PEPPERDINE UNIVERSITY

The Journal of Entrepreneurial Finance

Volume 19
Issue 1 *Spring 2017*

Article 3

2-2017

When the Going Gets Tough, the Tough Get Going

Antti Fredriksson
University of Turku, School of Economics

Daniela Maresch
Johannes Kepler University Linz

Matthias Fink
Johannes Kepler University Linz

Andrea Moro
Cranfield University, School of Management

Recommended Citation

Fredriksson, Antti; Maresch, Daniela; Fink, Matthias; and Moro, Andrea (2017) "When the Going Gets Tough, the Tough Get Going," *The Journal of Entrepreneurial Finance*: Vol. 19: Iss. 1.
DOI: https://doi.org/10.57229/2373-1761.1283
Available at: https://digitalcommons.pepperdine.edu/jef/vol19/iss1/3

THE JOURNAL OF ENTREPRENEURIAL FINANCE VOLUME 19, NO. 1 (SPRING 2017) **83-104**

When the Going Gets Tough, the Tough Get Going

Antti Fredriksson
University of Turku
School of Economics

Daniela Maresch
Johannes Kepler University Linz

Matthias Fink
Johannes Kepler University Linz

Andrea Moro
Cranfield University
School of Management

ABSTRACT

A bank's lending decision is affected by the amount of information it can access and by its capability to manage this information. The latter aspect implies that the bank has to decide whether borrowers should be managed in a local branch of the bank or in its headquarters. By looking at a sample of Finnish banks, the present research investigates a bank's capability to extract profitability from both locally and centrally managed firms. We find that banks are able to properly discriminate between firms: those which should be managed by loan managers with expert knowledge in the bank's headquarters due to their complexity, and those firms which should be managed in the bank's local branch because they are simpler and need standard products and services. As a result, banks are able to extract risk-adjusted profitability (RAP) from both centrally and locally managed customers. Our findings clearly support the argument that the decision to centralise or decentralise the lending decision process is not an either/or decision: banks should implement both approaches and apply according to the type of firm they serve.

Keywords: Small Firms, Local Banks, Transaction Lending, Relationship Lending Risk- Adjusted Profitability
JEL Codes: G21, G24

I. Introduction

When Florentine bankers decided to increase the loans provided to England in the 1330s, the English crown's finances were already in dire straits because of the adverse outcomes of the wars in France. Retrospectively, it is therefore not a surprise that the default of the English crown in 1340 helped drive the Peruzzi out of business in 1343 and the Compagnia de' Bardi in 1346. Had they been able to access more information and to analyse this information properly, it is very likely that they would have behaved differently (Cipolla 1994, 2002). This is one of many examples in the

 ISSN: 2373-1761.

history of finance that illustrates the importance of accessing and analysing information in order to evaluate the creditworthiness of the borrower correctly.

Today, banks are aware of the key role played by information and of the risk they incur when they evaluate the borrowers' creditworthiness naively. This is particularly true in the case of small and medium-sized enterprises (SMEs), which are characterised by a high level of opaqueness due to the limited information available about them (Berger and Frame 2007; Berger et al. 2001; Mason and Stark 2004). In order to reduce information asymmetries between a bank and a SME, loan managers aim to collect additional information that helps them to assess the SME's creditworthiness. Previous research suggests that a loan manager's ability to do so depends on various factors, which can be grouped into two major categories: (i) the characteristics of the market, the bank or the SME, and (ii) the characteristics of the relationship between the SME and the bank. With regard to the first category, scholars stress the role of the concentration of the financial system (Neuberger et al. 2008), since a more concentrated financial system makes it easier for the bank to access detailed information about the customer. Furthermore, the geographic distance between the bank and the borrower plays an important role in accessing information, as banks find it harder to collect information from distant customers (Alessandrini et al. 2009; DeYoung et al. 2008; Petersen and Rajan 2002). Moreover, earlier research finds that the age of the firm is a relevant factor. Younger firms are more affected by information asymmetry, as they do not have an established track record in terms of performance that can be used to evaluate the management capabilities required to be successful in the future (Angelini et al. 1998; Petersen and Rajan 1994). As far as the second category, i.e. the relationship between the SME and the bank, is concerned, research highlights the roles of the length and the breadth of the relationship (Berger and Udell 1995; Elsas 2005; Petersen and Rajan 1994, 1995). Stronger relationships make it more difficult for the customer to hide information and easier for the bank to access additional information about the customer's performance (Howorth et al. 2003). However, strong relationships may lead to hold-up costs for firms (Farinha and Santos 2002; Greenbaum et al. 1989; Rajan 1992; Sharpe 1990), as banks may accumulate private information to gain monopolistic power to deter their competitors (Berger and Udell 1995; Petersen and Rajan 1994). This private information leads to reduced information asymmetry between firms and banks, thus enabling banks to set competitive pricing strategies (Bharath et al. 2007, 2011; Cerqueiro et al. 2011). Uchida et al. (2012) suggest that loan managers play a key role in collecting private information because of their repeated interactions with the same firm over time.

A bank's lending decision is the result of a sequential information production process. Banks have to structure this process in order to respond to the challenges posed by processing the collected information. Danos et al. (1989) divide the bank's lending decision process into three phases: (i) the examination of publicly available data about a firm, (ii) the personal examination of the firm's operations, and (iii) the analysis of likelihood for the loan to be repaid. The findings of Stein (2002) suggest that the organisational form determines the preferential use of hard or soft information and that the use of hard or soft information, in turn, affects lending opportunities. In order to benefit from lending opportunities, banks have to differentiate between the duties of decentralised and centralised loan managers. Lending decisions that are primarily based on soft information should be taken locally, whereas lending decision that are primarily based on hard information should be taken centrally. The work by Liberti and Mian (2009) supports this argument. The authors show that subjective information, for example un-quantified soft information, is difficult to use across organisational layers due to problems in transferring that information. Due to these problems in

communicating across hierarchies, the delegating of a firm to a local or central loan manager should depend on the nature of available information.

All in all, previous research suggests the way in which banks decide to treat a loan application is an endogenous decision: banks first categorise their borrowers according to the nature of the available information and then select a subset of loan applications for more rigorous analysis if additional information about a firm is required. Banks employ this procedure because the additional analysis is not free of charge, as the time and effort needed in order to take the final lending decision generates additional costs for the bank. Thus, the additional information can have an effect on both the lending and the pricing decision, which is reflected in the profits a bank can derive from a specific customer (Liberti and Mian 2009; Uchida et al. 2012). This implies that banks should manage loan applications centrally if the benefits gained due to a better creditor evaluation and better pricing exceed the incremental costs linked to information processing because of the involvement of highly skilled loan managers, who spend a lot of time on their analysis. Interestingly, current research has not investigated such cost–benefit implications of the lending process.

II. Hypotheses

Building on Stein's (2002) notion of hierarchical and local information processing, we argue that loan managers who operate centrally are able to analyse firms in more detail than local managers and are thus able to generate additional value for the bank. This is due to the following reasons. First, loan managers who operate centrally provide support to multiple local branches and may therefore have a better overall picture of lending contracts and the level of competition in the market. This additional information allows them to make better-informed lending decisions as well as decisions on the price of the loans. Second, the risk management of complex funding transactions needs to be handled by loan managers with expert knowledge. Loan managers who operate locally tend to deal with a plethora of different customers, e.g. firms operating in different industries, who have various needs – loans being just one of those needs. In order to be able to respond to these needs, they need to have broad banking and finance knowledge. However, due to this broad knowledge local loan managers may lack the expert knowledge required for more complex funding transactions. Third, loan managers who operate centrally are typically more experienced in coping with information asymmetries, since they are more likely to have hard information available about the borrower (Stein 2002). Nevertheless, particularly in banks with flat hierarchical structures soft information – that is hardened by quantifying it to a measurable form (Petersen 2004) – can also be transferred from local loan managers to loan managers who operate centrally. In addition, loan manager who operate centrally might be able to access additional soft information about customers, for example, by looking at the interaction between the respective customer and its business partners who also happen to be customers of the bank. We therefore expect that limited access to soft information can be overcome due to the additional skills of centrally operating loan managers.

If the process is effective, the thorough examination of a customer should allow the bank to select the right "problematic" customer, i.e. the customer who might be complex to evaluate, but who is creditworthy, and also price the loan correctly. We also argue, in line with Garicano (2000), that the loan managers' expert knowledge increases the further up the hierarchical ladder they are found. This expert knowledge may not only enable centrally operating loan managers to assess borrower risk more accurately than loan managers who operate locally, but also to generate incremental risk-adjusted profitability (RAP) for the bank, with RAP being defined as the margin

generated by the customer, taking into account the level of risk incurred by the bank in dealing with the customer. Based on these arguments, we propose the following hypothesis:

H1: Centrally operating loan managers with expert knowledge are able to generate RAP for their bank.

If hypothesis 1 is supported, it provides evidence that banks are able to extract RAP from centrally managed customers, but does not tell us anything about the reasons why. We argue that banks should not treat all customers centrally, but only the more problematic ones. Thus, banks should not only allocate customers to central or local loan managers according to the information available about them, but also according to their risk profile. As a consequence, centrally operating loan managers with expert knowledge should employ their expertise to evaluate the more complex and opaque and therefore riskier customers. In contrast, locally operating loan managers with broad knowledge should capitalise the soft information gathered through their personal relationships with the customer in order to provide not only loans, but also other financial products. Thus, we hypothesise that:

H2: Centrally operating loan managers with expert knowledge manage only "high risk" customers in order to extract RAP from them.

III. Data and Methodology

A. Data

This research is based on a sample of privately owned SMEs domiciled in Finland. The loan database incorporates 2,522 SME-year observations from the financial period of December 2001 to December 2005. The data were provided by 21 small local cooperative banks. All the banks in the sample have a few branches and short lines of command. They tend to rely on deposits (since they are small, they are not able to approach regulated markets) and have very similar asset-liability mixes (they all tend to finance local households and small local firms). Moreover, the banks in the sample operate in a context characterised by limited competition. All in all, our sample is made up of banks that are similar, not only in terms of their cost structure, deposit and credit strategy, and asset-liability mix, but also in terms of their management objectives and style, operating efficiency, market served, etc. In line with prior literature, the sample includes only non-financial SMEs.

Table 1. Market Characteristics

This table presents the Finnish credit market for lending and guarantees (in million euros) by sector.

Year	2005	2004	2003	2002	2001
Non-financial corporations	39,507	30,126	27,994	27,981	27,042
Financial and insurance institutions	992	767	790	586	1,269
Public sector entities and nonprofit institutions	3,669	2,092	2,555	1,619	1,508
Households	63,592	55,509	49,188	43,452	39,832
Foreign markets	12,802	7,587	5,950	6,911	9,473
Total	120,562	96,081	86,477	80,549	79,124
Non-performing assets	331	359	417	516	582
Non-performing assets to total	0.3%	0.4%	0.5%	0.6%	0.7%

The dataset includes firm-specific information, such as financial figures, and information about bank-firm relationships, such as data about loans, their characteristics and the services provided to firms. Both the firms' financial figures and the bank–firm relationship data are captured at the end of December in each year considered. In addition, banks evaluate and assign internal credit ratings to firms. The internal ratings summarise information about firm quality and credit risk in broad terms, and they are determined on the basis of firm-specific information. Internal ratings are assigned as a part of complying with the Basel II capital adequacy rules by using the F-IRB (foundation internal-rating-based approach) to estimate a firm's probability of default[1]. All banks considered in our sample rely on the same internal rating system that exploits the same set of variables, giving them the same weight. This implies that the credit evaluation does not depend on the respective bank and that the firms considered in our sample, which migrate from one bank to another, will be rated in the same way. This aspect is not trivial since differences in the way in which banks evaluate and rate a firm could have adversely affected the consistency of our results. The internal rating system used looks at a firm's performance and mainly relies on the information that the bank can access from the firm's financial report and from the bank's system archives. The loan managers who deal with the customer are in charge of feeding the system with data and revising the internal rating, typically on a yearly basis, although riskier customers may be re-evaluated more frequently. The loan managers use the internal rating system in order to make lending decisions. Loan managers are allowed some room for manoeuvre. However, when the banks deal with more complex customers. i.e. customers who ask for greater loans and who are considered riskier or who need finance for a complex project, the lending decision is taken by their headquarters, where expert loan managers scrutinise the credit request and the firm performance, instead of the locally operating loan manager. This happened in 195 cases in our dataset and is the focus of our research.

The ratings are based on a scale ranging from 3 (highest quality) to 11 (lowest quality). The absence of firms with ratings of 1 or 2 is due to the fact that none of the sample firms are publicly

[1] Banks can use this approach only subject to approval from the Financial Supervisory Authority (FIN-

listed, thus none can ever receive one of the top two internal ratings. The rating of each firm is included in the dataset.

All banks in the sample are small local cooperative banks with strong links to the communities they serve. Table 2 presents data about them.

Table 2. Bank Statistics

Capital adequacy ratio (in %) is the ratio of own funds to the total amount of risk-weighted items.

Non-performing assets (in %) is the ratio of non-performing assets including zero-interest and guaranteed claims to claims on the public and off-balance sheet items.

Bank	Net profit	Assets	Equity	Capital adequacy ratio %	Non-performing assets %
1	7,612.50	441,023.75	49,213.25	22.6	0.7
2	4,673.00	416,692.50	23,777.75	20.9	0.5
3	7,776.75	502,571.00	48,543.50	21.4	0.5
4	9,490.25	679,642.75	100,524.75	27.1	0.8
5	5,572.25	513,603.25	36,934.25	14.8	0.5
6	5,835.25	421,904.75	36,063.50	15.8	0.9
7	4,841.50	405,811.50	33,926.50	18.3	0.4
8	14,931.75	1,202,881.50	73,311.25	11.4	0.5
9	12,050.50	752,773.50	68,418.25	19.3	0.3
10	3,251.00	367,396.00	23,635.25	14.0	0.7
11	4,822.50	505,568.50	41,485.50	17.0	0.3
12	4,677.50	510,144.00	29,443.00	11.9	0.7
13	10,664.50	1,076,093.00	61,651.50	12.1	0.5
14	5,531.25	431,610.00	33,154.50	12.7	0.9
15	9,546.25	627,188.75	55,312.00	18.1	0.2
16	2,201.25	574,952.00	19,971.75	9.7	0.9
17	7,388.00	341,966.25	60,788.50	32.7	0.3
18	10,151.75	1,290,003.25	57,681.50	10.9	0.5
19	8,610.50	1,411,773.00	53,761.25	12.3	1.0
20	5,723.10	594,952.60	36,664.45	15.2	0.8
21	4,556.75	457,302.50	33,083.00	15.8	0.9

The banks show differences in terms of both assets and equity: in the case of assets, the largest bank is almost 2.5 times the size of the smallest; regarding equity, the most capitalised bank is five times the size of the least capitalised one. However, by relating these numbers to the overall banking market in Finland, in which the total assets of all banks at the end of the sample period amount to 294 billion €, it is apparent that these differences are marginal. The level of non-performing assets compared to total assets is extremely low and very similar for all the banks in the sample, reflecting the similar levels of risk incurred by them.

B. Methodology

In order to examine the impact of credit evaluations run centrally by loan managers with expert knowledge, we differentiate between firms whose credit applications were evaluated centrally

(n=195) and firms whose credit applications were evaluated locally (n=2,327). The analysis is carried out using STATA version 14. In order to test H1, we regress the dummy variable SPEC, which indicates whether the credit application was evaluated centrally, and a set of control variables on the banks' RAP using OLS. Then, we re-test H1 by using panel regression (random effects).

To test H2, we first investigate the selection process pursued by the bank and then whether the loan managers contribute to the bank's RAP. If loan managers with expert knowledge add to the bank's RAP because they deal with high-risk borrowers, we should find that banks assign loan managers who have expert knowledge to highly opaque firms – and that these loan managers have a positive impact on RAP when we look at the selected firms.

To account for the contextual factors that impact on our dependent variable but are not an integral part of the phenomenon, we also include control variables in the model. As discussed above opaqueness is a key contextual factor in lending decisions and impacts on the RAP of customers. As there is no direct measure for opaqueness, we draw on a set of indirect measures that reflect opaqueness. The proxies used are length of a relationship and the number of different banks with which a firm has business relationships. Longer relationships with a smaller number of banks reflect lower opaqueness for bank managers in loan decisions.

Due to the possibility that our results suffer from endogeneity linked to reverse causality, we also implement a robustness check. Even if we find support for H1 (i.e. centrally managed customers generate RAP for the bank) and H2 (i.e. centrally managed customers are high risk customers and generate RAP for the bank), we cannot rule out completely that a bank's decision to handle a customer centrally instead of locally is linked to the customer's profitability. Banks may decide to centrally manage those customers whom they consider more worthwhile, so as to support them in more complex projects and keep them satisfied. In order to control for reverse causality, we re-estimate the regressions using lagged observations. If there is reverse causality, the regression with the lagged observations should produce coefficients that are reversed.

IV. Variables Description

A. Dependent Variable

One of the distinctive features of this work is the dependent variable. In order to test the hypotheses, we develop a measure for the RAP of banks. This measure is based on two different components, namely the margin generated from a specific customer with respect to the products and services sold by the bank (loans and other financial products or services) and the risk the bank incurs by serving this customer.

The participating banks use activity-based costing to monitor the margin generated from each customer. They calculate the margin as the difference between (1) the income generated from the customer in terms of interest payments on short- and long-term loans as well as fees paid to the bank, (2) the interest that the bank has to pay to the providers of funds (be they savers, bondholders, etc.) plus the fees that the bank has to pay when it outsources or buys external financial services, and (3) the cost of the time the bank's personnel allocates to specific customers. The internal rating used by the bank captures information about a customer's financial position and is determined by firm-specific information. Lower credit quality, as reflected in these ratings, is likely to be associated with less credit being granted, a higher loan price or more collateral being required. The measure of a

bank's RAP from a given customer is the ratio of the margin generated from the customer, in euros, to the internal rating of that customer:

$$\mathbf{RAP} = \frac{\sum \left[\boldsymbol{i}_{\mathbf{SME}}^{\mathbf{STD}}(\mathbf{STD}) + \boldsymbol{i}_{\mathbf{SME}}^{\mathbf{LTD}}(\mathbf{LTD}) - \boldsymbol{i}_{\mathbf{BANK}}(\mathbf{STD} + \mathbf{LTD}) \right] + \sum [(\mathbf{fee}_{\mathbf{SME}} - \mathbf{fee}_{\mathbf{BANK}}] - \mathbf{Pers}}{\mathbf{RATING}}$$

where **RAP** is the risk-adjusted profitability, $\boldsymbol{i}_{\mathbf{SME}}^{\mathbf{STD}}$ is the specific interest rate charged to the customer by the bank for short-term loans, **STD** is the amount of the short-term loan, $\boldsymbol{i}_{\mathbf{SME}}^{\mathbf{LTD}}$ is the specific interest rate charged to the customer by the bank for long-term loans, **LTD** is the amount of the long-term loan, $\boldsymbol{i}_{\mathbf{BANK}}$ is the average cost of funding for the bank, $\mathbf{fee}_{\mathbf{SME}}$ and $\mathbf{fee}_{\mathbf{BANK}}$ are respectively the fee received from the customer and the cost of services provided to that customer that are outsourced or bought from other financial institutions, and **Pers** is the cost of the personnel involved in assisting the customer. Typically, centrally managed customers involve a higher proportion of personnel costs in their RAP. One reason for that is the transaction costs resulting from information travelling up and down more levels of hierarchy. With regard to centrally handled customers, loan managers need more time to become familiar with the specifics of the loan application because they cannot draw on their experience and knowledge gained from direct interaction with the customers.

B. Independent and Control Variables

In order to test our hypotheses, we use a dummy variable that records whether a loan manager makes a lending decision with expert knowledge in the headquarters of the bank (SPEC). The dummy has a value of 1 when the lending decision is taken in the headquarters of the bank and 0 when it is taken in the local branch of the bank. A centrally pursued evaluation of a firm implies that loan managers with expert knowledge, who are able to allocate more time and effort in assessing the firm's creditworthiness and the request for funds, are involved. As a consequence, the costs of the bank increase. However, a more thorough evaluation of the firm might also allow for the development of relational capital that increases the bank's access to private information and may therefore enhance cross-selling possibilities. This implies that there is no upfront certainty about the relationship between SPEC and RAP. If the benefits gained from the additional information gathered exceed the additional personnel costs, the relationship will be positive and significant. If, however, the additional personnel costs out-weigh the benefits gained from the incremental information, the relationship will be negative and significant. A non-significant relationship implies that the impact of the centralisation of the lending decision on RAP is not clear.

We also add a set of controls. First, we control for the length of the relationship between a firm and a bank, expressed in years (LENGTH). The length of the relationship is an indicator of relationship strength that is widely used in the prior literature (Berger and Udell 1995; Petersen and Rajan 1994). Since the length of the relationship increases the amount of knowledge and reduces the incremental costs faced by the bank in evaluating the firm's riskiness and its financial needs, we expect a positive relationship between LENGTH and the bank's RAP. Second, we control for the number of relationships the SME has with other banks (RELATIONSHIPS). A firm's diversification of its banking services across several sources is expected to be negatively associated with the bank's RAP (Elsas 2005).

Third, we control for the amount of loans using the total amount of loans the bank provides to the firm (TOTALLOANS), since the amount of loans can be an important factor in deciding to transfer the lending decision from the local loan manager to the headquarters. We expect the amount of loans to be positively associated with the bank's RAP, since interest income increases the bank's margin (as long as it does not increase borrower risk too much). Moreover, we control for the firm's size, which is expressed by its assets (FIRM_ASSETS). Firms with larger assets need more funds to finance them and are thus expected to rely more on both long-term and short-term loans. At the same time, larger assets implicitly provide a greater capability for the bank to recover the loans if the firm defaults, thus reducing the bank's risk. As a consequence, we expect a firm's assets to be positively related to a bank's RAP.

Since the bargaining power of the customer is one of the core factors that affect a bank's RAP, we control for the bargaining power of the customer, over and above its firm size. An SME's non-size-related bargaining power is measured using its equity-to-debt ratio (EQUITY_RATIO). Firms with a high equity-to-debt ratio are considered financially sound and thus better able to deal with any difficulties. The intrinsic financial solidity of firms with high equity-to-debt ratios puts them in a better position to negotiate better loan terms (particularly regarding the interest rates charged) and lower fees for other banking services.

A firm's profitability is included by using its return on equity (ROE). The ROE shows the firm's ability to generate profits to repay its loans. Additionally, according to pecking order theory, a high ROE increases the firm's ability to use retained profit to finance its on-going operations and growth, thereby reducing its dependence on bank finance. The expectation is that a high ROE decreases the bank's RAP.

In order to control for overall market conditions, we include the change in gross domestic product (CH_GDP).

Finally, we add a control for the bank's size (BANK_ASSETS). RAP might be affected by a bank's size as larger banks are able to offer more products and services and can therefore have more negotiating power and thus enjoy higher RAP. However, smaller banks might be more effective in selecting and keeping customers by relying on their relationship with a firm, and can thus face reduced risk that can be transformed into higher RAP. Since the direction of the effect is not clear, we do not have any expectations about whether this variable is positive or negative.

V. Summary Statistics

Table 3 presents the summary statistics of the variables considered.

Table 3. Summary Statistics

The data are bank–firm relationships of small and medium-sized firms located in Finland from year 2001 to 2005. All data are expressed in quantities, as percentages or in euros. The bank–firm relationship is classified as centrally managed if a loan manager in the bank's headquarters manages the loan. The bank–firm relationship is classified as locally managed if a loan manager in a local branch of the bank manages the loan.

PANEL A Descriptive statistics by place of loan management

	Managed centrally n=195				Managed locally n=2327			
Name	Mean	Std.dev	Min	Max	Mean	Std.dev	Min	Max
RAP	2261	2178	-3	9003	675	747	-3	6431
RELATIONS	0.354	0.479	0	1	0.095	0.293	0	1
LENGTH	14.338	8.417	2	45	14.790	8.656	1	66
TOTALLOANS (in T€)	7160	13100	19	8110	1793	3800	0.095	5870
FIRM_ASSETS (in T€)	5888	6267	123	40819	902	1831	5	30705
EQUITY_RATIO	35.859	23.141	0	97	25.441	20.667	0	99
ROE	19.156	52.756	-200	-200	39.009	82.610	-200	-200
CH_GDP	0.035	0.014	0.013	0.054	0.035	0.014	0.013	0.054
BANK_ASSETS (in M€)	799	419	310	1552	664	297	322	1323

PANEL B Descriptive statistics and correlations (n=2522)

Name	Mean	Std.dev	Min	Max	1	2	3	4	5	6	7	8	9	10
RAP	798	1029	-3	9003	1.000									
SPEC	0.077	0.267	0	1	0.412	1.000								
RELATIONS	0.115	0.319	0	1	0.199	0.217	1.000							
LENGTH	14.755	8.637	1	66	0.144	-0.014	0.065	1.000						
TOTALLOANS (in T€)	2207	5342	0.095	8110	0.524	0.268	0.082	0.064	1.000					
FIRM_ASSETS (in T€)	1287	2809	5	40819	0.554	0.474	0.246	0.152	0.246	1.000				
EQUITY_RATIO	26.246	21.049	0	99	0.078	0.132	0.066	0.084	0.003	0.178	1.000			
ROE	37.474	80.863	-200	-200	-0.065	-0.066	-0.081	-0.051	-0.054	-0.104	-0.193	1.000		
CH_GDP	0.035	0.014	0	0.053	0.003	0.023	0.013	0.011	0.004	-0.003	0.018	-0.008	1.000	
BANK_ASSETS (in M€)	726	364	310	1552	0.068	0.014	-0.020	0.001	0.010	0.067	0.030	-0.032	-0.013	1.000

RAP has an average value of 798, but with values spread from -3 (the least profitable relationship from a bank's point of view) to 9,003 (the most profitable relationship from a bank's point of view). This means that banks are able to extract margins from on-going relationships, the losses being almost exclusively linked to the default of the customer and the consequent write-offs that banks have to record. The average RAP of the subgroup of centrally evaluated firms is 2,261, whereas the average RAP of the subgroup of locally evaluated firms is 675. The existence of multiple bank relationships per SME is 0.115 on average, with 0.354 in centrally evaluated firms and 0.095 in locally evaluated firms. The average length of the relationship in our sample is approximately 15 years, the longest relationship being 66 years, which suggests stable relationships between the SMEs and the banks. Our average relationship length is longer than the average length found in the seminal works by Berger and Udell (1995) and Petersen and Rajan (1995, 1994). However, it is in line with papers focusing on Europe (Harhoff and Körting 1998; Hernandez-Canovas and Martınez-Solano 2010; Howorth and Moro 2012; Moro et al. 2012).

On average, a firm's total loans amount to 2.2 million Euros. However, centrally evaluated firms tend to have considerably higher total loans than locally evaluated firms. The average amount of a firm's assets is 1.3 million Euros, and the average equity ratio is 26.2%, suggesting that the average firm is quite leveraged. A firm's ROE amounts to an average of 37.5%. Interestingly, firms in

the subgroup of locally evaluated firms are more profitable in terms of their ROE than firms in the subgroup of centrally evaluated firms.

In terms of correlations, RAP is positively correlated to SPEC and TOTALLOANS. As expected, FIRM ASSETS is positively correlated to RAP. SPEC is correlated with FIRM ASSETS, suggesting that centrally evaluated firms are bigger in terms of their total assets.

VI. Econometric Results

A. Main Results

In order to test the first hypothesis, we estimate two regressions (OLS and panel regression with random effects) that include a dummy as a core variable that reports who evaluated the customer, i.e. loan managers who operate in a bank's local branch (0) or loan managers who operate at its headquarters (1). The regressions also include a set of controls like the relationship's strength, borrower characteristics, overall market conditions (change in GDP), bank-specific differences (BANK_ASSETS) and year dummies. Table 4 reports the regression results.

Table 4. Regression of the Role of the Bank Specialist on RAP

The dependent variable is a bank's RAP, measured at the financial year-end.

		OLS			RANDOM EFFECTS		
		Number of obs.	2522		Number of obs.	2522	
		F(12, 2509)	35.35		Wald chi2(12)	161.84	
		Prob > F	0.000		Prob > chi2	0.000	
		R-squared	0.487		R-squared (within)	0.049	
		Root MSE	0.718		R-squared (between)	0.465	
Name	**Description**	**Coef.**	**Std. Err.**	**P>|t|**	**Coef.**	**Std. Err.**	**P>|z|**
SPEC	Centrally (1) vs locally (0) managed customers	0.473	0.131	***	0.552	0.223	***
LENGTH	Length of the relation	0.066	0.015	***	0.066	0.027	***
TOTALLOANS	Total amount of loans	0.432	0.043	***	0.133	0.048	***
FIRM_ASSETS	Firm assets	0.354	0.056	***	0.436	0.093	***
EQUITY_RATIO	Firm's equity ratio	-0.008	0.015		-0.065	0.021	***
ROE	Firm's return on equity	0.007	0.012		0.008	0.012	
CH_GDP	Change in GDP	0.001	0.014		-0.014	0.009	
BANK_ASSETS	Bank assets	0.034	0.019	*	0.026	0.029	
Year							
2002		-0.034	0.051		-0.016	0.038	
2003		-0.057	0.047		-0.020	0.038	
2004		0.290	0.054	***	0.107	0.044	***
2005		0.212	0.053	***	0.025	0.043	
CONSTANT		-0.130	0.045	***	-0.078	0.042	
					rho		0.596
					sigma_u		0.503
					sigma_e		0.414

* Sig. at .10, ** Sig. at .05, ***Sig. at .01.

Variable Description:
SPEC is a dummy variable taking a value of 1 if a firm is managed centrally and 0 otherwise.
LENGTH is the length of a bank–firm relationship.
TOTALLOANS is the total amount of loans that a firm has from the respective bank.
FIRM_ASSETS is the total amount of a firm's assets at the financial year-end.
EQUITY_RATIO is a percentage of a firm's equity to its total assets.
ROE is a firm's return on equity.
CH_GDP is the change in GDP.
BANK_ASSETS is the total amount of a bank's assets at the financial year-end.

The first regression (OLS) is significant ($p < .000$) and has an R2 of 0.487. The White test suggests some level of heteroscedasticity in the model. Thus, we use robust standard errors estimation. At the same time, the regression does not present collinearity problems[2]. The length of

[2] All VIF-values are below 5, the mean VIF-value is 2.20.

the relationship (LENGTH) is highly significant and positive. Looking at the interest-related products, TOTALLOANS is positive, as expected, and is highly significant. Thus, there is evidence that the strength of the relationships and the amount of short- and long-term loans provided to SMEs contribute to a bank's RAP. As expected, a firm's size (FIRM_ASSETS) impacts positively on a bank's RAP, while a firm's financial solidity (EQUITY_RATIO) and profitability (ROE) are not significant. Finally, market conditions (CH_GDP) are not significant, whereas the control for bank size (BANK_ASSETS) is weakly positive and significant.

Our variable of interest (SPEC) is positive and significant, suggesting that centrally evaluated firms contribute positively to a bank's RAP. This positive relationship suggests that the benefits linked to the activities pursued by centrally operating loan managers with expert knowledge for the respective customer prevail over the additional costs accrued because of the extra time and possibly higher personnel costs.

The second regression presents the results estimated using a panel random effect regression. In this regression the firm-specific effects are assumed to be uncorrelated with the independent variables. The regression is significant ($p < .000$)[3]. The relationship variables follow the same pattern as in the other specification: LENGTH and TOTALLOANS are positive and significant. Regarding firm variables, FIRM_ASSETS is highly significant and positive. In this specification, EQUITY_RATIO is highly significant and is negative as was expected. In line with the first regression CH_GDP and BANK_ASSETS are not significant. Further, SPEC is positive and significant, confirming the role centrally operating loan managers with expert knowledge play in contributing to a bank's profitability.

However, this first level of analysis only tells us that centrally managed customers are able to contribute to the bank's RAP, but does not tell us the reasons why. In order to investigate why customers are managed centrally (H2) we estimate an instrumental variable regression with an endogenous regressor. First, we separately estimate a probit regression for SPEC on a set of independent variables and year dummies[4]. We model the selection process according to a firm's information asymmetry, the firm's characteristics (risk of the firm) and its performance. As far as information asymmetry is concerned, we use a set of variables that measure whether a bank is adversely affected in accessing information. More specifically, we look at the firm's number of relationships with other banks (RELATIONSHIPS) and its length of the relationship with the bank (LENGTH). In terms of risk we include the amount of the firm's assets (FIRM_ASSETS), the amount of loans (TOTALLOANS), the return on equity (ROE) and the equity ratio (EQUITY_RATIO). The results are reported in table 5.

---

[3] Within R^2 of 0.049 and between R^2 of 0.465.

[4] VIF values are below 5, the mean VIF value is 1.08.

Table 5. Probability of a Firm to be Managed Centrally or Locally

The dependent variable is a dummy variable taking the value of 1 if the firm is managed centrally and 0 otherwise.

		PROBIT SPEC		
		Number of obs.		2522
		Wald chi2(12)		209.90
		Prob > chi2		0.000
		Pseudo R2		0.295
		Log pseudolikehood		-484.200
Name	**Description**	**Coef.**	**Std. Err.**	**P>t**
Selection of lending evaluation				
RELATIONS	Number of bank relations	0.179	0.034	***
LENGTH	Length of the relation	-0.231	0.051	***
TOTALLOANS	Total amount of loans	0.224	0.048	***
FIRM_ASSETS	Firm assets	0.405	0.060	***
EQUITY_RATIO	Firm's equity ratio	0.157	0.040	***
ROE	Firm's return on equity	-0.030	0.049	
CH_GDP	Change in GDP	0.055	0.045	
BANK_ASSETS	Bank assets	-0.007	0.052	
Year				
2002		0.447	0.282	
2003		0.368	0.284	
2004		0.705	0.280	**
2005		0.648	0.281	**
CONSTANT		-2.213	0.269	***

* Sig. at .10, ** Sig. at .05, ***Sig. at .01.

Variable Description:
RELATIONS is the number of bank relationships that a firm has.
LENGTH is the length of a bank–firm relationship.
TOTALLOANS is the total amount of loans that a firm has from the respective bank.
FIRM_ASSETS is the total amount of a firm's assets at the financial year-end.
EQUITY_RATIO is a percentage of a firm's equity to its total assets.
ROE is a firm's return on equity.
CH_GDP is the change in GDP.
BANK_ASSETS is the total amount of a bank's assets at the financial year-end.

We find that the relationship variables (RELATIONSHIPS, LENGTH, TOTALLOANS) as well as ASSETS and EQUITY_RATIO are significant. All of these variables are positive except for LENGTH. Our findings suggest that the probability of being evaluated by loan managers in the bank's headquarters decreases with the length of the relationship and increases with the number of banks the firm borrows from. This implies that more opaque firms are more likely to be managed centrally. In addition, the probability of being evaluated by loan managers in the bank's headquarters increases with the amount of loans provided to the borrower, possibly because higher lending

volumes increase the potential loss at default and therefore the bank's risk. Finally, the probability of being evaluated centrally increases with the firm's assets, implying that centrally operating loan managers with expert knowledge are asked to deal with more complex projects that require a more thorough evaluation of the customer. All in all, the regression suggests that firms evaluated by centrally operating loan managers with expert knowledge are more opaque and riskier, and invest more. As a consequence, they are also more complex to deal with. However, are firms that are more complex to deal with also the ones that generate higher RAP for the bank?

To answer this question, we re-estimate our model by using instrumental variable regression (TREATREG). This allows us to examine whether centrally managed firms are also the ones that impact positively on RAP. The results are reported in table 6.

Table 6. Instrumental Variable Regression of the Role of Bank Specialists on RAP

The dependent variable in the first-stage is a dummy variable taking the value of 1 if the firm is centrally managed and 0 otherwise. The dependent variable in the second-stage is the bank's RAP, measured at the financial year-end.

		TREATREG		
		Number of obs.		2522
		Wald chi2(12)		419.87
		Prob > chi2		0.000
		F(1,2513)		16.195
		Prob > F		0.000
Name	**Description**	**Coef.**	**Std. Err.**	**P>|z|**
Selection of lending evaluation				
RELATIONS	Number of bank relations	0.176	0.035	***
LENGTH	Length of the relation	-0.221	0.051	***
TOTALLOANS	Total amount of loans	0.179	0.037	***
FIRM_ASSETS	Firm assets	0.423	0.062	***
EQUITY_RATIO	Firm's equity ratio	0.160	0.040	***
ROE	Firm's return on equity	-0.041	0.049	
CH_GDP	Change in GDP	0.055	0.045	
BANK_ASSETS	Bank assets	-0.010	0.052	
Regression on RAP				
SPEC	Lending technology	0.407	0.148	***
LENGTH	Length of the relation	0.064	0.015	***
TOTALLOANS	Total amount of loans	0.435	0.043	***
FIRM_ASSETS	Firm assets	0.362	0.057	***
EQUITY_RATIO	Firm's equity ratio	-0.001	0.015	
ROE	Firm's return on equity	0.007	0.011	
CH_GDP	Change in GDP	0.001	0.013	
BANK_ASSETS	Bank assets	0.035	0.018	*
Year				
2002		-0.034	0.051	
2003		-0.057	0.047	
2004		0.290	0.054	***
2005		0.212	0.053	***
CONSTANT		-0.125	0.045	***
		rho		0.047
		sigma		0.716
		lambda		0.034

* Sig. at .10, ** Sig. at .05, ***Sig. at .01.

Variable Description:
RELATIONS is the number of bank relationships that a firm has.
LENGTH is the length of a bank–firm relationship.
TOTALLOANS is the total amount of loans that a firm has from the respective bank.
FIRM_ASSETS is the total amount of a firm's assets at the financial year-end.
EQUITY_RATIO is a percentage of a firm's equity to its total assets.
ROE is a firm's return on equity.
CH_GDP is the change in GDP.
BANK_ASSETS is the total amount of a bank's assets at the financial year-end.

We determine the strength of our instrument by calculating the F statistics. The F value is 16.20 and not smaller than the critical value, which supports the view that our instrument is not weak. The model suggests that the coefficients of the selection of customer evaluation are qualitatively similar to those of the probit model. In addition, the results on RAP are close to the results of OLS regression on RAP. Finally, in the instrumental regression, SPEC is positive and significant, suggesting that firms which are evaluated by loan managers in a bank's headquarters increase the bank's RAP. Thus, we find support for the fact that banks select more opaque, riskier and more complex firms to be evaluated by centrally operating loan managers, who are, in turn, able to extract profitability from them.

B. Robustness Checks

As discussed in the hypotheses section, banks might decide to manage firms centrally because they consider them important due to the possibility to generate a high RAP. In this case, the bank would be aware of the additional value provided by these firms and therefore decide to deal with them centrally in order to grant them a high quality service and to consolidate their relationship with them. As a consequence, there would be reverse causality between RAP and being centrally managed. In order to investigate this possible issue, we re-estimate the regression using one-year lagged variables. If centrally managed firms are the ones that are considered more important for the bank because of the RAP they are generating, we should find a negative significant relationship between the variable of interest (SPEC) and RAP. The results are reported in table 7.

Table 7. Regression of the Role of Bank Specialists on Lagged RAP

The dependent variable is the bank's RAP lagged one year.

		OLS, lagged		
		Number of obs.		1729
		F(12, 2509)		38.15
		Prob > F		0.000
		R-squared		0.583
		Root MSE		0.638
Name	**Description**	**Coef.**	**Std. Err.**	**P>|t|**
SPEC	Centrally (1) vs locally (0) managed customers	0.502	0.155	***
LENGTH	Length of the relation	0.063	0.018	***
TOTALLOANS	Total amount of loans	0.456	0.039	***
FIRM_ASSETS	Firm assets	0.343	0.076	***
EQUITY_RATIO	Firm's equity ratio	0.002	0.018	
ROE	Firm's return on equity	-0.007	0.014	
CH_GDP	Change in GDP	0.022	0.016	
BANK_ASSETS	Bank assets	0.033	0.020	
Year				
2003		-0.022	0.052	
2004		-0.044	0.051	
2005		0.226	0.055	***
CONSTANT		-0.119	0.051	**

* Sig. at .10, ** Sig. at .05, ***Sig. at .01.

Variable Description:
SPEC is a dummy variable taking a value of 1 if a firm is managed centrally and 0 otherwise.
LENGTH is the length of a bank–firm relationship.
TOTALLOANS is the total amount of loans that a firm has from the respective bank.
FIRM_ASSETS is the total amount of a firm's assets at the financial year-end.
EQUITY_RATIO is a percentage of a firm's equity to its total assets.
ROE is a firm's return on equity.
CH_GDP is the change in GDP.
BANK_ASSETS is the total amount of a bank's assets at the financial year-end.

The regression is significant ($p < .000$). LENGTH and TOTALLOANS are positive and significant. As far as the variables of a firm are concerned, only FIRM_ASSETS is significant and has the expected result. In line with the first model, CH_GDP is not significant and BANK_ASSETS is

positive, but not significant. Interestingly, SPEC is again positive and significant. This evidence rules out reverse causality.

Finally, it might be argued that our analysis suffers from endogeneity, since the dependent variable is affected by the internal rating of a firm as well as the decision process, which is manifested in the independent variables. In order to rule out this issue, we retest our specifications using the absolute return of the customer as a dependent variable (detailed results not reported here). Interestingly, we obtain the same results as the ones presented in tables 4 to 7. More importantly, the variable SPEC is always positive and significant. In addition, its coefficients are not significantly different from those presented in tables 4 to 7.

VII. Discussion

Our analysis provides interesting results that are in line with the findings of Stein (2002) and Liberti and Mian (2009). Lending approaches change according to the type of customer and the information banks can access. Customers whose creditworthiness is easy to evaluate, because the information about them is mainly soft and accessible for local loan managers as well as those who need plain vanilla loans, are managed by loan managers in local branches of the bank. In contrast, customers who are characterised by a high level of information asymmetry, who pursue highly complex projects or who increase the exposure of the bank regarding the amount of the loan, are managed by loan managers in the bank's headquarters. In the latter case, banks can be adversely affected by the loss of soft information, but at the same time benefit from the expert knowledge of the loan managers involved in evaluating the creditworthiness of the customers.

Our results suggest that this strategy pays. By evaluating "simple" customers locally, banks can benefit from reduced costs in managing them and local loan managers can exploit their personal knowledge of them. Regarding "complex" customers, a bank's centrally operating loan managers with expert knowledge are able to turn high risk and potentially low return customers into highly rewarding ones by increasing the bank's RAP. This happens for various reasons. First, loan managers who operate centrally are able to employ their expertise to make an informed decision about whether to lend to a customer or not. In addition, not only are they able to price a loan according to the riskiness of the customer, they can also propose and sell financial products (e.g. loans) that better fit the customer's needs, implicitly reducing the risk the bank can incur when the borrower is asked to deal with a loan that does not match its cash flows.

Since centrally operating loan managers increase the RAP realized from the respective customer, banks could be tempted to move lending decisions entirely to their headquarters. However, our analysis suggests that this would be the wrong way to operate since loan managers who operate locally are able to generate RAP. The complete centralisation of the lending decision process would lead to an ineffective and inefficient use of resources. This point is strongly supported by the key role played by local loan managers in our sample: the largest majority of the loans (more than 92%) are managed by loan managers in local branches and contribute to the profitability of the bank. This implies that local loan managers are able to contribute dramatically to a bank's profitability. At the same time, the limited number of loans that are managed by loan managers in a bank's headquarters suggests that banks are very selective about allocating firms to centrally operating loan managers with expert knowledge. Possibly, they are aware of the additional costs incurred by involving expert staff and thus try to keep their use of them to a minimum.

VIII. Conclusion

For many years, research on bank lending has investigated how both soft and hard factors affect lending relationships. Firm characteristics, such as the age of a firm, the length of a lending relationship and the concentration of the bank system are just some of the aspects that have been examined and their impact on both banks (in terms of reduction of the risk incurred) and firms (in terms of access to credit) have been discussed. In particular, Stein (2002) and Liberti and Mian (2009) proposed that banks should employ different lending approaches according to the customers they have and the information they are able to exploit. Whereas complex customers who can mainly provide hard, factual data should be analysed centrally, less complex but very opaque customers should be examined locally by using soft information.

Our findings provide support for Stein's (2002) arguments. We find that banks are able to extract profitability from their lending relationships both when they manage their borrowers in the bank's headquarters and in its local branches. Nevertheless, borrowers who are evaluated centrally are those who bear greater risk, since they are more complex and characterised by a higher degree of opaqueness that can only partially be addressed by centrally operating loan managers. By managing high-risk customers in a bank's headquarters, banks are able to reduce the risk and to extract RAP from them as well. In particular, we contribute to Stein (2002) and Liberti and Mian (2009) by showing that communication in hierarchies allows for specialised knowledge accumulation. Our findings also contribute to Garicano's (2000) notions of the specialisation of knowledge in hierarchies, not just the transmission of information.

However, our research has several limitations: first, it relies on a dataset that considers only observations from Finland. Prospective research should try to investigate whether our findings hold true in other bank contexts. Second, it uses data from before 2008. We cannot rule out that the financial crisis and the changes in the banking regulation impacted on the way banks decide how to treat borrowers. In particular, it would not be very surprising to discover that banks now manage a larger percentage of borrowers centrally.

Notwithstanding these limitations, this study indicates that banks are able to properly select and manage their borrowers: they can extract RAP from both easy-to-treat borrowers, who are managed locally, and more complex borrowers, who are managed centrally by loan managers with expert knowledge.

REFERENCES

Alessandrini, P., Presibitero, A. F., & Zazzaro, A. (2009). Banks, Distances and Firms' Financing Constraints. *Review of Finance*, *13*(2), 261–307. internal-pdf://bank_distance_rof-1502789633/Bank_Distance_RoF.pdf

Angelini, P., Di Salvo, R., & Ferri, G. (1998). Availability and cost of credit for small businesses: Customer relationships and credit cooperatives. *Journal of Banking & Finance*, *22*(6-8), 925–954.

Berger, A. N., & Frame, S. W. (2007). Small Business Credit Scoring and Credit Availability. *Journal of Small Business Management*, *45*(1), 5–22.

Berger, A. N., Klapper, L. F., & Udell, G. F. (2001). The Ability of Banks to Lend to Informationally Opaque Small Business. *Journal of Banking & Finance*, *25*(12), 2127–2167.

Berger, A. N., Miller, N. H., Petersen, M. A., Rajan, R. G., & Stein, J. C. (2005). Does function follow organizational form? Evidence from the lending practices of large and small banks. *Journal of Financial Economics*, *76*, 237–269.

Berger, A. N., & Udell, G. F. (1995). Relationship Lending and the Lines of Credit in Small Firm Finance. *Journal of Business*, *68*(3), 351–381.

Bharath, S. T., Dahiya, S., Saunders, A., & Srinivasan, A. (2011). Lending Relationships and Loan Contract Terms. *The Review of Financial Studies*, *24*(4).

Bharath, S. T., Dahiyab, S., Saunders, A., & Srinivasan, A. (2007). So what do I get? The bank's view of lending relationships. *Journal of Financial Economics*, *85*, 368–419.

Cerqueiro, G., Degryse, H., & Ongena, S. (2011). Rules versus discretion in loan rate setting. *Journal of Financial Intermediation*, *20*, 503–529. internal-pdf://1-s2.0-s1042957310000525-main-3527783682/1-s2.0-S1042957310000525-main.pdf

Cipolla, C. M. (1994). Uomini Duri. In C. M. Cipolla (Ed.), *Tre Storie Extravaganti*. Bologna: Il Mulino.

Cipolla, C. M. (2002). *Storia Economica dell'Europa Pre-Industriale* (Vol. 2nd). Bologna: Il Mulino.

Danos, P., Holt, R., & Imhoff, E. J. (1989). The use of accounting information in bank lending decisions. *Accounting organization and society*, *14*, 235–246.

DeYoung, R., Glennon, D., & Nigro, P. (2008). Borrower–lender distance, credit scoring, and loan performance: Evidence from informational-opaque small business borrowers. *Journal of Financial Intermediation*, *17*, 113–143.

Elsas, R. (2005). Empirical determinants of relationship lending. *Journal of Financial Intermediation*, *14*(1), 32–57.

Farinha, L. A., & Santos, J. A. C. (2002). Switching from Single to Multiple Bank Lending Relationships: Determinants and Implications. *Journal of Financial Intermediation*, *11*, 124–151.

Garicano, L. (2000). Hierarchies and the organization of knowledge in production. *Journal of Political Economy*, *108*(5), 874–904.

Greenbaum, S. I., Kanatas, G., & Venezia, I. (1989). Equilibrium Loan Pricing Under the Bank-Client Relationship. *Journal of Banikng and Finance*, *13*(2), 221–235. internal-pdf://1-s2.0-0378426689900617-main-1400265985/1-s2.0-0378426689900617-main.pdf

Harhoff, D., & Körting, T. (1998). Lending relationships in Germany - Empirical evidence from survey data. *Journal of Banking & Finance*, *22*(10-11), 1317–1353.

Hernandez-Canovas, G., & Martınez-Solano, P. (2010). Relationship lending and SME financing in

the continental European bank-based system. *Small Business Economics*, *34*(4), 465–482.

Howorth, C., & Moro, A. (2012). Trustworthiness and the Interest Rates: An Empirical Study of SMEs and Small Banks in Italy. *Small Business Economics*, *39*(1), 161–177. doi:10.1007/s11187-010-9285-4

Howorth, C., Peel, M. J., & Wilson, N. (2003). An Examination of the Factors Associated with Bank Switching in the U.K. Small Firm Sector. *Small Business Economics*, *20*(4), 305–317.

Liberti, J. M., & Mian, A. R. (2009). Estimating the Effect of Hierarchies on Information Use. *Review of Fianancial Studies*, *22*(10), 4057–4090. internal-pdf://4057.full-3645651458/4057.full.pdf

Mason, C., & Stark, M. (2004). What do Investors Look for in a Business Plan? A Comparison of the Investment Criteria of Bankers,Venture Capitalists and Business Angels. *International Small Business Journal*, *22*(3), 227–248. internal-pdf://w-0737344000/What do Investors Look for in a Business Plan A Comparison of the Investment Criteria of Bankers, Venture Capitalists and Business Angels.pdf

Moro, A., Lucas, M. R., & Grimm, U. (2012). The Debt Structure of SMEs: An Optimisation Model. *Journal of Entrepreneurial Finance*, *16*(1), 87–108.

Neuberger, D., Pedergnana, M., & Räthke-Döppner, S. (2008). Concentration of Banking Relationships in Switzerland: The Result of Firm Structure or Banking Market Structure? *Journal of Financial Services Research*, *33*(2), 101–126.

Petersen, M. A., & Rajan, R. G. (1994). The Benefits of Lending Relationships: Evidence from Small Business Data. *Journal of Finance*, *49*(1), 3–37.

Petersen, M. A., & Rajan, R. G. (1995). The Effect of Credit Market Competition on Lending Relationship. *Quarterly Journal of Economics*, *110*(2), 407–443.

Petersen, M. A., & Rajan, R. G. (2002). Does Distance Still Matters? The Information Revolution in Small Business Lending. *Journal of Finance*, *57*(6), 2533–2570.

Petersen, M. A. (2004). Information: Hard and soft. *Working paper at Kellogg School of Management, Northwestern University*.

Rajan, R. G. (1992). Insiders and Outsiders: The Choice between Informed and Arms-Length Debt. *Journal of Finance*, *47*, 1367–1400.

Sharpe, S. A. (1990). Asymmetric Information, Bank Lending, and Implicit Contracts: A Stylized Model of Customer Relationships. *Journal of Finance*, *45*(4), 1069–1087.

Stein, J. C. (2002). Information Production and Capital Allocation: Decentralised versus Hierarchical Firms. *Journal of Finance*, *57*(5), 1891–1921.

Uchida, H., Udell, G. F., & Yamori, N. (2012). Loan officers and relationship lending to SMEs. *Journal of Financial Intermediation*, *21*, 97–122.