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Multiple banking relationships: Do SMEs mistrust their banks?*

By Catherine Refait-Alexandre[†] and Stéphanie Serve[°]

Abstract

This paper focuses on the determinants of the use of multiple banking relationships by SMEs. We exploit the results of an original survey conducted on a sample of French SMEs in December 2012. We first provide evidence that access to multiple banking relationships is influenced by firms' characteristics. We find that larger, high-performing and innovative firms are more likely to develop multiple banking relationships. More originally, relying on the management literature, we also highlight the explanatory power of trust from the perspective of the CEO: when the CEO mistrusts the firm's main bank, the firm will be more likely to engage in multiple banking relationships.

Keywords: Banking relationships, Small business, credit rationing, trust

JEL Classification: G21, G32

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Highlights (3 to 5 bullet points, 85 characters each including spaces)

We investigate the determinants of the use of multiple banking relationships by SMEs.
We use a sample of French SMEs derived from accounting data and survey responses.
We first test a financial approach (impact of a firm's characteristics).
We test a management approach based on a proxy for trust on the part of the SME.
We find that both approaches are individually consistent and complementary.

Multiple banking relationships: Do SMEs mistrust their banks?

1. Introduction

Like most other continental European countries, France is characterized by a prevalence of bank financing, and bank debt is the most common source of external financing for small and medium-sized enterprises (SMEs). SMEs have difficulties accessing alternative sources of financing: They may struggle to afford the costs of disintermediation, and smallest and/or not rapidly growing SMEs are unattractive to private equity investors. Because SMEs are strongly dependent on banks, they may be credit rationed and/or may face stringent financial conditions. In France, according to a questionnaire addressed by the Banque de France¹ to 3,000 SMEs over the period from October 2012 to March 2013, approximately one out of every six firms (16.5%) was credit rationed following a loan application. Alexandre and Buisson-Stéphan (2014) and Benhami et al. (2017) also provide support for the financial crisis having increased the financing constraints of French SMEs.

Given their difficulty in accessing external financing sources, the choice between one bank and several banks appears to be a key issue for SMEs to avoid credit rationing or to improve their financing conditions. This paper focuses on the driving factors for multiple banking relationships derived from two theoretical approaches: one from the financial literature and the other from the management literature. The first – “traditional” – approach comes from the financial theoretical literature on banking relationships. This stream of literature shows that information asymmetry between banks and firms plays a crucial role in the credit market, as it may lead to credit rationing or to interest rates that are higher than the first-best level for less-risky firms (Stiglitz and Weiss, 1981). Consequently, the way that banks collect information and monitor firms is expected to have a substantial impact on the financing conditions provided to them. More specifically, the theoretical literature shows that the use of a single bank versus several banks influences the incentives for banks to monitor by creating economies of scale, monopoly rents or by encouraging free-riding in monitoring (for instance, see Sharpe, 1990 or Carletti, 2004). The link between the number of banks, their incentives to monitor and the financial conditions they charge – and, as a consequence, the optimal strategy for firms to choose between one or several banks – depends on firms’ characteristics. Empirical studies consistently link firms’ characteristics with the existence of single or multiple banking relationships (for size, age, and performance, see Carletti et al. 2007, or Schenone, 2010; for default risk, see Detragiache et al. 2000, or Guiso and Minetti, 2010; for innovation, see Bellucci et al, 2014). In this traditional approach, the CEO is passive in the process of information

¹ See Guinouard et al. (2013). More recent statistics are available, but we present the situation at the time our survey was conducted.

disclosure: his/her single strategy consists of choosing single banking vs. multiple banking relationships by rationally anticipating the monitoring decision by the bank. However, a more recent stream of literature (Stein, 2002) emphasizes the role played by the CEO as a provider of information by introducing the concept of soft information². Soft information, as opposed to hard (quantitative) information, is obtained by a bank through social interaction with the CEO of the firm (Agarwal and Hauswald, 2010; Bartoli et al. 2011; Berger and Udell, 2002, 2006; Grunert and Norden, 2012). Consequently, this literature proposes an active role for the CEO in the disclosure of soft information, which is consistent with features of the ownership structure of SMEs in Europe. According to the Family Business Network, 83% of SMEs are run by a CEO who is also the dominant owner. His/her investment in the business represents a significant portion of his/her wealth, and he/she is the privileged interlocutor of the bank (Brunninge et al., 2007).

In spite of the crucial role of the CEO in banking relationships, the traditional literature in financial economics remains focused on the role played by banks and their decision to invest in information production. Our paper aims to revisit the issue of multiple banking relationships by questioning CEOs' willingness to engage in multiple banking relationships. To do so, we challenge the existing "traditional approach" with an alternative approach – the second approach – on the part of the CEO derived from the management literature. Even if the bank is the decision maker regarding opening an account, granting a loan or providing other financial services, the CEO is the decision maker regarding the search for one or more banking partners in addition to his/her main bank. In contrast to the previous approach, the management literature envisions an enhanced role for the CEO as a decision maker and proposes that his/her decisions can be driven by the quality of the relationship with the loan officer of his/her main bank, thus referring to trust. More specifically, Saporito et al. (2004) and Hill and Scott (2015) question the relationship between banks and small firms using surveys addressed to CEOs. They highlight the prevalent role of trust between the CEO and the bank. Relational trust appears to be an indicator of the quality of the banking relationship (Saporito et al. 2004) and influences the choice of the main bank by the CEO (Hill and Scott 2015). The framework for banking relationships provided by the management literature relies on the idea of a CEO "small business customer" rather than on the idea of a bank lender.

In this article, we test and compare this alternative approach based on trust derived from the management literature with the traditional financial approach based on firms' characteristics. We aim to

² Stein (2002) defines soft information as "information that cannot be directly verified by anyone other than the agent who produces it", whereas hard information is "verifiable information".

answer the following questions: Do SMEs' characteristics matter more than trust on the part of the CEO in explaining the existence of multiple banking relationships? Are the two approaches mutually exclusive, or do they complement each other? This article makes several contributions. First, we fill a gap in both the finance and management literature by examining in more depth the link between trust and multiple banking relationships. Some recent studies in finance take into account the concept of trust in banking relationships (Hernández-Cánovas and Martínez-Solano, 2010; Howorth and Moro, 2012; Moro and Fink, 2013). However, they adopt the point of view of the lender and analyze the financing conditions of SMEs rather than the issue of multiple banking relationships. Furthermore, bank-small firm relationships remain an under-researched issue in management, and the previously cited studies are specific to the US banking system. Our second contribution relies on the creation of original proxies to assess the trust that firms have in their banks. This unique dataset is provided by a questionnaire addressed to managers of French SMEs in 2012. CEOs were asked to provide answers regarding financing conditions and various aspects of their relationship with their bank(s) during the period 2007-2012.

Our sample comprises 94 French SMEs that responded to the survey in December 2012. We exploit the responses to the survey, and we also use accounting data from the ALTARES database. Our results are twofold. First, we provide support for the explanatory power of the "traditional" approach, that is, the impact of some firms' characteristics in terms of engagement in single vs. multiple banking relationships: larger and better-performing firms are more likely to develop multiple banking relationships, as are innovative firms. Second, based on the "alternative" approach, we provide original results showing that trust affects access to multiple banking relationships. We find that when the CEO trusts his/her main bank, he/she is less likely to engage in multiple banking relationships. However, these explanatory approaches are not mutually exclusive: among the models tested, the combined models that include both firms' characteristics and proxies for trust provide the best goodness of fit for the likelihood of engaging in multiple banking relationships.

The remainder of the article is structured as follows. In section 2, we analyze the theoretical background and empirical evidence on the two alternative approaches. Section 3 presents the data and summary statistics in addition to the results of the univariate analysis. Our main empirical findings are provided in section 4. Section 5 discusses the results and concludes.

2. Theoretical Background and Hypotheses

2.1. Approach One: Multiple Banking Relationships and Firms' Characteristics

2.1.1. Multiple Banking Relationships, Asymmetric Information and Credit Conditions

Information asymmetry is of paramount importance in the banking relationship literature. Reducing information asymmetry allows banks to better assess default risk and, as a consequence, to mitigate their incentive to ration credit and lighten their requirements for collateral and interest rates. [Less-risky firms will especially benefit from a reduction of information asymmetry, as they suffer the most from it as best-type agents.](#)

However, collecting information is costly and may not be profitable for banks. The banking relationship literature shows that information collection can be influenced by the number of creditors: by choosing the number of their banking relationships, [less-risky firms may try to drive their bank\(s\) to monitor them.](#) On one hand, a single bank has more incentives than multiple banks to collect information because it benefits from economies of scale in monitoring costs (Greenbaum and Thakor, 1995). Moreover, a single bank avoids the problem of free riding that may arise with several banks. As a consequence, having a single bank is likely to provide SMEs with a banking relationship-based diffusion of soft information, leading to protection against credit rationing and a guarantee that the interest rate will be reduced for less-risky firms. On the other hand, a single bank could also exploit its informational monopoly to extract rent and to charge non-competitive interest rates to SMEs (Sharpe, 1990). [To escape this “hold-up problem”, SMEs may be tempted to develop multiple banking relationships. Such relationships may also reduce credit rationing if one creditor undergoes a liquidity crisis \(Detragiache et al., 2000\). Multiple banking relationships also help banks share risks, thus leading to, for instance, a lower interest rate \(see, for instance, Carletti et al., 2007\)³.](#) Like the theoretical literature, recent empirical studies also exhibit contrasting results regarding the impact of the number of creditors on financing conditions. By and large, however, they show that strong relationships with their banks protected firms against a reduced loan supply (see, for instance Gobbi and Sette, 2014; Ferri et al., 2014, in Europe during the 2008-2009 crisis; Han et al., 2015, for US SMEs).

³ However, the long-term analysis led by Braggion and Ongena (2011) shows that the argument of risk diversification by the banks cannot actually explain multiple banking relationships, as the end of the last century provided banks with extensive opportunities for diversification.

2.1.2. *Multiple Banking Relationships and Firms' Characteristics: Hypotheses*

The economic and financial situation of the firm influences the incentive for banks to collect information and, to a lesser extent, the CEO's willingness to disclose soft information. Thus, the use of single *versus* multiple banking relationships can be driven by the firm's characteristics.

Firm size plays a role. For small firms, monitoring costs per euro borrowed are high, and they therefore have incentives to favor a single relationship if they want to increase their main bank's willingness to monitor them. Conversely, for larger firms, the use of multiple banking relationships induces economies of scale for banks because it reduces the cost of monitoring per euro borrowed. As a consequence, larger firms can develop multiple banking relationships in order to escape the hold-up problem (Berger et al., 2001; Rajan, 1992). Furthermore, from the point of view of the bank, the argument for risk sharing also favors multiple banking relationships for firms that borrow large volumes (Carletti et al., 2007). Finally, larger firms develop specific activities that may require funds from different types of financial institutions (Detragiache et al., 2000). The connection between firm size and banking relationships for SMEs is supported by extensive empirical evidence (Harhoff and Körting, 1998, in Germany, Berger et al., 2001, in Argentina, Ziane, 2003, for a sample of French SMEs, Cosci and Meliciani, 2006, and Tirri, 2007, for samples of Italian firms, and Iturralde et al., 2010, for Spanish SMEs). The positive link between size and the probability of having multiple banking relationships also exists for microenterprises (see Neuberger and Rähke, 2009, in Germany and Braggion and Ongena, 2011, for British data over the long run). We thus posit hypothesis H1.

H1: Smaller firms are less likely to engage in multiple banking relationships.

Age also plays a role: a young firm is more likely than an older firm to have a single banking relationship. First, it is difficult for a young firm to attract several banks because of the high information asymmetry regarding its growth prospects and its risk. Thus, a single relationship gives a young firm protection against credit rationing. Moreover, when a firm grows, this information asymmetry decreases because some financial information becomes public (see, for instance, Hyytinen and Pajarinen 2008). Consequently, the need for a single bank with high incentives to monitor becomes less important than the need for risk sharing and the search for new financing as the firm becomes older. The idea of a life cycle in banking relationships with the probability of multiple banking relationships increasing with the age of the borrower has been successfully tested in a majority of articles (e.g., Harhoff and Körting, 1998, in Germany, Farinha and Santos, 2002, for Portuguese SMEs, and Braggion and Ongena, 2011, using

British data). Neuberger and R athke (2009) confirm these results for German microenterprises. Thus, we posit hypothesis H2.

H2: Younger firms are less likely to engage in multiple banking relationships.

Third, the likelihood of being funded by several banks is impacted by firm performance. The theoretical literature provides two alternative approaches to explain this impact. On one hand, a single banking relationship gives the bank incentives to monitor the firm and to collect information about its performance and its risk (Fama, 1985; Greenbaum and Thakor, 1995; Haubrich, 1989). Thus, high-performing firms may benefit from a single relationship: they are protected against credit rationing, and their bank can apply better financing conditions. Furthermore, when a firm is performing well, banks have less need for risk sharing, whereas the duplication of monitoring is costly. Thus, banks that are financing high-performing firms are not willing to be part of multiple banking relationships (Carletti et al., 2007). Empirical evidence provides strong support for a negative relationship between SMEs' performance and the use of multiple banking relationships in several countries, including the United States (Detragiache et al., 2000), Belgium (Degryse and Ongena 2001), France (Ziane 2003), and Italy (Tirri, 2007 and Castelli et al., 2010). On the other hand, Sharpe (1990) shows that a single relationship provides an informational monopoly power that may render the firm captive. As a consequence, a firm may not benefit from low interest rates even if it is performing well, or it could be credit rationed if the bank suffers from a liquidity crisis (Detragiache et al., 2000). In this context, multiple banking relationships allow the firm to escape the informational monopoly power because at least two banks are well informed about its probability of success. For instance, Schenone (2010) and Hern andez-Canovas (2007) provide evidence that firms with more banking relationships are less financially constrained. Therefore, a high-performing firm may have an interest in developing multiple banking relationships.

Following the two theoretical approaches, we posit hypothesis H3a and alternative hypothesis H3b.

H3a: High-performing firms are less likely to engage in multiple banking relationships.

H3b: High-performing firms are more likely to engage in multiple banking relationships.

The level of default risk could also affect the choice between single and multiple banking relationships. On the one hand, a CEO who anticipates bankruptcy could favor multiple banking relationships for better support in case of financial distress during a debt renegotiation process. The presence of several banks allows risk sharing, protects banks from adverse selection and facilitates financial support from several creditors (Detragiache et al., 2000). Using a sample of Italian firms, Tirri (2007) shows that riskier firms are more likely to use multiple banking relationships. Also in Italy, Cosci

and Meliciani (2002) and (2006) find that the number of banking relationships increases with firms' leverage. Guiso and Minetti (2010), using US data, and Harhoff and Körting (1998) in Germany find that firms that are in financial distress have a higher probability of being engaged in multiple banking relationships.

On the other hand, the presence of several banks could also create free riding in monitoring (Carletti 2004) and could reduce the incentive for the main bank to seek information and to provide financial support to a firm in financial distress. Thus, a manager who anticipates bankruptcy could also be tempted to engage in a single banking relationship. In this vein, the model of Bolton and Scharfstein (1996) indicates that concentrated lending relationships facilitate debt renegotiation whereas multiple banking relationships generate negotiation costs and can lead to sub-optimal liquidation. In Germany, Brunner and Krahen (2008) find that a large number of banks generates problems of coordination in the resolution process and reduces its probability of success.

Following the two theoretical approaches, we posit hypothesis H4a and alternative hypothesis H4b.

H4a: Firms that anticipate financial distress are less likely to engage in multiple banking relationships.

H4b: Firms that anticipate financial distress are more likely to engage in multiple banking relationships.

Finally, because confidentiality is valuable for firms engaging in research and development, an innovative firm could be less inclined to disclose strategic information to its bank, especially in the case of multiple creditors (Yosha (1995) and Bhattacharya and Chiesa (1995)). Consequently, innovative firms are likely to prefer a single bank (Yosha (1995)). The empirical evidence is mixed. Bellucci et al. (2014) find that innovative Italian firms are less likely to suffer from credit rationing, which reduces their need to develop multiple banking relationships. However, Harhoff and Körting (1998), using a sample of German SMEs, and Detragiache et al. (2000) find a negative impact of innovation on the probability of having a single banking relationship. Following the theoretical results, we posit hypothesis H5.

H5: Innovative firms are less likely to engage in multiple banking relationships.

2.2. Approach Two: Multiple Banking Relationships and Trust

2.2.1. The Role of Trust in Banking Relationships

The issue of trust in banking relationships is still an under-researched issue in both finance and management⁴. In finance, studies in the field initially focused only on quantitative aspects of banking

⁴ In marketing, the impact of social interactions in relationships has traditionally been explored in light of what is a "good" customer relationship, which is considered to be an important determinant of perceptions of service quality (Zeithaml et al., 1988). Regarding trust, the theoretical background relies on the commitment-trust theory of relationship marketing, originally proposed by Morgan and Hunt (1994). To our knowledge, only Mukherjee and Nath (2003) apply this framework to analyze the specific issue of online banking relationships.

relationships (its duration or its lengths as measured by pre-existing financial services variables, see, e.g., Petersen and Rajan 1994, or Cole 1998, who rely on the NSSBF⁵ inquiry, a questionnaire applied to a large sample of US SMEs). A more recent stream of studies in finance tried to assess the social aspects of banking relationships. For instance, Lehman and Neuberger (2001) apply a questionnaire to loan officers to capture social aspects related to positive experiences in the past, willingness of the borrower to inform them about problems, the officers' obligations to the borrower and the stability of the relationship. Within this stream of literature, several works use a dummy variable extracted from surveys to proxy for trust: Harhoff and Körting (1998) test the impact of a binary "trust" variable (managers were asked to indicate to what extent they consider their banking relationship to be characterized by mutual trust); Hernández-Canovas and Martinez-Solano (2010) and Howorth and Moro (2012) ask managers whether they think that banks consider trust in granting loans; and Moro and Fink (2013) use a survey addressed to the loan officers to assess to what extent SMEs are considered trustworthy by their banks. Proxies of trust are used to explain the financing decisions made by banks (financing conditions for Harhoff and Körting (1998) and for Howorth and Moro (2012); the existence of credit rationing for Hernández-Canovas and Martinez-Solano (2010) and Moro and Fink (2013)). [Focusing on trust on the part of the bank is consistent with the theoretical framework for credit rationing and multiple banking relationships.](#) Trust in banking relationships as analyzed by this stream of literature refers to "calculative trust" (Williamson, 1993) ("calculus based") (Saparito et al., 2004): "a self-interest assumption refers to a trustor's confident belief that a trustee will act beneficially because it is in the trustees' self-interest to do so" (p.400). In practice, a bank will grant a loan to an SME if it believes (trust) in the ability of the SME to repay the loan. According to the seminal paper of Petersen and Rajan (1994) and following Williamson (1993), business relationships are instrumental and rationally self-interested.

However, as noted by Saparito et al. (2004), trust's role in commercial transactions remains a matter of debate. The management literature provides several definitions of trust⁶, but it is generally agreed that trust entails a positive expectation about a partner, suggesting that unpleasant outcomes are less likely (Lane and Bachmann, 1996). More precisely, Das and Teng (2001) suggest that trust concerns positive expectations regarding the other in a risky situation. [This definition is suitable to banking relationships. The lender is in the risky situation that it will not recover the lent money. The CEO is in a risky situation with regard to his/her main bank concerning the provision of lending or financial services necessary to maintain the firm's economic activity.](#) Two studies in management (Saparito et al., 2004; Hill and Scott,

⁵ National Survey of Small Business Finances.

⁶ [Sociologists have also questioned whether relational attributes play a role in economic transactions \(see Uzzi 1999\).](#)

2015) examine the issue of banking relationships in light of trust. They do not deny the existence of a calculus-based trust, but they differentiate it from relational trust, that is, trust above self-interested motivations. They successfully test the hypothesis that relational trust plays a stronger role in banking relationships than calculus-based trust. They rely on surveys applied to CEOs and thus take into account the point of view of the manager, which is neglected in the finance literature.

2.2.2 Hypotheses

Saparito et al. (2004) provide a specific framework to analyze the role of trust in bank-SME relationships. Self-interest trust is differentiated from relational trust and is defined as follows: “the trustee party perceives the trusted party (the trustor) as acting beyond the instrumental motives of advancing self-interest” (p.400). The authors set out to determine whether the components of relational trust matter in banking relationships in addition to calculus-based trust. They apply a questionnaire to both CEOs and loan officers, and they find that relational trust matters more than calculus-based trust. More specifically, relational trust leads to a preference to remain in a relationship rather than seek a potentially favorable alternative (likelihood of switching). In the same vein, Hill and Scott (2015) highlight the prevalent role of non-economic motives in the choice by a CEO of his/her bank. We rely on this alternative approach to analyze the issue of trust in the context of multiple banking relationships.

The framework provided by Saporito et al. (2004) appears to be suitable for studying the use of multiple banking relationships. This alternative approach takes into account the CEO as a customer of his/her bank and as a (even constrained) decision maker regarding the use of multiple banking relationships. We make the assumption that higher relational trust on the part of a CEO will have a negative impact on the development of multiple banking relationships. More precisely, we rely on the three explanations for the central position of relational trust in bank-small firm relationships developed by Saporito et al. (2004) to posit our hypotheses.

One primary dimension of relational trust is related to the customer orientation of the bank. Customer-oriented activities include availability, helpfulness and openness in communication (Butler, 1991). More specifically, a bank’s frequent social interactions with customers facilitate socioemotional relationships and thus generate relational trust. In contrast to Saporito et al. (2004), we analyze trust on the part of the CEO, not the bank, and we posit the following hypothesis:

H6: Higher perceived customer-oriented activities by the CEO have a negative impact on the use of multiple banking relationships

Another component of relational trust is the so-called “manager interface continuity” developed by Saporito et al. (2004). Personal stability over time in interactions and repeated interactions contribute to the development of relational trust. We thus propose hypothesis H7:

H7: Higher perceived management interface continuity by the CEO has a negative impact on the use of multiple banking relationships.

Finally, Saporito et al. (2004) also posit that relational trust represents a heuristic whereby SMEs act without calculation in accordance with their positive beliefs. In this context, the willingness to build a valuable relationship based on relational trust will overcome the eventual desire to develop multiple banking relationships for calculus-based motivations, that is, economic reasons such as optimizing financing conditions. Contrary to those authors, we do not propose a hypothesis about the likelihood of switching but about the use of multiple banking relationships.

H8: Higher willingness of the CEO to build a relational-based trust-based relationship has a negative impact on the use of multiple relationships.

2. Data and Univariate Analysis

2.1. Sources

Accounting data were extracted from a French database, ALTARES, provided by Dun and Bradstreet, which offers extensive coverage of privately held French firms. The ALTARES database contains comprehensive accounting and financial data, business sector codes, and the age of firms.

Qualitative data were obtained from a questionnaire that we designed. In addition to firms and managers' characteristics, the questionnaire inquired about investment policies and financing needs. Then, the managers were asked questions related to the characteristics of banking relationships: the use of single or multiple banks and several aspects of the quality of banking relationships, including a number of dimensions of the trust that the CEO feels toward the firm's main bank. The survey was sent by mail to managers of French SMEs in December 2012. It was addressed to the CEOs of the SMEs. A total of 908 managers opened the email. Phone calls were made to follow up on some partially completed questionnaires, leading to a sample of 94 SMEs. Of these 94 SMEs, 25 did not fully complete the section of the questionnaire regarding their banking relationships, and 13 firms had missing accounting data in ALTARES. Thus, the final sample comprises 81 enterprises for approach 1 and 69 firms for approach 2; see Table 1 (qualitative data are extracted from the survey applied in 2012, and quantitative data are extracted from ALTARES for the last year of closing before the survey, that is, 2011).

Insert table 1 about here

2.2. Descriptive Statistics

Table 2 provides descriptive statistics. The definitions of the variables are provided in Appendix A. Considering the three criteria required in the European definition of SMEs (workforce < 250 employees, net sales < 50 million euros, and total assets < 43 million euros), we note that the SMEs in the sample belong to the “small” range of SMEs: They exhibit a median workforce of 31 employees, median sales of 4.3 million euros and median total assets of 2.6 million euros. However, the standard deviations are equal to 29.20 employees for the workforce, 7.51 million euros for net sales and 4.86 million euros for total assets, so the potential influence of firm size on the choice between single vs. multiple banking relationships can still be captured (as in Neuberger and R athke, 2009, for a sample of German microenterprises). The sample firms appear to be quite mature, with a median age of 21 years. The median leverage of 63.9 percent is close to the threshold usually used in financial analyses to assess firms’ financial structure (two tiers of debt or one tier of equity). Regarding the business sector, the industrial sector is prevalent, with 43.1 percent of the SMEs in this business, followed by services (24.3 percent). Of the total, 16.8 percent answered yes to the following question: “Is your firm innovative according to the definition provided by the French Tax Code?”⁷ (defined as the variable “Innovation” below).

Insert table 2 about here

Regarding multiple banking relationships, the respondents were asked about the use of multiple banks (dummy variable Multibank): 74 firms reported multiple banking relationships (Multibank equals one), and 20 firms reported single banking relationships (Multibank equals zero). Thus, 79 percent of the firms in our sample reported multiple banking relationships. This result is consistent with, albeit a bit lower than, the data provided by Ongena and Smith (2000) and more recently by Castelli et al. (2010) for continental European countries: the latter report a multiple banking ratio of 95 percent for their sample of Italian SMEs, and the former report a percentage of 85 percent.

2.3. Variables and Univariate Analysis

2.3.1. Multiple Banking Relationships and Firms’ Characteristics (Approach One)

⁷ Under Article 44 sexies-0 A of the French Tax Code, a young innovative company is a SME if it has R&D expenditures equal to at least 15% of its deductible expenses for the fiscal year.

According to hypotheses H1 and H2, we posit that the age of the firm (Age) and its size (using Workforce, Assets and Sales) exhibit a positive relationship with the use of multiple banks (the definitions of the variables are provided in Appendix A). In hypotheses H3a and H3b, we assume contrasting expectations regarding the impact of performance on multiple banking relationships: the performance variables are one-year sales growth (Growth), return on assets (ROA) and return on equity (ROE). We constructed the instrumental variable VIROE to correct reverse causality (see below). We also assume contrasting expectations regarding anticipated default risk (hypotheses H4a and H4b). We use the following variables to proxy for this risk: the liquidity ratio (Liquidity) and the leverage ratio (Leverage). In addition, according to hypothesis H5, we assume that innovative firms are more likely to report a single banking relationship. We use a dummy variable (Innovation) that equals 1 if the SME answered “no” to the question “Is your firm innovative according to the definition of the French Tax Code?” and 0 otherwise.

Differences in financing and investment needs are also expected to have an impact – perhaps positive – on the use of multiple banks; thus, we include several control variables to capture these needs. These variables are the responses to the questions that we asked following the NSSBF inquiry (see, for example, Cole 1998). We use two proxies for financial needs: the dummy variable LT debt-need (which equals 1 if the firm has applied for a long-term loan since 2007) proxies for long term needs, and the ratio of working capital to net sales (Working capital) proxies for short-term needs. In addition, Invest-need is a dummy variable that equals 1 if the SME invested since the financial crisis and 0 otherwise.

Insert table 3 about here

Table 3 provides statistics and univariate analyses for the previously mentioned variables for the sample of 81 SMEs with available accounting data⁸. Among them, 80 percent (64) reported multiple banking relationships, and 20 percent (17) reported a single banking relationship. Important figures are related to the age and size of the firms: they highlight significant differences between firms with several banks and firms with one bank. More precisely, firms with several banks appear to be older and larger (in terms of Assets and Sales) than firms with one bank in terms of both the mean and median. This result is similar to the study by Neuberger and R athke (2009), who show a positive link between size and the number of banks for German microenterprises. These preliminary results are consistent with hypotheses H1 and H2. Univariate tests also highlight the significance of the variable Innovation, which is higher for the group of SMEs with multiple banks (20.6 percent of the firms with multiple banking relationships

⁸ We provide correlation matrices in Appendices B and C.

are innovative *versus* 6 percent of the firms with one bank). This result is not consistent with H8, but it is consistent with some of the empirical evidence provided by Harhoff and Körting (1998), Detragiache et al. (2000) and Cosci and Meliciani (2006), who find that innovation has a positive impact on the number of banks-

Regarding the control variables, firms with several banks exhibit higher short-term financing needs, with an average working capital ratio of 19.7 percent, than firms with one bank, which have an average working capital ratio of 5.3 percent. Finally, the variable Invest-need also differs significantly between the two groups: 47 percent of the respondents had invested since the financial crisis in the “single banking group,” whereas only 26 percent of the “multiple banking group” had invested. Thus, it appears that SMEs that reported a single banking relationship were not constrained in terms of investments over the period.

2.3.2. *Multiple Banking Relationships and Trust (Approach Two)*

The variables presented in this approach are extracted from the responses to the survey addressed to CEOs. To assess the dimension of perceived customer orientation of the bank by the CEO (H6), we exploit three questions from the survey. First, the idea of availability and openness in communication is captured by a proxy for the frequency of exchanges between the CEO and the bank: The dummy variable Frequency equals one if the SME answered “yes” to the question “Do you have exchanges on at least a weekly basis with the loan officer of your main bank?” and zero otherwise. To assess openness in communication, CEOs were also asked to answer the following question: “Do you know the criteria used by your bank in the rating process?” Rating knowledge equals one if the CEO thinks that he has knowledge of the rating process used by the firm’s main bank and zero otherwise. Finally, the variable Support is designed to capture the issue of helpfulness. This dummy variable is derived from the answer to the following question: “Do you think that your bank will support your firm in the context of financial difficulties?”

We capture the issue of management interface continuity (H7) using the distance of the banking relationship. This dummy variable equals one if the SME reports that its loan officer is located in a business center and zero if the officer is located in a bank branch. Distance is treated in the finance literature as a dimension of the quality of the banking relationship on the part of the bank (Degryse and Ongena 2005). In the management literature, Hill and Scott (2015) rely on a “convenience” variable that includes the geographic location of the bank branch, but as an instrumental self-interest component of trust (physical proximity is convenient for the CEO and a driving factor of the choice of the main bank). Here, we use distance as a proxy of manager interface continuity: the closer the CEO is to the loan officer,

the higher is the manager interface continuity. Thus, distance captures not only geographic convenience for the CEO but also an opportunity to have a closer relationship with the loan officer than if the loan officer was located in a business center (in France, bank branches also follow personal accounts in addition to professional accounts, which creates more interaction, especially when the CEO's personal accounts are also located at the branch).

Third, we assess the willingness to build a relational-based trust relationship (H8) using the variable Rate. Rate is a dummy variable that equals one if the manager answers "no" to the following question: "Do you systematically look for the lowest interest rate when applying for credit?" Rate equals zero if the manager's aim is always to find a lower rate by seeking competition among banks.

Finally, we use two control variables. The first is Bank Knowledge. Bank Knowledge equals one if the manager thinks that he has knowledge about how a bank works and zero otherwise. The second variable is CEO tenure: this dummy variable equals one if the CEO has been in the position for more than five years (long-term position) and zero otherwise. We assume that CEO tenure is likely to impact the CEO's social interaction with the bank. A stream of the SME literature in finance analyzes the financing decisions of SMEs in light of their CEOs' demographics. For instance, Bruns and Fletcher (2008) find a positive impact of CEO tenure on the probability of the loan officer supporting the granting of credit for Swedish SMEs, whereas Orens and Reheul (2013) use CEO tenure as an explanatory factor for the cash holdings of Belgian SMEs. The variable "Years in business" is also used as a control variable in the management study by Hill and Scott (2015).

Insert table 4 about here

Table 4 exhibits the results of the univariate analysis on the sample of 69 firms that fully completed the banking relationship section of the survey. Among them, 59 (85 percent) have multiple banking relationships, and 10 (15 percent) have a single banking relationship.

Regarding the full sample of 69 firms, it appears that 55.1 percent of the respondents reported knowledge about the general working process of a bank (Bank knowledge), but of the respondents, only 37.7 percent answered that they have knowledge about the rating process of their bank (Rating knowledge). A vast majority of the respondents (80.6 percent) reported regular exchanges (on a weekly basis) with the loan officer of their main bank (Frequency). A total of 23% of the respondents believe in the support of their main bank in the context of financial difficulties (Support). In addition, only 30.3 percent of the respondents answered that they are not systematically looking for the lowest price when applying for a loan (Rate). Almost one-half of the SMEs in our sample work with a loan officer located

in a business center (the variable Distance has a mean of 44.9 percent), and the others work with a loan officer housed in a bank branch. Finally, for 89.5 percent of the SMEs, the CEOs have had a long tenure.

The univariate analysis indicates differences between the two groups. First, regarding knowledge, 10 percent of the respondents in the “single banking” group reported knowledge of the rating process (Rating knowledge), whereas 42.4 percent of the respondents in the “multiple banking” group reported such knowledge. These results are consistent with the analysis of the control variable Bank knowledge, which is also significantly higher for the “multiple banking” group than for the “single banking” group. To summarize, these preliminary results tend to support the idea that firms with one bank exhibit lower knowledge of the bank process in general than firms with multiple banks. Regarding the distance variable, only 10 percent of the respondents in the “single banking” group work with a loan officer located in a business center. This result implies that conversely, 90 percent of the respondents in this subsample work with a loan officer located in a bank branch, thus with a lower distance. For the multiple banking subsample, the distance is significantly higher because 50.8 percent of the respondents work with a loan officer located in a business center. In addition, the dummy variable Rate is significantly higher for the single bank group: in this group, 60 percent of the respondents reported that they do not search for the lowest loan price; conversely, more than 75 percent of the respondents in the “multiple banking” group search for the lower interest rate when applying for credit. The respondents in the “single banking” group report higher expectations than those in the “multiple banking” group regarding support from the bank in the case of financial difficulties (40% versus 20.7%). Finally, regarding the second control variable, SMEs with several banking relationships also exhibit a significantly higher percentage of long-tenured CEOs (93.1 percent) than SMEs with one bank relationship (77.8 percent).

3. Empirical Findings

3.1. The Econometric Specification

Econometric Model and Estimation Method. The dependent variable is a dummy variable (Multibank); Multibank equals one if the firm has multiple banking relationships and zero if the firm has a single banking relationship. We use the two sets of explanatory variables to test the previously defined analytical approaches. We run models for approach one and models for approach two, and we also run combined models by integrating the explanatory variables of the two analytical approaches.

We use a bivariate probit model. y_i is the dependent variable for firm i , x_i is the vector of independent variables for firm i , and β is the vector of coefficients.

$$\begin{aligned} y_i &= 1 & \text{if } \beta x_i + \varepsilon_i > 0 \\ y_i &= 0 & \text{if } \beta x_i + \varepsilon_i \leq 0 \end{aligned} \tag{1}$$

For each model, the vector β is estimated using the maximum likelihood. There is no important problem of multicollinearity (the variance inflation factors are all less than 10). We corrected the models for heteroskedasticity by estimating Huber-White standard errors.

The McFadden likelihood ratio index (McFadden R^2) measures the goodness of fit of our estimated models. The global significance of our model is assessed using the likelihood-ratio test. We provide two other indicators of the goodness of fit: the Akaike information criterion (AIC) and the rate of correct classification. The lower the criterion is, the better the goodness of fit⁹.

Treatment of Missing Data. The size of our sample is reduced because of missing data (see Table 1). Approach one suffers from missing accounting data: among 94 firms, accounting data are available for only 81. Furthermore, approach two suffers from a lack of responses to the survey. Among 94 firms, only 69 answered the questions about banking relationships. Finally, 59 firms out of 94 answered the questions about banking relationships *and* provided accounting data, making difficult to integrate the two approaches in a single model. A selection bias may exist, especially concerning the accounting data. In order to correct for this bias, we impute values for missing data (as in, for instance, Åstebro and Bernhardt, 2003; Fairlie and Robb, 2007; Lee and Marsh, 2000). The imputation of missing values also allows us to test the robustness of our econometric models of approaches one and two and to run a combined model integrating the two approaches.

We use two different methods for the imputation of missing data: regression imputation and multiple imputation¹⁰. First, in regression imputation, we consider the variables with missing data one by one as dependent variables of a regression. A linear regression is used for continuous variables, and a logistic regression is used for dummy variables. The imputed variables are the values predicted by these regressions. Second, we use a multiple imputation method described by Rubin (1976; 1987), more precisely, multivariate imputation by chained equations (Van Buuren and Groothuis-Oudshoorn, 2011). Missing data are imputed by considering the statistical links between the different variables thanks to an iterative assessment. For the continuous variables, we use the predictive mean matching method; for the dummy variable, we use a linear discriminant analysis. Treatment of missing data allows us to build two samples of 94 observations for each econometrical model assessed.

⁹ For more details, see Greene (2011).

¹⁰ See, for instance, Allison (2001) and Chen and Astebro (2003) for more details.

Treatment of Reverse Causality. The theoretical framework assumes that the performance of a firm explains the choice between single and multiple banking relationships (hypotheses H3a and H3b). However, some empirical studies also show that multiple banking relationships may influence firm performance. Multiple banking relationships can soften the control that banks exert and, as a consequence, reduce managers' incentives to exert significant effort (Foglia et al., 1998). An indirect effect can also play a role because multiple banking relationships influence the cost and availability of credit (Bonfim et al., 2009; Shikimi 2013). Moreover, Castelli et al. (2010) find a negative impact of multiple banking relationships on SMEs' performance. Thus, a double causality can exist between the dependent variable and the independent variable ROE because the number of banks in 2011 could explain the financial return in 2011. To avoid this problem of reverse causality, we construct an instrumental variable. We consider the average financial return from 2007 to 2010 (VIROE, see Appendix A). This past value cannot be influenced by the current value of the dependent variable.

3.2. Firms' Characteristics and the Use of Multiple Banking Relationships

According to the first analytical approach (hypotheses H1 to H5), we estimate the following model:

$$Prob(MULTIBANK = 1) = F(SIZE, AGE, PERFORMANCE, RISK, INNOVATION, CONTROL VARIABLES)$$

Table 5 provides the results of the probit models. A first model (model I) is run on the initial sample with the available accounting data (column Ia). Then, this model is run on the full sample of 94 SMEs after imputation of the missing data via multiple imputation (column Ib) and regression imputation (column Ic). A second model (model II) uses VIROE instead of ROE to control for reverse causality. It is run on the initial sample of 81 firms (column IIa); then, we control for robustness after imputation of the missing data by multiple imputation (column IIb) and regression imputation (column IIc). The McFadden R² ranges between 26.42 percent and 36.96 percent. The models exhibit rates of reclassification that range between 81.2 percent and 86.2 percent.

Insert table 5 about here

Several results emerge. First, according to hypothesis H1, we find that the size of firms (Assets) increases their probability of engaging in multiple banking relationships. This result is in line with the empirical literature (Berger et al., 2001; Harhoff and Körting, 1998; Ziane, 2003). Second, contrary to hypothesis H2, firm age does not play a significant role in the probability of having multiple banking relationships. Therefore, we drop this variable from the model. Third, according to hypothesis H3b, we find that the best-performing firms – based on return on equity (ROE) – are more likely to engage in

multiple banking relationships. This result is robust when VIROE is used instead of ROE. Thus, the anticipated positive consequence of a single relationship seems to be outweighed by the desire for protection against monopoly power. Contrary to previous studies (Castelli et al., 2010; Degryse and Ongena, 2001; Detragiache et al., 2000; Ziane, 2003), our findings tend to support the idea that during the 2007-2012 period, despite the persistence of the financial crisis, high-performing firms tried to protect themselves against the hold-up problem.

The leverage ratio (Leverage) appears to have a positive impact on the decision to engage in multiple banking relationships. As we used Leverage as a proxy for anticipated default risk, this result provides some support to hypothesis H4b: a firm that anticipates financial distress could favor multiple banking relationships to obtain better support in case of default. On the part of the bank, higher leverage is also consistent with a higher need to share the risk. Our result is consistent with the findings of Harhoff and Körting (1998), Iturralde et al. (2010), and Braggion and Ongena (2011).

Contrary to hypothesis H5, the innovative characteristic of firms (variable Innovation) has a positive impact on the use of multiple banking relationships. This result is in line with empirical evidence that shows that innovative firms are not reluctant to disclose information to multiple lenders (Cosci and Meliciani, 2006; Detragiache et al., 2000; Harhoff and Körting, 1998). Moreover, the desire of the main bank to share risk with other lenders is higher for innovative firms that appear to be more risky and that have few tangible assets, making it more difficult for them to provide collateral.

In addition, the control variables provide interesting results. The variable Working capital, a proxy for short-term financing needs, exhibits a positive relationship with the use of multiple banks: SMEs with high short-term financing needs incur a higher risk of credit rationing; thus, they are more likely to work with multiple banks. The variable Invest-need has a negative impact on the use of multiple banks: SMEs that invested during the crisis will perhaps have fewer financing needs, leading to less use of multiple banks at the time they completed the survey. An alternative explanation provided by the literature (Von Thadden, 1995) is that investment financing requires a single banking relationship because monitoring activity and time smoothing of profits make long-term financing possible for banks.

3.3. Trust and the Use of Multiple Banking Relationships

According to the second analytical approach, we test models that include proxies for trust and two control variables (Bank knowledge and CEO tenure).

$$Prob(MULTIBANK = 1) = F(TRUST, CONTROL VARIABLES)$$

Table 6 provides the results of the probit models. The first model (model III) is performed on the sample of SMEs with available responses to the survey (column IIIa). Then, we control for the robustness of this model using the full sample of 94 SMEs after the imputation of missing data using both multiple imputation (column IIIb) and regression imputation (column IIIc). Model IV presents an alternative empirical model of approach two, including CEO tenure. Model IV is run on the initial sample of firms (column IVa); then, we control for the robustness of model IV after imputation of missing data with both multiple imputation (column IVb) and regression imputation (column IVc).

Insert table 6 about here

The McFadden R^2 ranges between 31.39 and 50.41 percent. The models exhibit rates of reclassification that range between 85.1 percent and 92.6 percent.

A first finding is the strong impact of two proxies of trust, Rate and Distance. Regarding the proxy for relational trust “Rate”, the model highlights, as expected in hypothesis H8, a positive impact of a manager’s desire to build a valuable relationship with his/her main bank on the likelihood of maintaining a single banking relationship. When the manager’s aim is not to systematically find a lower rate, he/she is more likely to have a single banking relationship. When the manager trusts the firm’s main bank, he/she wants to develop a relationship founded on something other than price. This result appears to provide support for the role of relational trust in banking relationships, in the spirit of Saporito et al. (2004). Another significant variable is the variable Distance. When the manager of an SME is less geographically distant from his/her loan officer (that is, when the officer is located in a business center rather than in a branch), he/she is less likely to engage in multiple banking relationships. This result is consistent with our hypothesis H7 regarding the impact of higher manager interface continuity on the use of multiple banking relationships.

The proxies for perceived customer orientation of the bank reveal more unexpected results. First, the proxy Rating knowledge has a positive impact on the use of multiple banks. This impact is contrary to our expectation (H6): if the CEO reports knowledge of the rating process of the firm’s main bank, he/she is more likely to engage in multiple banking relationships. A possible explanation for this result is that higher transparency from the main bank may lead SMEs to boost competition between different banks. Another explanation is provided by the financial literature rather than the alternative “trust” approach. Consistent with Sharpe (1990), if a manager knows the rating process well, he/she will become conscious of the hold-up phenomenon and try to avoid it by developing multiple banking relationships. The variable Frequency also has a positive, albeit not very significant, impact on the use of multiple banking

relationships, contrary to our expectations (H6): we anticipated that frequent exchanges between the firm and its main bank would improve trust. However, this proxy remains imperfect because the survey does not make us aware of the nature of the exchanges. One possible explanation for this result is that this variable may reveal some financial problems (particularly regarding the operations of the account), thus leading to a search for other lenders.

Finally, CEO tenure as a control variable also appears to have a positive impact on the use of several banks: when the CEO has had a long tenure and is thus more experienced, he/she is more likely to engage in multiple banking relationships. This result may be explained by the fact that the experience of the CEO enhances trust from banks, thereby making it easier for firms to engage in multiple relationships.

3.4. Firms' Characteristics and Trust: The Effects of Interactions on the Probability of Engaging in Multiple Banking Relationships

Using imputation of missing data, Table 7 provides models that include both variables from approach one and variables from approach two from the common sample of 94 SMEs (with imputation of missing data). We run four different global models combining the models from approaches one and two. We combined model I with models III (model V) and IV (model VII). Then, we combined model II with models III (model V) and IV (model VIII). Columns Vb, VIb, VIIb and VIIIb present the models run on the sample built by multiple imputation. Columns Vc, VIc, VIIc and VIIIc presents the models run on the sample built by regression imputation¹¹.

Insert table 7 about here

Insert table 8 about here

Table 8 provides a comparison of the goodness of fit values of the models derived from approach one, from approach two and from the combined models regarding their ability to explain the presence of single versus multiple banking relationships. The results show that trust (approach two) provides a better explanation for this choice than the characteristics of the firms (approach one): the McFadden R^2 is higher (except for one regression) and the AIC (Bayesian Information) values are always lower, while the rates of correct classification are always higher. For instance, the best rate of correct classification is provided by approach one applied to the sample imputed by regression: 92.6 percent (Model I).

¹¹ Models Vb and Vc are the combination of models Ib and IIIb and models Ic and IIIc, respectively. Models VIb and VIc are the combination of models IIb and IIIb and models IIc and IIIc, respectively. Models VIIb and VIIc are the combination of models Ib and IVb and models Ic and IVc, respectively. Models VIIIb and VIIIc are the combination of models IIb and IVb and models IIc and IVc, respectively.

Furthermore, tables 7 and 8 indicate that the combined models improve the explanation of multiple banking relationships. First, the explanatory variables of the two approaches remain significant in the combined models. The explanatory powers of the global models are high, with McFadden R^2 values ranging between 57.47 and 71.84 percent. The rates of correct classification vary between 88.3 and 94.7 percent. The AIC is lower for the combined models. In summary, it appears that the two explanatory approaches are not mutually exclusive because combining the financial characteristics of SMEs with proxies for trust improves the ability of the model to explain the use of banking relationships by SMEs.

4. Discussion

4.1. Overview

In France, similar to most countries in continental Europe, a vast majority of SMEs are strongly dependent on banks for their financing, making the development of multiple banking relationships a key issue for both actors. Using a unique dataset provided by a survey completed by the CEOs of French SMEs, we analyze the probability of SMEs engaging in single or multiple banking relationships. We used two analytical approaches: the first approach, based on firms' characteristics, is traditionally used in the finance literature, whereas the second approach, developed in the management literature, offers an alternative theoretical framework based on the concept of relational trust on the part of a CEO-customer. We first show the role played by some characteristics of the firm in the decision to engage in multiple banking relationships. In line with the previous literature, SMEs' size has a positive influence on the probability of engaging in multiple banking relationships in our sample. It also appears that high-performing firms are more likely to develop multiple banking relationships to protect themselves from the extraction of informational rent by their main banks. In line with some empirical studies, we show that innovative firms are more inclined to engage in multiple banking relationships, perhaps because they exhibit higher risk and have few tangible assets; thus, their main bank wants to share this risk with other lenders. Second, we highlight more original results, that is, the strong role played by some dimensions of relational trust in the use of multiple banking relationships. Our proxy for the willingness to build relational trust plays a notable role in the decision to develop or not develop multiple banking relationships: when the manager only tries to find the lowest interest rate in a transaction, he/she is more likely to develop multiple banking relationships. Conversely, when he/she believes in the virtue of a long-term relationship, the CEO is more likely to develop a relationship with a single bank. Moreover, we highlight the impact of distance as a proxy for perceived bank customer orientation by the CEO: when the manager is followed by a loan officer in a bank branch, he/she is less likely to engage in multiple

banking relationships. Contrary to our expectations, knowledge of CEOs regarding the rating process of the firms' main banks appears to be a double-edged sword for banks: SMEs that benefit from transparency appear to be more likely to engage in multiple banking relationships. This result questions whether transparency is used by SMEs as a tool to boost competition between lenders rather than being valued as an antecedent of trust.

Our empirical analysis originally highlights a complementarity of the two approaches rather than the prevalence of one approach over the other to explain the use of multiple banking relationships by SMEs: when we add firms' characteristics and the qualitative variables into the models, the explanatory power is enhanced. At first glance, the two approaches seem to be difficult to reconcile. The finance literature analyzes calculus-based motivations on the part of the lending bank and the CEO. The social dimension is mainly conveyed by the concept of soft information, but assessing it is a challenge in financial empirical studies. For instance, Grunert and Norden (2010) build a "management skills" index that combines CEO characteristics (age, education of the owner, business experience). This index, despite its strong predictive power for the financing conditions of SMEs, tells us nothing about the production of soft information via social ties and the role of the CEO as a transmission channel. However, a refined analysis of our results comforts an economic interpretation of the complementarity. Regarding the use of multiple banking relationships, our results reveal a mirror effect of some variables that are taken into account in the two approaches, but that have different connotations. For instance, the variable Distance plays a role in capturing manager interface continuity on the part of the CEO in our study. This result is consistent with studies in finance showing that on one side (the lending bank), a lower distance leads to better financing conditions and credit availability for SMEs (Degryse and Ongena, 2005; Alessandrini et al., 2009). Similar to Hill and Scott (2015), we highlight the role of relational trust in banking relationships. The authors themselves make the link between the CEO-customer and the bank lender without testing it. They show that CEO trust is a transmission channel for soft information and a driving factor in the choice of bank. However, they note that "bankers considering loans to mid-market firms without public debt ratings often try to leverage social ties to increase the flow of private information and so their comfort in making lending decisions" (p.175). Ultimately, our results provide some support to the idea that linking explanations derived from several disciplines may be helpful to understand a phenomenon in more depth.

4.2. Limitation and extensions

We recognize that several cautionary notes pertaining to our research design and methodology might be raised. Addressing the issues discussed in this section might be a potentially fruitful direction to enhance our understanding of the use of multiple banking by SMEs.

First, one weakness of the study is the small size of the sample compared with the samples in existing studies in the field. The response rate from CEOs, combined with missing financial data for some responding firms, led to 94 exploitable observations. Regarding this size, we respected the rule of 10 observations per exogenous variable, which can be softened for discrete dependant variable models (see, for instance, Vittinghoff, E. & McCulloch, C.E., 2007). We also used two different treatments for the imputation of missing data, and our results appeared to be robust over these estimations. Future research, however, could develop surveys conducted at several points in time, thus allowing the collection and analysis of time-series data.

Second, we call into question the generalizability of our research findings. The percentage of firms reporting multiple banking relationships in our sample is consistent with that in existing studies performed in other continental European countries (Ongena and Smith, 2000; Castelli et al 2010). If France appears to be representative of the use of multiple banking in Europe, more in depth analyses deserve to be performed to capture the impact of the type of bank on this phenomenon. At the French level, Ziane (2003) shows that the type of bank (mutual/cooperative versus non-cooperative) lowers the number of banks for firms that maintain long-term lending relationships. Ziane's study is more than ten years old, however, and the banking system in Europe is increasingly characterized by the presence of large and universal banks. All these banks have adopted the Basel reforms with the Internal Ratings-Based Approach, thus alleviating the specificities between them. Among other consequences of the Basel reforms are the increased weight of hard information and organizational changes in the lending process. Interestingly, our results show that despite the prevalent role of scoring, social ties and expectations conveyed by CEOs to their main banks still play a role in their decision to have several lending partners. The geographical extension of the study outside Europe remains a fruitful issue, however, as some differences between banking systems still exist that may impact the use of multiple banking. Gleissle (2014) highlights that France is among the European countries that exhibit a higher number of banks. Comparing the European system with the US system, which is characterized by three levels of banks (federal, regional, and local in one state), might provide different driving factors explaining the use of multiple banking by SMEs. Lastly, in emerging countries where the banking system is characterized by a vast majority of state-owned banks (for instance, in China or in Brazil), SMEs may also take a different

approach to the use of multiple banking relationships. Thus, a “law and finance” international survey in the spirit of La Porta et al. (2004) dedicated to capturing the factors driving the use of multiple banking (both financial characteristics of firms and trust components) appears to be a promising research issue.

Lastly, this study was conducted five years after the beginning of the financial crisis. The financial vulnerability of banks increased over this period, and the volume of loans they granted decreased. However, according to Kremp and Sevestre (2013), this decrease appears to have been generated by a decrease in demand rather than by pure credit rationing. Thus, this article helps to investigate the “demand size”, that is, the CEOs’ perspective of the banking relationship in a context of increasing uncertainty that makes the relationship worthwhile for the two players (Albertazzi and Marchetti 2010).

4.3. Conclusion

This study provides original results on the use of multiple banking relationships by French SMEs and examines the interactions and links between two disciplinary fields. There is large body of scholarship on banking relationships and especially multiple banking relationships in finance, whereas the issue remains under-researched in management. However, our results must be interpreted with caution because of the small sizes of the samples used. One promising extension could be performed on larger samples regarding CEO demographics. The inclusion of gender, education or the extent to which a firm is family-owned as driving factors of the use of multiple banks deserves to be pursued in greater depth (see D’Aurizio et al., 2015, for the interaction between the status of family firms and the production of soft information). Another extension via case studies could be to focus, for fragile SMEs, on the number of banks and on the composition of the banking pool in the case of multiple banking relationships.

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Table 1
Composition of the sample

Steps	Sample size
SMEs that opened the email	901
SMEs that answered the questionnaire (after phoning)	94
SMEs with missing data in ALTARES	(13)
Sample of SMEs with accounting data	81
SMEs with missing responses about the banking relationship	(25)
Sample of SMEs with data on the banking relationship	69

Table 2
Descriptive statistics

	Observations	Mean	Median	St.Dev.	Percentage
Workforce	94	36.44	31.00	29.20	
Sales (<i>in M€</i>)	81	7.07	4.25	7.51	
Assets (<i>in M€</i>)	81	4.05	2.60	4.86	
Age (<i>in years</i>)	94	25.85	21.20	14.45	
Leverage	81	0.65	0.64	0.30	
Multibank	94				78.90
Firms by business sector	94				43.10
Industrial					24.30
Services					17.90
Trade					4.20
Transportation					10.50
Building					
Innovation	94				16.80

The sample consists of 94 French SMEs for the year 2011. Variable definitions are provided in Appendix A. This table reports means, medians, and standard deviations.

Table 3
Univariate analysis of firms' characteristics

	Full sample			SMEs with multiple banks Multibank=1		SMEs with one bank Multibank = 0			
	Mean	Median	St.Dev.	Mean	Median	Mean	Median		
Observations	81			64		17			
Workforce	36.300	31.500	26.340	36.594	32.500	35.125		31.000	
Assets	4.510	2.601	4.866	5.116	3.385	2.279	**	1.450	**
Sales	7.071	4.259	7.511	8.062	4.869	3.340	**	3.066	*
Age	26.719	21.452	14.640	27.764	22.011	22.788		19.518	*
Growth	0.086	0.070	0.222	0.083	0.079	0.097		0.029	
ROA	0.025	0.032	0.122	0.020	0.033	0.044		0.000	
ROE	-0.004	0.075	0.722	0.013	0.075	- 0.070		0.087	
VIROE	0.091	0.101	0.111	0.094	0.099	0.082		0.132	
Liquidity	1.713	1.451	0.921	1.682	1.414	1.832		1.492	
Leverage	0.653	0.647	0.305	0.667	0.660	0.601		0.576	
Innovation	0.825		0.382	0.794		0.940	*		
LT debt-need	0.429		0.498	0.459		0.313			
Working capital	0.167	0.098	0.341	0.197	0.136	0.053	*	0.059	*
Invest-need	0.309		0.465	0.266		0.470	*		

The sample consists of 81 French SMEs for the year 2011. The variable definitions are provided in Appendix A.

This table reports means, medians, standard deviations, and tests of differences in the means and medians between firms with one bank and firms with several banks (Student t-statistics tests for differences in means and Wilcoxon z-statistics tests for differences in medians).

***, **, * denote that the difference in mean (median) for characteristics of the firms with one bank versus several bank samples is significant at the 1%, 5%, or 10% level, respectively.

Table 4
Univariate analysis on banking relationship characteristics

	Full sample	SMEs with multiple banks Multibank=1	SMEs with one bank Multibank = 0
	Mean	Mean	Mean
Observations	69	59	10
Frequency	0.806	0.825	0.700
Rating knowledge	0.377	0.424	0.100**
Support	0.235	0.207	0.400*
Distance	0.449	0.508	0.100**
Rate	0.303	0.250	0.600*
Bank knowledge	0.551	0.593	0.300*
CEO tenure	0.895	0.931	0.778*

The sample consists of 69 French SMEs for the year 2011. Variable definitions are provided in Appendix A.

This table reports means, medians, standard deviations, and tests of differences in means (Student t-statistics) between firms with one bank and firms with several banks. ***, **, * denote that the difference in means for characteristics of the firms with one bank versus several bank samples is significant at the 1%, 5%, or 10% level, respectively.

Table 5. Multiple banks and firms' characteristics (Approach one)

Models	(Ia)	(Ib)	(Ic)	(IIa)	(IIb)	(IIc)
Assets	0.242*** (2.597)	0.218*** (2.677)	0.186*** (2.599)	0.253*** (2.662)	0.262*** (2.745)	0.192*** (2.338)
ROE	0.740*** (2.729)	0.751*** (2.848)	0.609*** (2.648)			
VIROE				2.208** (2.248)	1.952** (2.559)	2.117** (2.334)
Leverage	3.425*** (2.978)	2.812*** (3.072)	2.190*** (2.662)	3.727** (3.152)	4.094*** (3.725)	3.666*** (3.712)
Innovation	-1.384* (-1.925)	-1.638** (-2.030)	-1.532** (-2.444)	-1.069** (-2.160)	-0.892* (-1.873)	-1.358*** (-2.946)
Working capital	3.771*** (2.160)	3.637** (2.432)	1.770* (1.818)	3.932** (2.355)	3.782*** (2.759)	4.159*** (3.476)
Invest-need	-0.968** (-2.068)	-0.971** (-2.396)	-1.019*** (-2.751)	-0.649 (-1.424)	-0.942** (-2.301)	-1.153*** (-2.801)
Intercept	-0.788 (0.474)	-0.107 (-0.107)	0.392 (0.4186)	1.213** (2.373)	-1.930* (-1.847)	-1.089 (-1.216)
Observations	80	94	94	66	94	94
McFadden R ²	33.19%	34.16%	26.42%	36.96%	36.28%	36.47%
AIC	69.29	78.07	85.60	58.60	76.00	75.82
Chi square \square	27.46*** (0.01%)	33.24*** (0.00%)	25.71*** (0.03%)	26.15*** (0.02%)	35.31*** (0.00%)	35.49*** (0.00%)
Rate of correct classification	81.2%	84.0%	83.0%	83.3%	81.9%	86.2%

The sample consists of 94 French SMEs for the year 2011. The dependent variable is the binary variable Multibank. Variable definitions are provided in Appendix A. All models have been estimated using probit regressions based on standard errors adjusted for heteroskedasticity (Huber-White standard errors). Regressions Ia to Ic consider ROE as a proxy for performance; regressions IIa to IIc consider an instrumental variable (VIROE: average ROE over the 2007-011 period). Regressions Ia and IIa are run on the subsamples with available answers (including 80 and 66 firms, respectively). Regressions Ib, IIb, Ic and IIc are run on the full sample after imputation of missing data with multiple imputation (models Ib and IIb) and with regression imputation (models Ic and IIc). The z-values are in parentheses. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level.

\square Likelihood-ratio test, probabilities are in parentheses.

Table 6. Multiple banks and banking relationship characteristics (Approach two)

Models	(IIIa)	(IIIb)	(IIIc)	(IVa)	(IVb)	(IVc)
Frequency	0.922 (1.543)	1.058** (2.167)	0.879 (1.343)			
Rating knowledge	1.567*** (3.080)	1.361*** (3.165)	2.047*** (3.890)	1.165** (1.993)	1.184*** (2.664)	1.686*** (2.743)
Distance	1.348* (1.647)	1.646** (2.121)	1.691** (2.052)	1.243** (1.994)	1.353*** (2.631)	1.479** (2.507)
Rate	-0.830* (-1.891)	-1.025*** (-2.859)	-1.532*** (-3.837)	-0.929* (-1.878)	-0.889*** (-2.589)	-1.539*** (0.0003)
CEO tenure				1.408*** (1.987)	0.505 (0.880)	1.320** (2.274)
Intercept	-0.127 (-0.231)	-0.333 (-0.755)	-0.0623 (-0.102)	-0.731 (-1.197)	0.106 (0.187)	-0.451 (-0.888)
Observations	65	94	94	50	94	94
McFadden R ²	31.39%	34.93%	50.41%	37.63%	33.61%	48.30%
AIC	48.30	73.32	58.26	39.40	74.61	60.31
Chi square χ^2	17.52 (0.15%)	33.99 (0.00%)	49.05 (0.00%)	17.74% (0.14%)	32.70 (0.00%)	47.00 (0.00%)
Rate of correct classification	89.2%	86.2%	92.6%	90.0%	85.1%	91.5%

The full sample consists of 94 French SMEs for the year 2011. The dependent variable is the binary variable Multibank. Variable definitions are provided in Appendix A. All models have been estimated using probit regressions based on standard errors adjusted for heteroskedasticity (Huber-White standard errors). Regressions IIIa to IIIc consider Frequency as a proxy for banking relationships; regressions IVa to IVc consider CEO tenure. Regressions IIIa and IVa are run on the subsamples with available answers (including 65 and 50 firms, respectively). Regressions IIIb, IVb, IIIc and IVc are run on the full sample after imputation of missing data with multiple imputation (models IIIb and IVb) and with regression imputation (models IIIc and IVc). The z-values are in parentheses. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level.

χ^2 Likelihood-ratio test, probabilities are in parentheses.

Table 7. Multiple banks, firms' characteristics and banking relationship characteristics (combined models)

Models	(Vb)	(Vc)	(VIb)	(VIc)	(VIIb)	(VIIc)	(VIIIb)	(VIIIc)
Assets	0.253** (2.263)	0.208 (1.361)	0.159** (2.088)	0.036 (0.485)	0.234 (1.612)	0.203 (1.411)	0.136 (1.503)	0.063 (0.764)
ROE	1.932*** (3.444)	2.976*** (2.957)			1.123*** (2.632)	2.675*** (3.161)		
VIROE			2.426*** (2.789)	3.330*** (2.586)			2.523*** (3.041)	3.297*** (2.710)
Leverage	3.750*** (3.011)	4.392*** (3.217)	3.371*** (2.864)	3.202*** (2.718)	5.140*** (3.045)	4.419*** (3.389)	3.931*** (3.517)	3.675*** (3.243)
Innovation	-4.422** (-2.450)	-6.774** (-2.313)	-1.288* (-1.865)	-1.685* (-1.905)	-4.903** (-2.207)	-5.885** (-2.208)	-1.243* (-1.801)	-1.524* (-1.895)
Working capital	5.380** (2.536)	2.955*** (2.603)	3.371** (2.345)	4.137** (2.063)	6.062** (2.300)	2.647** (2.204)	4.039** (2.287)	4.053** (2.339)
Invest-need	-1.569** (-2.437)	-1.839*** (-2.941)	-1.117** (-2.138)	-1.060* (-1.760)	-2.084*** (-2.578)	-1.699*** (-2.584)	-1.129** (-2.248)	-1.093** (-2.128)
Frequency	1.778*** (2.818)	1.324 (1.600)	1.156** (1.964)	1.205* (1.754)				
Rating knowledge	1.726*** (3.266)	2.571*** (3.062)	1.347*** (3.126)	1.825*** (2.919)	1.347* (1.901)	2.161** (2.326)	0.848 (1.388)	1.145* (1.710)
Distance	2.183*** (3.016)	2.509*** (3.340)	1.917** (2.468)	2.191*** (2.683)	2.138*** (3.045)	2.088*** (3.087)	1.693*** (3.037)	1.826*** (2.950)
Rate	-0.984** (-2.155)	-2.305*** (-4.195)	-0.707 (-1.579)	-1.632*** (-3.159)	-1.497*** (-3.021)	-2.413*** (-4.209)	-0.920** (-2.015)	-1.596*** (-3.122)
CEO tenure					-0.126 (-0.220)	1.255* (1.777)	0.132 (0.231)	1.381** (2.369)

Intercept	0.285 (0.159)	3.251 (1.224)	-2.158* (-1.848)	-1.297 (-0.959)	1,88073 (1.049)	2.481 (0.956)	-1.509 (-1.354)	-1.905 (-1.541)
Observations	94	94	94	94	94	94	94	94
McFadden R ²	62.21%	71.84%	57.47%	69.21%	61.06%	68.28%	58.04%	66.59%
AIC	58.77	49.40	63.39	51.96	59.89	52.86	62.83	54.51
Chi square χ^2 (probability)	60.53 (0.00%)	69.91 (0.00%)	55.92 (0.00%)	67.35 (0.00%)	59.42 (0.00%)	66.45 (0.00%)	56.48 (0.00%)	64.80 (0.00%)
Rate of correct classification	93.6%	94.7%	90.4%	94.7%	92.6%	94.7%	88.3%	93.6%

The full sample consists of 94 French SMEs for the year 2011. The dependent variable is the binary variable Multibank. Variable definitions are provided in Appendix A. All models have been estimated over the full sample using probit regressions based on standard errors adjusted for heteroskedasticity (Huber-White standard errors). Models Vb and Vc are the combination of models Ib and IIIb and models Ic and IIIc, respectively. Models VIb and VIc are the combination of the models IIb and IIIb and models IIc and IIIc, respectively. Models VIIb and VIIc are the combination of the models Ib and IVb and models Ic and IVc, respectively. Models VIIIb and VIIIc are the combination of the models IIb and IVb and models IIc and IVc, respectively. The z-values are in parentheses. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level. χ^2 Likelihood-ratio test, probabilities are in parentheses.

Table 8. Comparison of the goodness of fit values of the models derived from approach one, the models derived from approach two, and the combined models

		Approach one		Approach two		Combined models			
Models		I	II	III	IV	V	VI	VII	VIII
<i>Multiple Imputation</i>	<i>McFadden R²</i>	34.16%	36.28%	34.93%	33.61%	62.21%	57.47%	61.06%	58.04%
	<i>AIC</i>	78.07	76.00	73.32	74.61	58.77	63.39	59.89	62.83
	<i>Rate of correct classification</i>	84.0%	81.9%	86.2%	85.1%	93.6%	90.4%	92.6%	88.3%
<i>Regression Imputation</i>	<i>McFadden R²</i>	26.42%	36.47%	50.41%	48.30%	71.84%	69.21%	68.28%	66.59%
	<i>AIC</i>	85.60	75.82	58.26	60.31	49.40	51.96	52.86	54.51
	<i>Rate of correct classification</i>	83.0%	86.2%	92.6%	91.5%	94.7%	94.7%	94.7%	93.6%

The models are run on the entire sample (94 French SMEs for the year 2011) with imputation of the missing variables. For each model, we provide the McFadden R², AIC (Akaike Criterion), and the rate of correct classification.

Appendix A

Variable index: definitions

	Variable	Definition	Source	Hypothesis	Proxy	Expected impact
Approach One	Multibank	Dummy variable that equals 1 if the SME is engaged in multiple banking relationships and 0 otherwise	Survey		Multiple banking relationships	/
	Workforce	Number of employees in 2011	Altarex			
	Assets	Total assets, in million euros (M€) in 2011	Altarex	H1	Size	+
	Sales	Net sales, in million euros (M€) in 2011	Altarex			
	Age	Age of the SME (years) at the time the survey was completed	Altarex	H2	Age	-
	Growth	One-year sales growth (2010-2011)	Altarex			
	ROA	Return on assets 2011	Altarex			
	ROE	Return on equity 2011	Altarex	H3	Performance	+ or -
	VIROE	The average value of ROE computed over a 4-year (2007-2010) period	Altarex			
	Liquidity	Ratio of current assets to current liabilities	Altarex			
	Leverage	Ratio of debt to total assets	Altarex	H4	Financial distress anticipation	+ or -
	Innovation	Dummy variable that equals 1 if the SME answered “no” to the question “Is your firm innovative according to the definition of the French Tax Code?” and 0 otherwise	Survey	H5	Innovation	-
	LT debt-need	Dummy variable that equals 1 if the SME answered “yes” to the question “Has your firm applied for a long-term loan since 2007?” and 0 otherwise	Survey		Financial needs	
Approach Two	Working capital	Ratio of working capital to net sales	Altarex			
	Invest-need	Dummy variable that equals 1 if the SME answered “yes” to the question “Did your firm invest since the beginning of the crisis in 2007?” and 0 otherwise	Survey	Control	Investment needs	
	Frequency	Dummy variable that equals 1 if the SME answered “yes” to the question “Do you have exchanges on a weekly basis with the loan officer of your main bank?” and 0 otherwise	Survey	H6	Perceived customer orientation	-
	Rating knowledge	Dummy variable that equals 1 if the SME answered “yes” to the question “Do you know the criteria used by your bank in the rating process?” and 0 otherwise	Survey	H6	Perceived customer orientation	-
	Support	Dummy variable that equals 1 if the SME answered “yes” to the question: “Do you think that your bank will support your firm in the context of financial difficulties?” and 0 otherwise	Survey	H6	Perceived customer orientation	-

Distance	Dummy variable that equals 1 if the SME answered “yes” to the question “Is your loan officer located in a business center?” and 0 if it is located in a bank branch	Survey	H7	Perceived interface continuity	+
Rate	Dummy variable that equals 1 if the SME answered “no” to the question “Do you systematically look for the lower interest rate when applying for credit?” and 0 otherwise	Survey	H8	Desire of the CEO to build relational trust	+
Bank knowledge	Dummy variable that equals 1 if the manager thinks that he has knowledge about how a bank works and 0 otherwise	Survey	Control		
CEO tenure	Dummy variable that equals 1 if the CEO started in his position more than 5 years ago and 0 otherwise	Survey	Control		

Appendix B

Pearson correlations for quantitative variables

	Assets	Sales	Age	Growth	ROA	ROE	VIROE	Liquidity	Leverage	Working capital
Workforce	0.305***	0.336***	-0.013	-0.042	-0.196*	-0.097	-0.063	-0.039	0.115	-0.144
Assets		0.735***	0.104	-0.056	0.060	-0.039	0.006	0.104	-0.283**	0.466***
Sales			0.124	0.068	0.013	0.013	0.034	-0.035	-0.064	0.022
Age				-0.107	-0.064	0.099	0.059	0.052	0.028	0.018
Growth					0.202*	-0.021	0.007	0.017	-0.066	-0.225*
ROA						0.026	0.382***	0.162	-0.439***	0.046
ROE							0.128	0.021	-0.014	0.044
VIROE								0.096	-0.004	-0.029
Liquidity									-0.215*	-0.015
Leverage										-0.289***

The sample consists of 81 French SMEs for the year 2011. Variable definitions are provided in Appendix A.

***, **, and * indicate that the correlation coefficient is significant at the 1%, 5%, or 10% level, respectively (Pearson correlation test).

Appendix C

P-value of Chi-2 independence tests for qualitative variables

	LT debt-need	Invest-need	Frequency	Rating knowledge	Support	Distance	Rate	Bank knowledge	CEO tenure
Innovation	1.754	0.091	0.329	0.281	0.059	0.247	0.731	0.053	1.336
LT debt-need		0.402	0.000	0.132	0.483	0.029	2.499	0.527	0.140
Invest-need			0.697	0.473	15.849***	2.243	1.758	0.053	0.031
Frequency				0.367	0.210	0.373	1.425	1.513	7.325***
Rating knowledge					5.216**	1.341	0.004	3.380*	2.935*
Support							4.661**	2.412	0.155
Distance							2.764	0.880	1.258
Rate								1.425	0.001
Bank knowledge									1.258

The sample consists of 69 French SMEs for the year 2011. Variable definitions are provided in Appendix A.

***, ** and * indicate that the hypothesis of dependence is accepted at the 1%, 5%, or 10% level, respectively.

***, ** and * indicate that the hypothesis of dependence is accepted at the 1%, 5%, or 10% level, respectively.