credit in anticipation of the high probability of experiencing rejection, it could be reasonable to include them in the group of credit-restricted firms.

¹⁸ The estimation results obtained with the inclusion of ONLY $\widehat{\text{SOFT_INFO}}$ are not reported for reasons of space. They are consistent with our previous findings, and are available upon request.

In order to address this concern, we check the robustness of our findings by employing a different selection equation and a larger definition of credit rationing. Specifically, we estimate the likelihood of credit restriction on the sample of firms that seek additional bank credit (that is, firms that respond “yes” to the question F13, or for which $DESIRE = 1$), considering discouraged borrowers (i.e., firms that declared not having applied for credit although desiring it, see question F14) as firms whose access to credit is restricted ($RESTRICTED_2 = 1$).

Estimation results reported in Table 9 broadly confirm our main findings in Table 5. Both FAM_FIRM and $FAM_FIRM \times FAM_CEO$ are not statistically significant. Hence, the supposedly higher management capital of professional CEOs does not directly affect a firm’s access to credit. By contrast, the provision of private soft information and the establishment of long-lasting lending relationships are negatively – and significantly – associated with the likelihood of experiencing credit restriction. Firms using soft-information-based lending relationships are 11.3% less likely to be restricted by banks. This percentage remains statistically significant when we adopt the extended definition of soft-information ($\widehat{SOFT_INFO_2}$), with the probability of experiencing credit restrictions reducing more than 11% (column 4)¹⁹. Finally, companies having long-lasting lending relationships with their main banks are 2% less likely to be credit restricted. Hence, the indirect effect of a family CEO’s relational capital on family firms’ access to credit, that operates through the production of soft information and the creation of long-lasting lending relationships, is further confirmed.

6 Conclusions

¹⁹ To save space, the estimation results obtained with the inclusion of $ONLY_SOFT_INFO$ are not reported here. They are available from the authors upon request.

In this paper, we explored the impact of the relational and management human capital of a family firm's management on a family firm's lending relationships and access to bank credit. Consistent with the hypothesis that the relational capital embodied in the family leadership influences positively the lending relationships with the main bank, our results indicate that family firms appointing family CEOs are more likely to create soft-information-based and long-lasting lending ties, and that this indirectly improves their access to credit. By contrast, we do not find any significant evidence about the supposed positive effect of external CEOs on credit availability, as having family executives does not impact negatively on a firm's access to bank lending.

Overall, our results support the idea that the reputation and the social and economic relationships built over time by the family and embedded in the family CEO's leadership are important factors for bank–firm relationships. Family relational capital positively affects the creation of soft-information-based and long-lasting lending relationships, and in this way, reduces the likelihood of experiencing credit restrictions.

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Table 1
Variable definitions and summary statistics.

Variable	Definition	Mean	Std. Dev.	Obs.
FAM_FIRM	Dummy variable equal to 1 if company i is directly or indirectly controlled by an individual or a family owned entity, and zero otherwise. Source: EU-EFIGE survey	0.70	0.46	14727
FAM_CEO	Dummy variable equal to 1 if the CEO of company i is the owner of the company or a member of the controlling family, and zero otherwise. Source: EU-EFIGE survey	0.63	0.48	14727
SOFT_INFO	Dummy variable equal to 1 if company i is required to provide soft information (interviews with management on firm's policy and prospects) in the screening process, and zero otherwise. Source: EU-EFIGE survey	0.56	0.50	6863
HARD_INFO	Dummy variable equal to 1 if company i is required to provide hard information (balance sheet information, business plan and firms' targets, historical records of payments and debt service) in the screening process, and zero otherwise. Source: EU-EFIGE survey	0.92	0.27	6875
DURATION	Length (in number of years) of the bank-firm relationship. Source: EU-EFIGE survey	15.85	13.81	6757
SOFT_INFO_2	Dummy variable equal to 1 if company i is required to provide soft information (interviews with management on firm's policy and prospects, brand recognition) in the screening process, and zero otherwise. Source: EU-EFIGE survey	0.59	0.49	6867
HARD_INFO_2	Dummy variable equal to 1 if company i is required to provide hard information (balance sheet information, business plan and firms' targets, historical records of payments and debt service, collateral) in the screening process, and zero otherwise. Source: EU-EFIGE survey	0.96	0.20	6875
ONLY_SOFT_INFO	Dummy variable equal to 1 if company i is required to provide only soft information in the screening process, and zero otherwise. Source: EU-EFIGE survey	0.03	0.16	6862
LONG_LASTING_REL	Dummy variable equal to 1 if company i states to have a long-lasting relationship with its main bank. Source: EU-EFIGE survey	0.43	0.49	8921
DEMAND	Dummy variable equal to 1 if company i desired to increase its borrowing and apply for it, and zero otherwise (i.e., if the firm did not desire additional borrowing or did not apply for it). Source: EU-EFIGE survey	0.29	0.46	6689
RESTRICTED	Dummy variable equal to 1 if company i unsuccessfully applied for credit, and zero otherwise (i.e., if the firm applied successfully for a bank loan). Source: EU-EFIGE survey	0.30	0.46	1963
DESIRE	Dummy variable equal to 1 if company i desired to increase its borrowing, and zero otherwise. Source: EU-EFIGE survey	0.38	0.49	6693
RESTRICTED_2	Dummy variable equal to 1 if company i unsuccessfully applied for credit or did not apply for it, and zero otherwise (i.e., if the firm applied successfully for a bank loan).	0.46	0.50	2562

	Source: EU-EFIGE survey			
CLOSENESS	Average of companies choosing their main banks because of a convenient location or the offering of consultancy on strategic financial decisions. Source: EU-EFIGE survey	0.225	0.333	8913
REGIONAL_SOFT	Average value of soft-information production for companies located in region j (NUTS-3 level). Source: EU-EFIGE survey	0.626	0.223	14758
REGIONAL_DURATION	Logarithm of the average length of the bank-firm relationship for companies located in region j (NUTS-3 level). Source: EU-EFIGE survey	2.57	0.238	14758
SIZE	Logarithm of the number of workers employed in the company. Source: Bvd-Amadeus	3.52	1.033	11442
AGE	Number of years from firm's inception. Source: Bvd-Amadeus	26.50	22.58	14759
DEBT_RATIO	Ratio of total debt to total assets. Source: Bvd-Amadeus	66.16	27.69	13844
LIQUIDITY_RATIO	Ratio of current assets to current liabilities. Source: Bvd-Amadeus	1.54	1.73	13322
DIFF_ROS	Difference between company i Return on Sales (ROS) and the median ROS of its industry (at the size class and regional level). Source: Bvd-Amadeus	0.001	0.08	9827
R&D	Dummy variable equal to 1 if company i made expenditures on R&D in the three-year period covered by the survey, and zero otherwise. Source: EU-EFIGE survey	0.51	0.50	14755
EXPORT	Dummy variable equal to 1 if company i sells part of its production abroad, and zero otherwise. Source: EU-EFIGE survey	0.65	0.48	14734
INTERNAL_CAPITAL	Ratio of cash flow to total assets. Source: Bvd-Amadeus	0.07	0.13	9776
ΔSALES	Sales growth. Source: Bvd-Amadeus	0.02	0.21	9596
CEO_AGE	CEO's age. Source: EU-EFIGE survey	52.46	10.16	14701
CEO_MALE	Dummy variable equal to 1 if the CEO of company i is a male, and zero otherwise. Source: EU-EFIGE survey	0.92	0.27	14740

Table 2

Distribution of the full sample by country, ownership structure and management type.

Country	All firms	Non-family owned firms	Family owned firms	Family CEOs	Non-family CEOs
	Obs.	Obs.	Obs.	Obs.	Obs.
Austria	443	83	360	316	44
France	2976	1292	1681	1443	238
Germany	2935	513	2409	2139	270
Hungary	488	228	254	210	44
Italy	3021	777	2244	2118	126
Spain	2832	700	2132	1829	303
UK	2067	769	1285	1119	166
<i>Total</i>	14759	4362	10365	9174	1191

Table 3**Descriptive statistics and univariate tests.**

Panel A: Relationship lending and access to credit

	Family firms			Non-family firms			t-statistics	Family CEOs			Non-family CEOs			t-statistics
	Mean	St. dev.	Obs.	Mean	St. dev.	Obs.		Mean	St. dev.	Obs.	Mean	St. dev.	Obs.	
Soft info (%)	0.55	0.50	4945	0.59	0.49	1908	-0.04***	0.54	0.50	4387	0.56	0.50	558	-0.02
Hard info (%)	0.93	0.26	4950	0.91	0.29	1915	0.02**	0.93	0.26	4389	0.92	0.28	561	0.01
Soft info 2 (%)	0.66	0.47	4948	0.71	0.46	1912	-0.05***	0.65	0.48	4389	0.67	0.47	559	-0.02
Hard info 2 (%)	0.94	0.24	4950	0.91	0.28	1915	0.03***	0.94	0.23	4389	0.92	0.27	561	0.02*
Duration	16.85	14.42	4858	13.27	11.69	1892	3.58***	17.22	14.57	4322	13.91	12.82	536	3.31***
Long lasting Rel (%)	0.42	0.49	6671	0.46	0.50	2232	-0.04***	0.42	0.49	5914	0.39	0.49	757	0.03*
Demand (%)	0.30	0.46	4826	0.27	0.45	1857	0.03	0.30	0.46	4283	0.30	0.30	543	0.00
Restricted (%)	0.29	0.45	1458	0.31	0.46	505	-0.02	0.29	0.45	1293	0.33	0.47	165	-0.04
Desire (%)	0.39	0.49	4830	0.37	0.48	1857	0.02	0.39	0.49	4286	0.39	0.49	544	0.00
Restricted 2 (%)	0.45	0.50	1874	0.49	0.50	687	-0.04**	0.44	0.50	1661	0.48	0.50	213	-0.04

Panel B: Firms' characteristics

	Family firms			Non-family firms			t-statistics	Family CEOs			Non-family CEOs			t-statistics
	Mean	St. dev.	Obs.	Mean	St. dev.	Obs.		Mean	St. dev.	Obs.	Mean	St. dev.	Obs.	
Age	27.51	24.22	10365	24.14	17.83	4362	3.37***	27.53	24.25	9174	27.35	24.01	1191	0.18
Employees	57.46	114.38	8175	101.48	184.65	3721	-44.02***	50.28	101.15	7159	108.04	174.01	1016	-57.76***
Total assets	7222.74	20588.75	9660	15601.98	37176.91	4184	-8379.24***	6055.36	17446.20	8531	16043.75	35212.97	1129	-9988.39***
Debt ratio	66.61	27.12	9645	65.25	28.93	4170	1.36***	66.73	26.91	8517	65.74	28.66	1128	0.99
Liquidity ratio	1.56	1.79	9236	1.50	1.58	4060	0.06*	1.56	1.77	8146	1.59	1.93	1090	-0.03
Diff. ROS	0.08	7.58	6664	-0.17	7.76	3152	0.25	0.11	7.48	5860	-0.14	8.30	804	0.25
R&D (%)	0.50	0.50	10362	0.53	0.50	4361	-0.03***	0.49	0.50	9172	0.59	0.49	1190	-0.10***
Export (%)	0.64	0.48	10356	0.66	0.47	4346	-0.02***	0.63	0.48	9167	0.73	0.44	1189	-0.10***

Notes: The table reports univariate statistics. All of the variables are defined in Table 1. Accounting figures are expressed in thousands of euros. Balance sheet indicators refer to the period 2007-2009. Extreme values are recoded at the 1st and 99th percentiles because of outliers. Three, two and one star (*) mean, respectively, 99, 95 and 90 percent level of significance.

Table 4
Step 1: Family management and lending relationships.

	Bivariate Probit Model		Bivariate Probit Model		OLS Model	
	SOFT_INFO	HARD_INFO	SOFT_INFO	HARD_INFO	DURATION	DURATION
	(1)	(2)	(3)	(4)	(5)	(6)
FAM_FIRM (0,1)	-0.034 [0.044]	0.029 [0.058]	-0.143* [0.078]	-0.004 [0.103]	0.102*** [0.022]	-0.006 [0.038]
FAM_FIRM×FAM_CEO (0,1)			0.125* [0.073]	0.038 [0.098]		0.123*** [0.036]
SIZE	0.133*** [0.023]	0.132*** [0.032]	0.138*** [0.023]	0.133*** [0.033]	-0.033*** [0.011]	-0.028** [0.011]
AGE	0.000 [0.001]	-0.002 [0.002]	0.000 [0.001]	-0.002 [0.002]	0.011*** [0.001]	0.011*** [0.001]
DEBT_RATIO	-0.001 [0.001]	0.001 [0.001]	-0.001 [0.001]	0.001 [0.001]	-0.004*** [0.001]	-0.004*** [0.001]
LIQUIDITY_RATIO	-0.122*** [0.029]	-0.045* [0.027]	-0.122*** [0.029]	-0.045* [0.027]	-0.007 [0.012]	-0.007 [0.012]
DIFF_ROS	-0.403 [0.269]	-0.464 [0.387]	-0.416 [0.269]	-0.469 [0.387]	-0.245* [0.135]	-0.258* [0.135]
R&D (0,1)	0.224*** [0.041]	0.078 [0.056]	0.226*** [0.041]	0.078 [0.056]	-0.045** [0.020]	-0.043** [0.020]
EXPORT (0,1)	0.201*** [0.044]	0.002 [0.060]	0.201*** [0.044]	0.001 [0.060]	-0.004 [0.021]	-0.004 [0.021]
CEO_AGE	-0.002 [0.002]	-0.005* [0.003]	-0.002 [0.002]	-0.005* [0.003]	0.007*** [0.001]	0.007*** [0.001]
CEO_MALE (0,1)	-0.012 [0.069]	0.055 [0.096]	-0.006 [0.069]	0.057 [0.096]	-0.105*** [0.034]	-0.100*** [0.034]
CLOSENESS	0.355*** [0.055]	-0.228*** [0.072]	0.353*** [0.055]	-0.227*** [0.072]		
REGIONAL SOFT	2.821*** [0.103]	-1.515*** [0.132]	2.830*** [0.103]	-1.513*** [0.132]		
REGIONAL DURATION					0.735*** [0.053]	0.729*** [0.053]
Observations		5079		5079	5003	5003
Atrho		0.531***		0.531***		
R ²					0.17	0.17

Notes: The table reports marginal effects in columns (1)-(4) and estimated coefficients in columns (5)-(6). The dependent variable DURATION is in logarithm. Three, two and one star (*) mean, respectively, a 99, 95 and 90% level of significance. Robust standard errors are in brackets. All of the variables are defined in Table 1. Balance sheet indicators refer to the period 2007-2009. The variable SIZE is in logarithm. The variable REGIONAL DURATION is in logarithm. All regressions include industry and country dummies, not reported for reasons of space.

Table 5**Step 2: Family management and access to credit.**

Heckman Selection Probit Model								
	DEMAND	RESTRICTED	DEMAND	RESTRICTED	DEMAND	RESTRICTED	DEMAND	RESTRICTED
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FAM_FIRM (0,1)	-0.029**	0.011	0.002	-0.007	-0.013	0.020	0.003	0.018
	[0.013]	[0.035]	[0.027]	[0.052]	[0.015]	[0.033]	[0.029]	[0.047]
FAM_FIRM×FAM_CEO (0,1)			-0.036*	0.020			-0.019	0.001
			[0.020]	[0.045]			[0.029]	[0.058]
SOFT_INFO	-0.006	-0.125***	-0.002	-0.127***				
	[0.025]	[0.042]	[0.030]	[0.041]				
DURATION					-0.143***	0.040	-0.132***	0.044
					[0.042]	[0.121]	[0.051]	[0.115]
SIZE	0.016	-0.015	0.014*	-0.014	0.011	-0.032**	0.010*	-0.032**
	[0.010]	[0.018]	[0.008]	[0.014]	[0.009]	[0.016]	[0.006]	[0.014]
AGE	-0.001*	0.003**	-0.001**	0.003***	0.001	0.002	0.000	0.002
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.002]	[0.001]	[0.002]
DEBT_RATIO	0.003***	-0.003*	0.003***	-0.003**	0.002***	-0.003*	0.002***	-0.003
	[0.001]	[0.002]	[0.000]	[0.002]	[0.000]	[0.002]	[0.000]	[0.002]
LIQUIDITY_RATIO	-0.073***	0.060	-0.073***	0.060	-0.072***	0.076	-0.072***	0.076
	[0.018]	[0.053]	[0.018]	[0.051]	[0.018]	[0.055]	[0.018]	[0.051]
DIFF_ROS	-0.249**	0.227	-0.244***	0.229	-0.286**	0.327	-0.282***	0.329
	[0.118]	[0.257]	[0.091]	[0.216]	[0.112]	[0.297]	[0.104]	[0.263]
R&D (0,1)	0.032**	-0.071**	0.030**	-0.071**	0.022	-0.102***	0.023*	-0.102***
	[0.015]	[0.034]	[0.015]	[0.029]	[0.015]	[0.031]	[0.013]	[0.033]
EXPORT (0,1)	0.032*	-0.050	0.031*	-0.048	0.032*	-0.084*	0.032**	-0.083**
	[0.017]	[0.041]	[0.018]	[0.036]	[0.017]	[0.048]	[0.015]	[0.036]
CEO_AGE	-0.000	-0.003**	-0.000	-0.003**	0.001	-0.003*	0.001	-0.003**
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.002]	[0.001]	[0.001]
CEO_MALE (0,1)	-0.020	0.056	-0.021	0.056	-0.037*	0.063	-0.036**	0.064*
	[0.020]	[0.048]	[0.024]	[0.045]	[0.022]	[0.046]	[0.018]	[0.038]
INTERNAL_CAPITAL	-0.264***		-0.260**		-0.235***		-0.235**	
	[0.085]		[0.108]		[0.083]		[0.115]	
ΔSALES	-0.050**		-0.050**		-0.053		-0.053*	
	[0.024]		[0.025]		[0.037]		[0.031]	
INVERSE MILLS RATIO		-0.922***		-0.926***		-0.970***		-0.970***
		[0.243]		[0.210]		[0.265]		[0.263]
Observations	4472	1356	4472	1356	4472	1356	4472	1356

Notes: The table reports marginal effects. Three, two and one star (*) mean, respectively, a 99, 95 and 90% level of significance. Bootstrapped standard errors are in brackets. SOFT_INFO indicates the predicted probabilities obtained from the first step estimation of Equations (1a)-(1b). DURATION indicates the predicted values obtained from the first step estimation of Equation (2). All of the variables are defined in Table 1. Balance sheet indicators refer to the period 2007-2009. The variable SIZE is in logarithm. All regressions include industry and country dummies, not reported for reasons of space.

Table 6

Alternative measures of information production and lending relationship length (Step 1).

	Bivariate Probit Model		Bivariate Probit Model		Bivariate Probit Model		Probit Model	Probit Model
	SOFT INFO_2	HARD INFO	SOFT INFO	HARD INFO_2	SOFT INFO_2	HARD INFO_2	ONLY SOFT INFO	LONG LASTING REL
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FAM_FIRM (0,1)	-0.133*	0.002	-0.142*	-0.093	-0.132*	-0.088	-0.016	-0.030
	[0.078]	[0.103]	[0.078]	[0.121]	[0.078]	[0.121]	[0.012]	[0.023]
FAM_FIRM×FAM_CEO (0,1)	0.125*	0.029	0.127*	0.155	0.127*	0.146	0.018*	0.048**
	[0.073]	[0.098]	[0.073]	[0.118]	[0.073]	[0.118]	[0.010]	[0.022]
SIZE	0.158***	0.132***	0.136***	0.034	0.156***	0.035	-0.007**	-0.042***
	[0.023]	[0.032]	[0.023]	[0.039]	[0.023]	[0.039]	[0.003]	[0.006]
AGE	0.000	-0.002	0.000	-0.001	0.000	-0.001	0.002**	-0.000
	[0.001]	[0.002]	[0.001]	[0.002]	[0.001]	[0.002]	[0.000]	[0.000]
DEBT_RATIO	-0.002	0.001	-0.001	0.004*	-0.001	0.003	-0.000***	-0.001***
	[0.001]	[0.001]	[0.001]	[0.002]	[0.001]	[0.002]	[0.000]	[0.000]
LIQUIDITY_RATIO	-0.108***	-0.046*	-0.120***	-0.047	-0.106***	-0.047	-0.005*	-0.029***
	[0.027]	[0.027]	[0.029]	[0.030]	[0.027]	[0.030]	[0.003]	[0.006]
DIFF_ROS	-0.402	-0.459	-0.420	-0.786*	-0.402	-0.783*	0.014	-0.036
	[0.266]	[0.390]	[0.269]	[0.465]	[0.266]	[0.466]	[0.034]	[0.085]
R&D (0,1)	0.245***	0.078	0.225***	0.131*	0.244***	0.129*	-0.002	0.043***
	[0.041]	[0.056]	[0.041]	[0.071]	[0.041]	[0.071]	[0.005]	[0.013]
EXPORT (0,1)	0.184***	-0.003	0.201***	0.045	0.182***	0.043	0.001	0.005
	[0.044]	[0.060]	[0.044]	[0.075]	[0.044]	[0.075]	[0.005]	[0.014]
CEO_AGE	-0.001	-0.005*	-0.002	-0.001	-0.001	-0.001	-0.000	0.002**
	[0.002]	[0.003]	[0.002]	[0.004]	[0.002]	[0.004]	[0.000]	[0.001]
CEO_MALE (0,1)	-0.034	0.056	-0.003	0.035	-0.031	0.032	-0.005	0.017
	[0.069]	[0.096]	[0.069]	[0.122]	[0.069]	[0.122]	[0.009]	[0.023]
CLOSENESS	0.395***	-0.223***	0.348***	-0.153*	0.391***	-0.150*	0.005	0.484***
	[0.055]	[0.072]	[0.055]	[0.091]	[0.055]	[0.091]	[0.006]	[0.015]
REGIONAL SOFT	2.710***	-1.522***	2.825***	-2.035***	2.706***	-2.048***	0.165***	
	[0.103]	[0.132]	[0.103]	[0.180]	[0.103]	[0.181]	[0.016]	
REGIONAL DURATION								0.018
								[0.032]
Observations	5079		5079		5079		5079	5434
Atrho	0.554***		0.452***		0.508***			

Notes: The table reports marginal effects. Three, two and one star (*) mean, respectively, a 99, 95 and 90% level of significance. Robust standard errors are in brackets. All of the variables are defined in Table 1. Balance sheet indicators refer to the period 2007-2009. The variable SIZE is in logarithm. The variable REGIONAL DURATION is in logarithm. All regressions include industry and country dummies, not reported for reasons of space.

Table 7

Alternative measures of information production and lending relationship length (Step 2).

Heckman Selection Probit Model						
	DEMAND	RESTRICTED	DEMAND	RESTRICTED	DEMAND	RESTRICTED
	(1)	(2)	(3)	(4)	(5)	(6)
FAM_FIRM (0,1)	0.002 [0.024]	-0.005 [0.053]	-0.001 [0.027]	-0.014 [0.056]	0.002 [0.027]	0.015 [0.050]
FAM_FIRM×FAM_CEO (0,1)	-0.035 [0.022]	0.019 [0.056]	-0.031 [0.026]	0.037 [0.053]	-0.034 [0.027]	0.008 [0.049]
SOFT_INFO_2	-0.005 [0.022]	-0.124*** [0.043]				
ONLY_SOFT_INFO			-0.015 [0.026]	-0.107** [0.049]		
LONG_LASTING_REL					-0.013 [0.014]	-0.018* [0.026]
SIZE	0.015* [0.008]	-0.012 [0.020]	0.012 [0.008]	-0.044** [0.017]	0.012* [0.007]	-0.034** [0.016]
AGE	-0.001** [0.000]	0.003*** [0.001]	-0.001** [0.000]	0.003*** [0.001]	-0.001** [0.001]	0.002** [0.001]
DEBT_RATIO	0.003*** [0.001]	-0.003* [0.002]	0.003*** [0.001]	-0.004* [0.002]	0.003*** [0.000]	-0.003 [0.002]
LIQUIDITY_RATIO	-0.073*** [0.023]	0.062 [0.057]	-0.074*** [0.015]	0.063 [0.068]	-0.074*** [0.019]	0.068 [0.068]
DIFF_ROS	-0.246** [0.117]	0.233 [0.251]	-0.239* [0.126]	0.333 [0.297]	-0.247** [0.103]	0.281 [0.245]
R&D (0,1)	0.031** [0.014]	-0.069* [0.037]	0.029** [0.014]	-0.104*** [0.035]	0.031*** [0.012]	-0.098*** [0.029]
EXPORT (0,1)	0.032* [0.017]	-0.052 [0.045]	0.032** [0.015]	-0.070* [0.041]	0.031* [0.016]	-0.081*** [0.031]
CEO_AGE	-0.000 [0.001]	-0.003** [0.001]	-0.000 [0.001]	-0.003** [0.001]	-0.000 [0.001]	-0.003* [0.001]
CEO_MALE (0,1)	-0.021 [0.024]	0.052 [0.049]	-0.022 [0.021]	0.048 [0.044]	-0.021 [0.022]	0.060 [0.039]
INTERNAL_CAPITAL	-0.259** [0.116]		-0.255*** [0.076]		-0.256** [0.108]	
ΔSALES	-0.050 [0.034]		-0.050* [0.027]		-0.050 [0.033]	
INVERSE MILLS RATIO		-0.924*** [0.271]		-0.915*** [0.339]		-0.920*** [0.264]
Observations	4472	1356	4472	1356	4472	1356

Notes: The table reports marginal effects. Three, two and one star (*) mean, respectively, a 99, 95 and 90% level of significance. Bootstrapped standard errors are in brackets. SOFT_INFO_2 indicates the predicted probabilities obtained from the first step estimation of Equations (1a)-(1b) with SOFT_INFO_2 and HARD_INFO as dependent variables (results are qualitatively and quantitatively similar when we consider the predicted probabilities obtained from the estimation of a bivariate probit model with SOFT_INFO_2 and HARD_INFO_2 as dependent variables). ONLY_SOFT_INFO indicates the predicted probabilities obtained from the first-step probit estimation of Equation (1a) with ONLY_SOFT_INFO as dependent variable. LONG_LASTING_REL are the predicted probabilities obtained from the first-step probit estimation of Equation (2) with LONG_LASTING_REL as dependent variable. All of the variables are defined in Table 1. Balance sheet indicators refer to the period 2007-2009. The variable SIZE is in logarithm. All regressions include industry and country dummies, not reported for reasons of space.

Table 8
OLS and Heckman selection with linear probability model.

	OLS					Heckman Selection Model						
	RESTRICTED (1)	RESTRICTED (2)	RESTRICTED (3)	RESTRICTED (4)	DEMAND (5)	RESTRICTED (6)	DEMAND (7)	RESTRICTED (8)	DEMAND (9)	RESTRICTED (10)	DEMAND (11)	RESTRICTED (12)
FAM_FIRM (0,1)	-0.001 [0.047]	-0.000 [0.047]	0.023 [0.047]	0.018 [0.050]	0.008 [0.092]	-0.004 [0.064]	0.006 [0.107]	-0.001 [0.044]	0.009 [0.109]	0.022 [0.043]	0.005 [0.087]	0.018 [0.044]
FAM_FIRM×FAM_CEO (0,1)	-0.037 [0.045]	-0.037 [0.047]	-0.015 [0.041]	-0.044 [0.044]	-0.112 [0.084]	0.010 [0.063]	-0.111 [0.093]	0.010 [0.044]	-0.061 [0.108]	-0.005 [0.045]	-0.107 [0.086]	-0.001 [0.045]
SOFT_INFO	-0.129*** [0.043]				-0.005 [0.094]	-0.128*** [0.038]						
SOFT_INFO_2		-0.135*** [0.040]					-0.017 [0.087]	-0.126*** [0.039]				
DURATION			-0.302*** [0.103]						-0.419** [0.172]	0.019 [0.096]		
LONG_LASTING_REL				-0.048* [0.026]							-0.040 [0.042]	-0.022* [0.030]
SIZE	0.017 [0.015]	0.021 [0.015]	-0.010 [0.015]	-0.008 [0.015]	0.045 [0.029]	-0.011 [0.015]	0.047* [0.028]	-0.009 [0.017]	0.033 [0.021]	-0.030* [0.018]	0.039* [0.023]	-0.032** [0.016]
AGE	0.001 [0.001]	0.001 [0.001]	0.004*** [0.001]	0.001 [0.001]	-0.003** [0.002]	0.002** [0.001]	-0.003** [0.002]	0.002** [0.001]	0.001 [0.003]	0.002 [0.002]	-0.004** [0.002]	0.002** [0.001]
DEBT_RATIO	0.003*** [0.001]	0.003*** [0.001]	0.002 [0.001]	0.003*** [0.001]	0.009*** [0.002]	-0.003 [0.002]	0.009*** [0.002]	-0.003* [0.002]	0.008*** [0.001]	-0.003* [0.001]	0.009*** [0.002]	-0.003 [0.002]
LIQUIDITY_RATIO	-0.065*** [0.020]	-0.064*** [0.020]	-0.054** [0.021]	-0.057*** [0.022]	-0.230*** [0.069]	0.079 [0.049]	-0.231*** [0.066]	0.080* [0.042]	-0.229*** [0.056]	0.096** [0.043]	-0.233*** [0.062]	0.087* [0.045]
DIFF_ROS	-0.495*** [0.132]	-0.494*** [0.148]	-0.504*** [0.148]	-0.450*** [0.149]	-0.773** [0.327]	0.175 [0.207]	-0.779** [0.344]	0.178 [0.279]	-0.894** [0.406]	0.267 [0.217]	-0.782* [0.404]	0.223 [0.225]
R&D (0,1)	-0.006 [0.030]	-0.002 [0.030]	-0.054** [0.025]	-0.032 [0.031]	0.096* [0.052]	-0.064** [0.032]	0.099** [0.043]	-0.062** [0.031]	0.072** [0.032]	-0.097*** [0.025]	0.099** [0.047]	-0.091*** [0.030]
EXPORT (0,1)	0.031 [0.029]	0.028 [0.027]	0.001 [0.027]	-0.003 [0.028]	0.100* [0.059]	-0.040 [0.032]	0.102* [0.053]	-0.043 [0.033]	0.101 [0.064]	-0.074** [0.029]	0.098* [0.051]	-0.072** [0.029]
CEO_AGE	-0.002* [0.001]	-0.002** [0.001]	0.000 [0.001]	-0.002 [0.001]	-0.000 [0.002]	-0.003** [0.001]	-0.000 [0.002]	-0.003** [0.001]	0.003 [0.002]	-0.003** [0.001]	-0.000 [0.002]	-0.003** [0.001]
CEO_MALE (0,1)	-0.001 [0.046]	-0.006 [0.042]	-0.033 [0.042]	0.004 [0.039]	-0.065 [0.064]	0.056 [0.049]	-0.066 [0.063]	0.051 [0.053]	-0.112 [0.080]	0.063 [0.048]	-0.064 [0.073]	0.061 [0.057]
INTERNAL_CAPITAL					-0.822** [0.331]		-0.821*** [0.271]		-0.745** [0.329]		-0.812** [0.324]	
ΔSALES					-0.157 [0.116]		-0.157 [0.107]		-0.168* [0.099]		-0.157* [0.090]	
INVERSE MILLS RATIO						-0.846*** [0.242]		-0.844*** [0.205]		-0.890*** [0.194]		-0.841*** [0.192]
Observations	1508	1508	1508	1508	4472	1357	4472	1357	4472	1357	4472	1357
R ²	0.07	0.07	0.07	0.06								

Notes: The table reports estimated coefficient. Three, two and one star (*) mean, respectively, a 99, 95 and 90% level of significance. Bootstrapped standard errors are in brackets. $\widehat{SOFT_INFO}$ indicates the predicted probabilities obtained from the first step estimation of Equations (1a)-(1b). $\widehat{SOFT_INFO_2}$ indicates the predicted probabilities obtained from the first step estimation of Equations (1a)-(1b) with $\widehat{SOFT_INFO_2}$ and $\widehat{HARD_INFO}$ as dependent variables. $\widehat{DURATION}$ indicates the predicted values obtained from the first step estimation of Equation (2). $\widehat{LONG_LASTING_REL}$ are the predicted probabilities obtained from the first-step probit estimation of Equation (2) with $\widehat{LONG_LASTING_REL}$ as dependent variable. All of the variables are defined in Table 1. Balance sheet indicators refer to the period 2007-2009. The variable SIZE is in logarithm. All regressions include industry and country dummies, not reported for reasons of space.

Table 9

Alternative measures of credit rationing.

Heckman Selection Probit Model

	DESIRE (1)	RESTRICTED_2 (2)	DESIRE (3)	RESTRICTED_2 (4)	DESIRE (5)	RESTRICTED_2 (6)	DESIRE (7)	RESTRICTED_2 (8)
FAM_FIRM (0,1)	-0.007 [0.027]	-0.002 [0.041]	-0.007 [0.020]	-0.001 [0.053]	-0.007 [0.030]	0.018 [0.054]	-0.007 [0.030]	0.016 [0.052]
FAM_FIRM×FAM_CEO (0,1)	-0.030 [0.025]	0.007 [0.042]	-0.030 [0.022]	0.006 [0.045]	-0.013 [0.030]	-0.006 [0.049]	-0.029 [0.033]	-0.004 [0.049]
SOFT_INFO	-0.003 [0.022]	-0.113*** [0.042]						
SOFT_INFO_2			-0.006 [0.033]	-0.111** [0.045]				
DURATION					-0.135** [0.058]	-0.010 [0.114]		
LONG_LASTING_REL							-0.006 [0.018]	-0.020* [0.025]
SIZE	0.008 [0.008]	-0.010 [0.014]	0.008 [0.009]	-0.008 [0.018]	0.003 [0.006]	-0.026* [0.015]	0.006 [0.009]	-0.029* [0.017]
AGE	-0.001* [0.001]	0.002* [0.001]	-0.001** [0.001]	0.002* [0.001]	0.000 [0.001]	0.002 [0.001]	-0.001** [0.001]	0.002* [0.001]
DEBT_RATIO	0.003*** [0.001]	-0.002 [0.002]	0.003*** [0.001]	-0.002 [0.002]	0.002*** [0.001]	-0.002 [0.002]	0.003*** [0.000]	-0.002 [0.002]
LIQUIDITY_RATIO	-0.076*** [0.016]	0.051 [0.049]	-0.076*** [0.022]	0.052 [0.042]	-0.075*** [0.016]	0.062 [0.043]	-0.076*** [0.016]	0.058 [0.052]
DIFF_ROS	-0.280** [0.124]	0.043 [0.231]	-0.281** [0.130]	0.045 [0.229]	-0.318*** [0.109]	0.094 [0.266]	-0.280** [0.143]	0.082 [0.216]
R&D (0,1)	0.035* [0.018]	-0.045 [0.031]	0.036** [0.017]	-0.044 [0.032]	0.027** [0.012]	-0.073** [0.031]	0.035** [0.015]	-0.069** [0.034]
EXPORT (0,1)	0.023 [0.016]	-0.029 [0.029]	0.024 [0.018]	-0.033 [0.032]	0.023 [0.015]	-0.057* [0.030]	0.022 [0.015]	-0.057** [0.024]
CEO_AGE	-0.000 [0.001]	-0.002* [0.001]	-0.000 [0.001]	-0.002 [0.001]	0.001 [0.001]	-0.002 [0.002]	-0.000 [0.001]	-0.002* [0.001]
CEO_MALE (0,1)	-0.016 [0.029]	0.046 [0.043]	-0.016 [0.027]	0.042 [0.047]	-0.031 [0.029]	0.046 [0.055]	-0.016 [0.026]	0.049 [0.041]
INTERNAL_CAPITAL	-0.279*** [0.105]		-0.279** [0.118]		-0.254** [0.105]		-0.278** [0.109]	
ΔSALES	-0.069* [0.035]		-0.069*** [0.026]		-0.072** [0.037]		-0.069** [0.027]	
INVERSE MILLS RATIO		-0.561*** [0.197]		-0.558*** [0.215]		-0.565** [0.228]		-0.547*** [0.205]
Observations	4479	1631	4479	1631	4479	1631	4479	1631

Notes: The table reports marginal effects. Three, two and one star (*) mean, respectively, a 99, 95 and 90% level of significance. Bootstrapped standard errors are in brackets. SOFT_INFO indicates the predicted probabilities obtained from the first step estimation of Equations (1a)-(1b). SOFT_INFO_2 indicates the predicted probabilities obtained from the first step estimation of Equations (1a)-(1b) with SOFT_INFO_2 and IARD_INFO as dependent variables. DURATION indicates the predicted values obtained from the first step estimation of Equation (2). LONG_LASTING_REL are the predicted probabilities obtained from the first-step probit estimation of Equation (2) with LONG_LASTING_REL as dependent variable. All of the variables are defined in Table 1. Balance sheet indicators refer to the period 2007-2009. The variable SIZE is in logarithm. All regressions include industry and country dummies, not reported for reasons of space.

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WORKING PAPER NO. 491

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February 2018



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ISSN: 2240-9696

WORKING PAPER NO. 491

Relational Capital in Lending Relationships. Evidence from European Family Firms

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Abstract

We investigate the role of a family CEO's relational capital and a non-family CEO's managerial abilities in the context of bank relationships for a large sample of small- and medium-sized European firms. We begin by examining whether the relational capital embodied in the family leadership of the company influences the lending relationship with the bank in terms of information sensitivity and duration. Next, we test how banks value in their credit decisions the leadership of professionals and their managerial skills with respect to the relational capital of family CEOs. The results indicate that family businesses appointing managers from within the family are significantly more likely to maintain soft-information-based and longer-lasting lending relationships. However, family executives do not have a negative impact on the firm's access to credit, while the creation of soft-information-based and long-lasting lending relationships significantly reduce the likelihood of experiencing credit restrictions. In view of these findings, family relational capital appears to have a univocal beneficial impact on the bank–firm relationship in our sample.

Keywords: Family firm, family CEO, soft information, relational capital, relationship lending, credit rationing..

JEL Classification: D22, G21, G22.

Acknowledgments: We are grateful to Stefania Cosci, Rocco Ciciretti, Riccardo Lucchetti, Pierluigi Murro, Tommaso Oliviero for comments and suggestions. This paper also benefited from comments of the participants at the XXIV Conference on Money, Banking and Finance (Rome, Italy), the 3rd CERBE Workshop (Rome, Italy) and seminar held at the University of Rome Tor Vergata.

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