COLLATERAL SIZE IN SMES FINANCING: WHICH FACTORS MATTER MORE?

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Abstract

Collateral's importance in understanding the (limited) access of SMEs to adequate funding is an essential issue, both theoretical and practical. For lenders, collateral's benefits refer to diminishing agency costs and informational asymmetries, limiting the potential legal complaints and shaping the debtors' future behavior. For SMEs, the insufficient collaterals are probably the most claimed cause of the difficulties in accessing a credit, and a clear way to evaluate the depth and severity of financial gap. Starting from our previous studies concerning the role of collateral in relationship lending, we extended the research to determine the banks' perspective and found out that the most effective variables determining the bank's perspective on the collaterals required in loan contracts are the length of the banking relationship and the prompt repayments. On the other side, the trust in managers/owners of the companies has little influence on the collaterals required in loan contracts. The results are similar to our prior researches showing that companies with long-term relationship with a bank are available to provide more guarantees than those firms that count on trust relationship. Our findings, in line with other researches, allow us to conclude on the importance of the banks' role in SMEs financing.

Key words: SMEs, lending relationship, banks' behaviour, collateral
JEL codes: G21, G32, O16

Introduction

Small businesses face a lot of obstacles and difficulties, mainly due to their smaller size and limited capacity to negotiate with different partners from their environment. Unfortunately, SMEs face additional challenges during the difficult times of the recent financial crisis, difficulties affecting the process of new ventures creation, but also of the growth and even survival of the existing ones. The first entities (and the most!) affected by the recession were

SMEs (Beck, Degryse, De Haas, & van Horen, 2014) and "despite showing more resilience in the initial stage of the crisis, the SMEs are now trailing behind large companies in the recovery" (European Commission, 2013, p. 7). However, Europe's economic success depends to a large extent of this sector. SMEs account for over 99% of all enterprises in EU, providing more than 80% of all new jobs, employing about 67% of private sector employees and have a gross added value of around 58% (Lopez de Silanes Molina, McCahery, Schoenmaker, & Stanisic, 2015), (Rangone, 2016). Even the SMEs' contribution is important for EU states, their financing opportunities are quite low compared with the large enterprises.

Fortunately, there are solutions that could be put into practice to improve SMEs access to finance. One solution has been (and still is) the European financing programs devoted to SMEs. The second solution resides in the "classic" sources of external financing. However, small companies are not as transparent and stable as large enterprises, making almost impossible for SMEs to attract funds directly from investors or from the capital markets. The external financing of SMEs is mainly bank-based, through credit lines (or overdraft) and bank loans (European Commission, 2015, pp. 7-11). In order to benefit from external financing, small companies face two important constraints, i.e. interest rates and collateral requirements. Regarding the collateral requirements, the EU reports recorded an increase during 2009-2013, followed by a slight decrease. For Central and Eastern Europe (CEE), the perceptions vary: 27% of Bulgarian SMEs' representatives see an increasing of collateral requirements, meanwhile in Hungary, Slovakia and the Czech Republic the figures are considerable lower (11-12%). Nevertheless, in CEE the percentage of those who consider that the collateral requirements are quite low: from 4% in Romania and Slovakia, to a maximum of 7% in Czech Republic. Overall, 15% of the surveyed SMEs consider that collateral is the most difficult creditors' requirement. The percentage ranges from 28%-24% in Hungary and Romania, to 15% in Czech Republic and Slovakia (European Commission, 2015).

1 The literature on collateral and its effects in the lending relationship

The existence of collateral is important to reduce agency costs, prevent the assets substitution and mitigate the under-investment problems (Jensen & Meckling, 1976), (Steijvers, et al., 2010), to reduce the information asymmetry between borrower and lender, to obtain lower interest rates or a greater availability to funding from the banks (Bester, 1985), (Besanko & Thakor, 1987).

Banks want to retain such a right (privilege) on the debtor's property, unaffected by excessive demands coming from unsecured creditors, such as suppliers or state budget. Under perfect information conditions, the subsequent un-secured creditors will either decline the funding, or require higher interest rates (Steijvers, et al., 2010). The existence of the collateral signals the debtor' stance towards, and among, the lenders. According to Bester (1985), Besanko & Thakor (1987), the borrowers with low risk bring more or most valuable guarantees than high risk borrowers, indicating a confidence in their performance and the proposed project. This opinion is questioned by Chen (2006) and Inderst & Mueller (2007), who consider that the existence of consistent collateral could generate the adverse selection phenomenon. Finally, the collateral is considered as an element to temper the future excessive borrowing. The existence of substantial guarantees endorsed in favour of the existing bank will deter other bank from getting involved on underprivileged positions.

Overall, collateral acts to discipline the *ex post* borrowers' behaviour, to mitigate the moral hazard problem once the loan was granted, to align the interests of lenders and borrowers, and thus avoiding the situation when the borrower makes no effort to ensure the success of the financed project (Aghion & Bolton, 1992). Jiménez et al (2006) consider that these over-demands for guarantees adversely affect the efficiency of credit markets and diminish social welfare, being rejected good projects that cannot be backed with guarantees.

A long credit relationship decreases collateral requirements (Boot & Thakor, 1994) and lower the interest rate (Berger & Udell, 1995). The combination of good quality of the debtor and valuable guarantees could reduce the loan interest margin and collateral requirements (Bharath, et al., 2011)*,* and also reduce the intense monitoring from lending institutions (Holmstrom & Tirole, 1997). Degryse and van Cayseele (2000) find that the duration of the relationship negatively affects the probability of posting collateral, while purchasing other services reveals an increase in the probability of pledging collateral. According to Hernandez-Canovas & Martınez-Solano (2010), in the last decades there is an increase in the availability of the lenders to get involved in firms' in new projects, but instead they claim more control in SMEs' activity and the best collaterals.

2 Data, methodology and results

In order to investigate the nature and importance of the influence of the banking relationship on collateral required, considered from the bank's perspective, we developed a survey-based research among 150 banks representatives (i.e. bank managers, SMEs risk managers and SMEs relationship managers), from different banks in Romania. The survey was developed based on a questionnaire with 18 questions. Most of the respondents (i.e. 85%) were employed in the North-Western Region of Romania, and the rest (i.e. 15%) in the Centre Region and Western Region. As a result of the survey, the primary dataset consisted of 67 responses from managers working in 20 banks (out of 42). After removing the errors, 64 questionnaires were taken in analysis. When checking the national representativeness of the responses, we found no special features, different economic laws or regulations for this area, or special behaviours or practices coming from the banks related to SMEs in specific Romanian regions (National Bank of Romania, 2014).

In Table 1 we present the endogenous and exogenous variables analysed and their descriptions.

Tab. 1: Definition of endogenous and exogenous variables

Variable name	Explanation of variables
Endogenous variables	
Collateral	On a scale from 1 (totally disagree) to 5 (totally agree), we denote bank's opinion on the following statement: "The banks grant loans only if the company provides collateral". Dummy variable *Collateral* takes value 1 when response exceeds median and 0 otherwise
Exogenous variables	
Bank characteristics	
Size	On a scale from 1 (totally disagree) to 5 (totally agree), we denote bank's opinion on the following statement: "*In Romania, the small banks have a higher availability to finance SMEs compared to the large banks*". Dummy variable Size takes value 1 when response exceeds median and 0 otherwise
Nature and origin of the capital	On a scale from 1 (totally disagree) to 5 (totally agree), we denote the bank's opinion on the following statement: "*In Romania, domestic banks have higher availability in SME financing in comparison with the foreign banks*". This dummy variable takes value 1 when response exceeds median and 0 otherwise
Relationship characteristics	
Length	On a scale from 1 (totally disagree) to 5 (totally agree), we denote the bank's opinion on the following statement: "For the companies that work primarily with a bank for extended

Variable name	Explanation of variables
	periods of time, that bank show high availability to credit requests or to renew/extend the loan at maturity compared to new customers requests". This dummy variable takes value 1 when response exceeds median and 0 otherwise
Trust	On a scale from 1 (totally disagree) to 5 (totally agree), we denote bank's opinion on the following statement: "When the bank gives a loan to an SME confidence in shareholders / managers of that company is the most important argument for the bank ". Dummy variable *Trust* takes value 1 when response exceeds median and 0 otherwise
Lending characteristics	
Prompt repayment	On a scale from 1 (never) to 5 (always), banks managers indicate the frequency. Indicate how often the term or advance payment rates determined more favourable treatment from the bank. This dummy variable takes value 1 when response exceeds median and 0 otherwise
Renewal	On a scale from 1 (never) to 5 (always), we denote the opinion of banks on the following statement: "*For the SMEs with a good track record of lending, the bank showed high availability to credit requests or to renew/extend the loan at maturity compared to new customers requests*". Dummy variable *Renewal* takes value 1 when response exceeds median and 0 otherwise.

Source: own elaboration based on Hernandez-Canovas & Martınez-Solano (2010)

We analysed the effect of the main determinants of the relationship between banks and SMEs, and then tested the effect of certain general characteristics (i.e. *size, nature* and *origin of the capital*), relational characteristics (i.e. *length* and *trust*) and specific financial indicators concerning lending (i.e. *discount for early payment* and *renewal*) on the bank's perspective about the collaterals required in loan contracts. Specifically, banks representatives were asked to rate on a scale from 1 (never) to 5 (always) the following statement: "The banks grant loans only if the company provides collateral". From the registered responses, we define the dummy variable *Collateral*, which takes the value 1 when the response exceeds median, and 0 otherwise. The effect of the bank relationship on *Collateral* is analysed through the following model:

$$\text{Collateral} = c(1) + c(2) \cdot \text{Trust} + c(3) \cdot \text{Discount for early payment} + c(4) \cdot \text{Length} + \\ c(5) \cdot \text{Re newal} + c(6) \cdot \text{Nature and origin of the capital} + c(7) \cdot \text{Size} + \varepsilon \tag{1}$$

The regression determined in Table 2 contains the estimation of the model by ordinary least squared method (1). Concerning the characteristics, of the banks we can notice that the variable *length* has a significant impact on collateral, while *trust* exerts no impact on the dependent variable collateral. The probability of collaterals required in loan contracts decreases by 1.73% when the variable *length* increases by 10%, while a decrease by 10% in the variable *trust* increases the probability of collateral by only 0.57%, almost three times less. In other words, in the case of the companies which have been working with a bank for a long period of time, the bank will reduce the collateral requirements regarding the new granted loans or the renewal of the existing ones. On the other side, the trust in managers/owners of the companies has little influence on the collaterals required in loan contracts. Therefore, we can state that when it comes to reducing the collateral requirements regarding the new granted loans or the renewal of the existing ones, the bank considers that *the length* of the relationship is more important than *the trust*.

Tab. 2: The effects of bank relationship, bank characteristics and financing characteristics on bank's perspective about the collaterals required in loan contracts (Collateral)

	Collateral (dependent variable)	
	coefficient	t-statistics
Intercept	0.550800	(3.079209)***
Relationship characteristics		
Length	-0.173013	(-1.712869)*
Trust	-0.057756	(-0.476758)
Bank characteristics		
Size	0.156993	(1.288331)
Nature and origin of the capital	0.179338	(1.703410)*
Financing characteristics		
Prompt repayment	-0.333834	(-2.856643)***
Renewal	-0.236145	(-2.211201)***
Observations	64	
Adjusted R-squared	0.189138	
Prob (F-statistic)	0.005633	
White (prob)	0.702235 (Prob=0.8066)	
Durbin Watson	2.302061 (d1= and d2=)	
Jarque Bera (prob)	4.808709 (Prob=0.090324)	

Description of all variables reported in Table 1. Observations is number of cases included in estimation. F is p-value of global test of significance of linear model. Adjusted R^2 is the adjusted coefficient of determination (measures goodness of fit of linear model). T-statistic in parentheses. *, **, *** Significant at the 10%, 5%, 1% level
Source: authors' calculations

Regarding the bank's characteristics, we find a positive coefficient for the *size, nature* and *the origin of the capital* variables. In the case of the variable *nature* and *the origin* of the capital, we find a significant coefficient at a level of 10%, and an insignificant coefficient for the variable *size*. We can conclude that the nature and the origin of the capital have influence on the bank's perspective about the collaterals required in loan contracts, while the size of the bank does not. Moreover, when the bank's size increases by 10%, the probability of posting collateral increases by 1.56%. The *prompt repayment* and the *renewal* are the other two variables influencing the *collateral* requirements. The impact of both financing characteristics has similar magnitude, and in the same (negative) direction. Both variables have a significant influence on the dependent variable for 1% level. On-time (or in advance) credit repayments determine less guarantee requirements on the bank side, including granting new loans or renewing the existing ones. Furthermore, banks consider that prompt repayment is the most important factor influencing the collateral of an existing credit. The probability of collaterals required in loan contracts decreases by 3.33% when the variable *prompt repayment* increases by 10%.

Conclusion

We have investigated the effect of banking relationship indicators (i.e. length, size, trust and the nature of bank's capital) on the collateral required in loan contracts, based on a survey among bank representatives. We found out that the most effective variables determining banks' requirement on loan collaterals is the *length of relationship* (an inverse correlation) followed by *prompt repayment* and the *renewal,* meanwhile *the variable trust* in managers/owners of the companies have little influence on the collaterals requirements. Regarding the bank's characteristics, *the nature* and *the origin* of the capital influence the bank's perspective, but *the size* of the bank does not significant influence this collateral requirements. In our previous research (Badulescu, et al., 2014), but addressed to SMEs, we found also that the collateral required in loan contracts depends mainly on the *length* of the banking relationship, meanwhile the bank's characteristics (age and size) have exerted a medium influence on collateral sizing. Reviewing all our research on banking relationships, we find that, so far, this is the only

similarity between the banks' opinion and SMEs: the length of banking relationships exerts a significant relationship on collateral sizing in loan contracts. Moreover, our present findings confirms most of the literature and gives the possibility of substantiating and targeting efforts to improve the effective banks' involvement in fulfilling SMEs financing needs.

References

Aghion, P., & Bolton, P. (1992). An Incomplete Contracts Approach to Financial Contracting. *Review of Economic Studies, 59(3),* 473-494.

Badulescu, D., Simut, R., & Badulescu, A. (2014). Looking for Better Financing: A Quantitative Approach on Collateral Importance in SMEs Relationship Lending. *Proceedings of the 8th International Days of Statistics and Economics, 2014*, 43-52, Prague.

Beck, T., Degryse, H., De Haas, R., & van Horen, N. (2014, July). When arm's length is too far: relationship banking over the business cycle. *EBRD Working Paper No. 169*, 32.

Berger, A., & Udell, G. (1995). Relationship lending and lines of credit in small firm finance. *Journal of Business, 68*(3), 351-381.

Besanko, D., & Thakor, A. (1987). Collateral and Rationing: Sorting Equilibria in Monopolistic and Competitive Credit Markets. *International Economic Review, 28*, 671-689.

Bester, H. (1985). Screening vs. Rationing in Credit Market under Asymmetric Information. *Journal of Economic Theory, 75*, 167-182.

Bharath, S., Dahiya, S., Saunders, A., & Srinivasan, A. (2011). Lending relationships and loan contract terms. *Review of Financial Studies, 24*(4), 1141-1203. doi:10.1093/rfs/hhp064.

Boot, A., & Thakor, A. (1994). Moral Hazard and Secured Lending in an Infinitely Repeated Credit Market Game. *International Economic Review, 35*(4), 899-920.

Chen, Y. (2006). Collateral, loan guarantees, and the lenders' incentives to resolve financial distress. *Quarterly Review of Economics and Finance, 46*, 1–15.

Degryse, H., & Van Cayseele, P. (2000). Relationship Lending with a Bank-based System: Evidence from European Small Business Data. *Journal of Financial-Intermediation, 9(1)*, 90-109.

European Commission (2013). *A Recovery on the Horizon? Annual Report on European SMEs 2012/2013*. Luxembourg: Publications Office.

European Commission (2015). *Survey on the access to finance of enterprises (SAFE).* Brussels: Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs.

Hernandez-Canovas, G., & Martınez-Solano, P. (2010). Relationship Lending and SME Financing in the Continental European Bank-based System. *Small Business Economics 36*, 465-482.

Holmstrom, B., & Tirole, J. (1997). Financial Intermediation, Loanable Funds, and the Real Sector. *Quarterly Journal of Economics, 112*(3), 663-691.

Inderst, R., & Mueller, H. (2007). A lender-based theory of collateral. *Journal of Financial Economics, 84*, 826–859.

Jensen, M., & Meckling, W. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*, 305–360.

Jiménez, G., Salas, V., & Saurina, J. (2006). Determinants of collateral. *Journal of Financial Economics, 81*, 255–281.

Lopez de Silanes Molina, F., McCahery, J., Schoenmaker, D., & Stanisic, D. (2015). *The European Capital Markets Study. Estimating the Financing Gaps of SMEs.* Amsterdam: Duisenberg School of Finance.

National Bank of Romania (2014). *Annual Report 2014*. Retrieved from http://www.bnr.ro/DocumentInformation.aspx?idDocument=20379&idInfoClass=3043

Rangone, A. (2016). Corporate Psychology. How Does Italian Entrepreneurship Change? *Oradea Journal of Business and Economics 1(1)*, 17-26.

Steijvers, T., Voordeckers, W., & Vanhoof, K. (2010). Collateral, relationship lending and family firms. *Small Business Economics, 34*(3), 243-259.

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