LOOKING FOR BETTER FINANCING: A QUANTITATIVE APPROACH ON COLLATERAL IMPORTANCE IN SMES RELATIONSHIP LENDING

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Abstract

When looking for adequate financing, SMEs managers face various obstacles due to factors such as: lack of experience, information asymmetry, market conditions or collateral. The collateral issue in SMEs financing enjoys a comprehensive attention in the literature, regarding its role in preventing moral hazard, interests' alignment, discipline *ex post* the borrowers' behaviour, revealing the bank's behaviour on the market. In order to investigate the role of collateral in SMEs relationship lending, we undertook an extended survey-based research on Romanian SMEs. Based on a multiple linear regression and using the method of ordinary least squares, we analysed and tested the effect of the main determinants of the relationship banking on the collaterals required in loan contracts. We found out that SMEs with long-term relationship with a bank are open to offer more guarantees than those firms that count on trust relationship. The number of SME's banking relationships is negatively correlated with the firms' availability to accept the collateral condition, as the young and competitive SMEs are less prone to provide collaterals for claimed loans. Moreover, "older" firms agree to the collateral requirements of banks. Finally, SMEs perceive that banks require larger collaterals for long-term loans, compared with short term loans with similar value. Our results are in line with previous researches, but also bring additional interpretations of banks' role related to SMEs' expectations.

Key words: SMEs, lending relationship, banks' behaviour, collateral

JEL Code: G21, G32

Introduction

According to 2013 SMEs Access to Finance Survey (European Commission, 2013, p. 6), *the access to finance* of European SMEs is considered – for the fourth time, consecutively, in the last

ten years – as the second most pressing issue for the firms, mentioned by 15% of EU SMEs managers. The issue of funding seems to be extremely concerning for SMEs managers from Slovakia (mentioned by 42% of the SMEs managers), Greece (28%) and Cyprus (26%), in contrast to Estonia, Finland and Czech Republic (up to 5%). Among other issues, only *finding customers* was considered a greater problem by SMEs (European Commission, 2013, p. 6).

The most frequently financing sources used by European SMEs are bank overdrafts (39%), leasing/hire purchasing/factoring (35%) and bank loans (32%), very similar to previous surveys results. It becomes obvious that, searching for adequate financial support, most of the SMEs in the European area are intensely conditioned by the quality and effects of a strong and veritable banking relationship. Overall, SME's managers denote to be quite reticent about the general economic outlook and its impact on their businesses. In particular, those managers who prefer bank loans to achieve their development plans argue that excessive guarantees required by banks and high interest rates (both selected by 20% of managers) are the main factors limiting access to finance. Thus, 61% of Portuguese and 51% of Romanian SMEs managers considered that high interest rates were the biggest obstacle to growth; meanwhile, the insufficient collateral was mentioned especially by 30% of the Italian managers (European Commission, 2013, p. 95). Even though there is a tendency for stabilizing credit conditions in the last two years (in terms of size of loan, collateral requirements and other bank's covenants and conditions), in countries such as Greece, Spain, Finland and Ireland collateral requirements for SME's bank loan were more likely to have risen, compared to the EU average (European Commission, 2013, pp. 77-78). SMEs cannot meet all the requirements of banks, and they are perceived to be riskier than large enterprise, all justifying the banks requirements for additional protection, such as collateral, higher interest rates, covenants etc.

1 Collateral between credit risk, bank behaviour and relationship lending

In general, it is agreed that the main determinants of relationship banking, i.e. trust, concentration, length, firm's age, size or performance affects two groups of conditions in bank loan agreements: *price type conditions* (mainly, the interest rates and loan charged fees) and *non-price conditions* (e.g. type and size of collateral, loan size, maturity and other covenants or obligations related to bank's monitoring etc.).

Regarding the non-price terms of the loan (i.e. collateral or maturity), the mainstream supports the hypothesis that relationships diminish the information asymmetry between lenders and borrowers, i.e. reduced requirements for collateral to be pledged (due to a lower adverse selection and borrower moral hazard), or reduce the loan maturity for riskier borrowers (shorter maturities are based on frequent monitoring) (Bester, 1985) or (Besanko & Thakor, 1987). Thus, low-risk borrowers are willing to offer better collateral, as a signal for their capabilities to fulfil its obligations under the credit agreement and, therefore, they are less probability to lose the guarantee (Jiménez & Saurina, 2004). On the other hand, there is the opinion that, even there is an *ex ante* symmetry between debtor and creditor, collateral is designed to mitigate the moral hazard problem once the loan was granted. In this respect, the collateral engaged helps to align the interests of lenders and borrowers, avoiding the situation where the borrower makes no effort to ensure the success of the financed project. Collateral becomes a means to discipline the borrowers' behaviour (*ex post*), given the existence of a credible threat (Aghion & Bolton, 1992, pg. 473-494). Hence, we can expect to find a direct relationship between the loan (or the borrower) and the collateral, i.e. a valuable collateral is a signal of a high quality borrower. However, the bankers do not agree with this assumption, preferring to establish a direct relationship between the level of credit risk and the amount of collateral required. For Manove et al. (2004, pg. 726-744), the size and quality of collateral is linked to the banks behaviour on the market, or the *lazy banks vs. diligent banks theory*. "Lazy banks" are defined as those banks that prefer to substitute a careful and efficient screening of projects with a higher concern for the size and quality of proposed collaterals.

Briefly, the influence of the main determinants of banking relationship *(i.e. trust, length, concentration, firm's age, size or performance)* on loan collateral can be captured as follows:

- According to Moro et al (2010), *trust* plays an important role in credit accessing, but contradictious in collateral sizing. Collateral requests seem to be higher at the beginning of the relationship (probably due to the fact that *trust* is implicitly very low) and slowly decrease as the duration of lending relationship increases;
- The *length of relationship* tends to diminish the initial collateral requirements, but this effect is reversed later on. Thus, firms with a longer relationship with the same bank are the least likely to pledge consistent collateral (Niskanen & Niskanen, 2000, p. 251);

- Analysing *concentration,* Petersen & Rajan (1994), Berger & Udell (1995) and Harhoff & Körting (1998) find that increasing the number of relationship banking raises the loan price and collateral requirements and reduces the availability of credit. However, the reciprocal is not necessarily advantageous. According to Hernandez-Canovas and Martinez-Solano (2010), the policy of a single banking relationships would confer a monopoly power for the bank, and thus will increase the requirement for collateral;
- Regarding the *age* and *size* of the borrower, we can assume that large firms are likely to have a good credit relation, and their behaviour in difficult situations is to diminish informational asymmetry and the size of the required collateral (Strahan, 1999). However, the age and size are mediocre determinants for credit conditions, including collateral size and quality;
- The combinations of good financial *performance* of the debtor and valuable collateral could lower the lending margins, suggesting that "collateral and interest rate are substitute mechanisms" (Bharath, Dahiya, Saunders, & Srinivasan, 2009).

2 Data and methodology

In order to investigate the influence of banking relationship on collateral required for bank loans granted to SMEs, we carried out a survey-based, empirical research, as part of a wider research project investigating relevant issues on the relationship between SMEs and banks, such as: the role of the main determinants of the banking relationship, the use of credit products, the most adequate type of bank (domestic, foreign, large, small, local etc.) for the SMEs' interests. Data collection was focused on gathering information mainly from SMEs in Bihor County and its main city, Oradea, situated in the North Western part of Romania. The survey was partially inspired and follows the methodology used by Hernandez-Canovas and Martınez-Solano (2010) and was carried out during March-May 2011.

Preceding the data collection itself, the potential SMEs portfolio was verified on the web page of the Ministry of Public Finance in order to remove, *ex ante*, the firms with no activity, firms suspended etc., the companies out of SME's category, the financial companies, and, as far as possible, those firms belonging to large groups. The information from the Ministry of Public Finance also served to obtain additional data such as: age of the company, turnover, profit and number of employees. From the primary data set of 661 companies, the valid sample consists of 595 firms, with a statistical error of 2.62% and a confidence level of 95%.

According to the existing laws and regulations, to the National Bank of Romania reports for 2010, 2011 and 2012 and to data from main commercial banks we found a normal, regular position of this region within the national context. There are no special features, different economic laws or regulations for this area, or special behaviours or practices coming from the banks and government agencies relating to SMEs, or anything else that could influence the representativeness of the results.

Based on this empirical research, we analysed the main determinants of the relationship banking and then tested the effect of: companies characteristics (e.g. age, size/turnover, and solvency), relationship characteristics (e.g. trust, concentration, length), and financing characteristics (e.g. short or long-term bank debt) on the collaterals required in loan contracts. Specifically, SMEs` managers were asked to rate on a scale from 1 (strongly disagree) to 5 (strongly agree) the following statement: "Banks grant loans only if the company provides collateral".

From the registered responses, we define the dummy variable *Collateral*, which takes value 1 when the response exceeds median and 0 otherwise. The effect of the bank relationship on the probability of providing collateral is analyzed through the following model:

$$\begin{aligned}\text{Collateral}_i = {} & \alpha_0 + \alpha_1 \text{Concentration} + \alpha_2 \text{Length} + \alpha_3 \text{Trust} + \alpha_4 \text{Size} + \alpha_5 \text{Age} \\ & + \alpha_6 \text{Solvency} + \alpha_7 \text{Short} - \text{term bank debt} + \alpha_8 \text{Long} - \text{term bank debt} + \varepsilon_i \end{aligned} \quad (1)$$

The relationship between firm and bank is identified by the existence of length between them, i.e. the relationship is determined by the number of years that the firm has worked with its "oldest" bank. Moreover, as to identify the relationship between these entities, we include *Concentration* and *Trust*, the variables most used in the literature to analyse the existence and strength of the bank relationship. The variable *Length* is measured by the natural logarithm of the number of years of the longest banking relation, while the variable *Concentration* is defined as the natural logarithm of (1 plus the number of banks with which the firm works). *Trust* is measured by ranking on a five-point scale base, from 1 (strongly disagree) to 5 (strongly agree), the opinion of SMEs` managers on the following statement: "When granting a loan to a SME, trust in company's managers is the most important argument for the bank". From all the responses, we define the dummy variable *Trust*, which takes value 1 when the response exceeds median and 0 otherwise. Moreover, we use certain characteristics of the firms; specifically, we include three other dummy variables: *Age* (which is determined as the natural logarithm of the

age of the firm, i.e. number of years since the foundation of the firm), *Size* (net turnover) and *Solvency* (determined as ratio between cash flow and total assets), as Hernandez-Canovas & Martinez-Solano (2010, pp. 468-470) stated. Finally, managers were asked to indicate the frequency with which they used long-term, respectively short-term bank financing. From their responses, ranging from 1 (never) to 5 (frequently), we measure the variables *"long-term bank debt"* and *"short-term bank debt"* (Gottesman & Roberts, 2004, p.57). Table 1 summarizes the definition and explanation of variables and Table 2 summarizes the regressions` results.

Tab. 1: Definition and explanation of variables

Variable		Explanation of variable
Endogenous variable		
	Collateral	On a scale from 1 (never) to 5 (always), we denote the opinion of SMEs` managers on the following: "Banks grant loans only if the company provides collateral". Dummy variable Collateral takes value 1 when response exceeds median and 0 otherwise.
Exogenous variables		
Firm characteristics	Age	Ln (Number of years since firm's foundation).
	Size	Ln (Net turnover).
	Solvency	(Cash flows)/(Total assets).
Relationship characteristics	Concentration	Ln (1 + number of banks with which firm works).
	Two relationships	Dummy variable taking value 1 when firm works with two banks and 0 otherwise.
	More than two relationships	Dummy variable taking value 1 when firm works with more than two banks and 0 otherwise.
	Length	Ln (Number of years of the longest banking relation)
	Trust	On a scale from 1 (totally disagree) to 5 (totally agree), we denote manager's opinion on the following: "When granting a loan to an SME, trust in company's managers is the most important argument for the bank". Dummy variable Trust takes value 1 when response exceeds median and 0 otherwise.
Financing characteristics	Short-term bank debt	On a scale from 1 (never) to 5 (always), firm's manager indicates the frequency of short-term bank loans accessing.
	Long-term bank debt	On a scale from 1 (never) to 5 (always), manager indicates the frequency of long-term bank loans accessing.

Source: Harhoff and Körting 1998 (pp.1328-1329), Cánovas and Solano 2010 (p.469)

The first regression in Table 2 contains the estimation by ordinary least squared of the model presented above. Regarding the relationship characteristics, we find that SMEs with long-term relationship with a bank are open to offer more guarantees than those firms that count on trust relationship between them and the bank. It should also be noted that the sign of the variable Concentration is negative and significant only at 10% level, indicating that the number of SME's banking relationships is negatively correlated with the SME's availability to accept the collateral condition required by the banks for the prospective loans.

Tab. 2: Effect of trust, concentration and duration of bank relationship on guarantee use (collateral)

	Collateral OLS (1)	**Collateral OLS (2)**
Constant	0.269913 (2.068236)**	0.137558 (0.449937)
Relationship characteristics		
Trust	0.022354 (-1.205941)	0.025707 (1.386559)*
Length	0.084721 (2.306796)**	0.071202 (1.915037)**
Concentration	-0.046261 (-0.684546)*	
Two relationships		0.221141 (2.187255)**
More than two relationships		0.191258 (2.009955)**
Financing characteristics		
Long-term bank debt	0.026900 (1.571858)*	0.029610 (1.619143)**
Short-term bank debt	0.026848 (1.466610)*	0.020274 (1.201063)
Firm characteristics		
Age	0.066024 (1.886169)**	0.080123 (2.305188)**
Size	0.004157 (0.440121)*	0.003217 (0.353838)
Solvency	-0.000372 (-0.149429)	-0.000329 (-0.131957)
Observation	540	540
Adjusted R-squared	0.038665	0,130659
Prob (F-statistic)	0,001	0,002
White	1,68	1,90

The dependent variable in all regressions is variable Collateral. All regressions estimated using ordinary least squares. Description of all variables reported in Table 1. Observations denote the number of cases included in estimation. Adjusted R^2 is the adjusted coefficient of determination (measures goodness of fit of linear model). White is p-value of White test, whose null hypothesis is absence of heteroskedasticity. T-statistic in parentheses.
*, ** Significant at 10%, 5% level, respectively

Regarding the financing characteristics, the older firms (regardless their financial performance) agree to the collateral requirements of banks. At the same time, young SMEs and SMEs with good financial results are less open to provide collaterals for claimed loans.

Inspection of Regression (2) in Table 2 also reveals that SMEs with long-term relationship with a bank are open to offer more guarantees than those firms that count on trust. To check the strength of the results, we included two dummy variables for measuring the relationship lending. In order to confirm whether the collateral for SMEs which maintain two relationships differs from the rest, we replaced the variable *Concentration* with two dummy variables. The first is *"two relationships"*, which is a dummy variable taking value 1 when firm works with two banks and 0 otherwise, and the second one is *"more than two relationships"*, which is a dummy variable taking value 1 when firm works with more than two banks and 0 otherwise. We can see that both coefficients are positive and significant and that the coefficient of the variable *"two relationships"* is higher, in absolute terms, than in the case of *"more than two relationships"*. This implies that firms having more than two bank relationships provide fewer guarantees than firms with two bank relationships, which confirms the findings in model (1) related to the concentration variable.

Conclusion

The access to finance for SMEs continues to be difficult and pressing, constrained by supply and demand imperfections, by covenants and, especially, by excessive collateral requirements from the banks' side. Scholars mention the collateral importance in preventing moral hazard, interests' alignment, as a means to discipline *ex post* the borrowers' behaviour, or even revealing the bank's behaviour on the market. In this paper we have investigated the effect of relationship banking descriptors (trust, length, concentration, age, size and financial performance) on the collaterals required in loan contracts. The investigation was based on a survey carried on 595 Romanian SMEs. We found that SMEs involved in long-term relationship with a bank are open to offer more guarantees than those firms that count on trust relationship between them and the bank. The number of SME's banking relationships is negatively correlated with SMEs' availability to accept the collateral condition for the prospective loans. Young SMEs and SMEs with good financial results are less prone to provide collaterals for claimed loans. Meanwhile, the older and more experienced firms (regardless their financial performance) agree to the banks'

requirements concerning the collateral. Finally, SMEs perceive that banks require larger or higher quality collaterals for long-term loans, compared with short term loans with similar value. Our results are in line with previous researches in the literature, but also bring additional interpretations on the banks' role and policies related to SMEs' prospects and expectations.

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