

Local Bank Competition, Loan Rates and Risk

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Local Bank Competition, Loan Rates and Risk

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Local Bank Competition, Loan Rates and Risk

Morten Sæthre*

February, 2018

Abstract

This paper investigates the effect of competition on the relation between borrowers' risk and interest rates in the market for business loans. I estimate the relationship between the loan rates and risk of closure conditional on the local market structure using detailed data on loan payments between individual firms and banks from Norway. The findings show that increased competition is associated with lower rates for less risky and higher rates for more risky loans. Comparing markets with three competing banks compared to a single bank, rates for loans to firms that closed down during the loan period were approximately 50 basis points higher, while loans to firms that didn't close down were approximately 20 basis points lower.

1 Introduction

Asymmetric information is an important and extensively studied feature of credit markets, where banks' ability to screen and monitor borrowers are important explanations for the existence of financial intermediation—see, e.g.,

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the early literature on credit rationing (Jaffee and Russel, 1976; Stiglitz and Weiss, 1981), or on competition and the hold-up problem (Sharpe, 1990; von Thadden, 2004).

The question of how competition affects bank risk has been a key policy issue for a long time (see, e.g., Caminal and Matutes, 2002; Boyd and Nicoló, 2005), though empirical studies have yielded mixed conclusions (see, e.g., Keeley, 1990; Beck et al., 2006, 2013). In markets characterized by asymmetric information and self-selection, market power can potentially mitigate the effects of adverse selection, as pointed out by Mahoney and Weyl (2017), though it is still unclear how market power interacts with monitoring and dynamic contracting practices often found in credit markets. Following the recent interest in competition in markets with asymmetric information, Crawford et al. (2015) estimate a structural model of bank loans, default and loan usage in the Italian market for business loans, finding that prices tend to fall with concentration, thus mitigating the effects of adverse selection.

Using matched lender and borrower data from the Norwegian business credit market, together with detailed information on the location of bank branches, I empirically investigate how local competition in the market for business loans affect the relationship between loan rates and firm risk, as measured by firm closure. The analysis utilizes variation within local areas where the number of banks with at least one branch changes over time. I show that the main driver of variation in local competition is branch closure, which I argue is driven by cost saving motives as households have increased their usage of online banking. The results suggests that more banks competing in the market leads to a closer link between interest rates set by banks and borrowers' risk. More precisely, I find that with more competition, the average loan rate is reduced, while there is an increased spread in loan rate between loans that are affected and unaffected by firm closure. In the preferred specification, which includes fixed effects for year and municipality, the estimates imply that going from one to two banks in the local market reduces interest rates for loans not affected by closure with 0.2 percentage points, while the effect of additional competitors is relatively small and not statistically significant. With more competition, the spread in rate to loans affected by closure increases from 1.5 percentage points in markets with one active bank to 1.75 in markets with two banks, and 2.1 in markets with 4 banks. This finding suggest that (local) competition in the bank market increases incentives to offer differentiated rates according to borrower risk.

Closely related to this study, Panetta et al. (2009) estimate the impact of bank mergers on the relation between borrowers' risk and interest rate in the Italian bank loan market. They find that mergers lead to a stronger link, in the sense that interest rates become lower for less risky and higher for more risky borrowers (i.e., an "increasing slope"), indicating that mergers can improve banks' ability to screen borrowers. This study differs from theirs in the focus on local competition between branches.

The role of location and local competition in banking has been documented by Degryse and Ongena (2005) and Bonfim et al. (2016). Using the same data as this paper, Herpfer et al. (2017) show that reductions in travel time between a firm and a bank branch due to changes in road infrastructure leads to increased probability of a (new) lending relationship, while rates for existing relationships increases (in line with a hypothesis of market power together with increased surplus from lower transportation costs), thus documenting the importance of local bank branches also in the Norwegian market for bank loans.

2 Market

Loans to small and medium businesses in Norway are offered by several commercial and savings banks, and, to a lesser extent, other credit and financing companies. Banks are the only institutional lenders who can also receive deposits in Norway.

The household sector is the largest recipient of loans from banks with approximately 50% of total bank loans, while non-financial firms is responsible for about 35%. The rest is mainly compromised of loans to financial firms, with very small shares of loans to non-profits and public entities. Figure 1 displays the total size of bank loans to the three largest sectors in terms of bank loan receipts from 2005 to 2015. The share of lending going to non-financial firms has generally increased over the period, from about 25% to 40%. Households and for-profit firms (both financial and non-financial) are responsible for a stable share of 99% of bank loans over this period.

Figure 2 displays (total) bank loans for the household sector, non-financial firms and financial firms as a fraction of (total) loans from institutional lenders

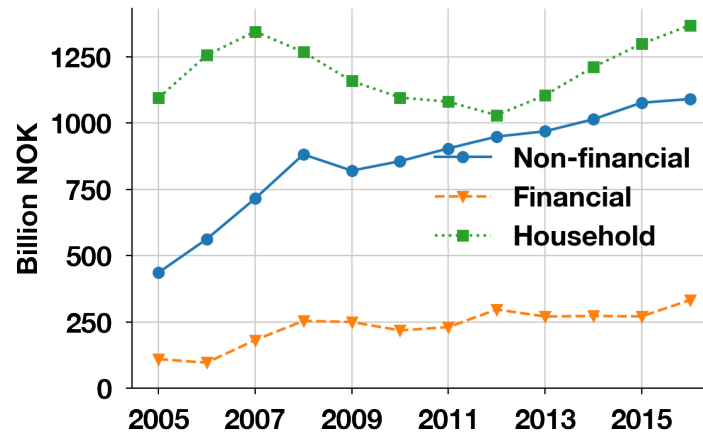


Figure 1: Total bank loans in billion NOK by sector and year (*Source: Statistics Norway*)

(banks, credit companies and governmental lenders). We see that the bank share is stable at about 85% for non-financial firms, while it has generally declined for households. The remaining loans are mainly given by (non-bank) credit companies.

From this we can conclude that (non-financial) firms constitute an important share of banks' loan operations, and that banks are the most important source of institutional lending for these firms.

In Figure 3, we see that the share of closure among all firms in the Norwegian economy mostly fluctuates between 12 and 15%, while the number of registered firms has been steadily increasing over time. The average rate of closure among firms with a bank loan is 4% yearly, showing an expected positive selection involved in obtaining a bank loan. Firm closure is thus a prevalent and important phenomenon among firms in Norway. Note that most firm closures are *not* due to bankruptcy, which on average affects 0.8% of firms yearly.¹ When a firm is discontinued but not bankrupt, it is still possible that

¹Statistics Norway; Table 07218: Bankruptcies, forced sales and registered execution proceedings 1995M01–2018M04, Table 06102: Enterprises (January 1) except public administration, agriculture, forestry and fishing, by activity (SIC2002), legal form and size groups (M) (closed series) 2001–2008 and Table 07196: Enterprises (January 1), except public administration, agriculture, forestry and fishing, by industry (SIC2007), legal form and number of employees (M) 2008–2017.

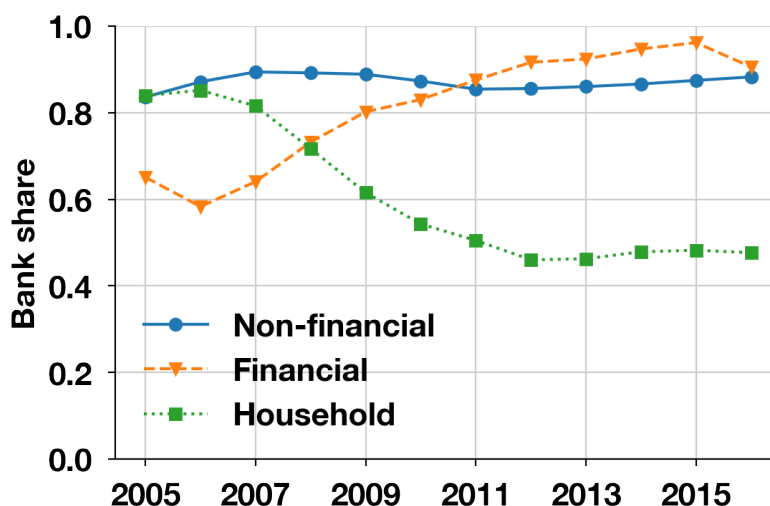


Figure 2: Fraction of sector lending coming from banks (*Source: Statistics Norway*)

the firm actually is insolvent, while creditors voluntarily accept losses on loans to avoid legal costs incurred in bankruptcy proceedings. I later show that the data is consistent with firm closure being related to bank costs.

The banking sector in Norway has undergone several consolidation events in the period analyzed in this paper, mostly driven by mergers and acquisitions. The most important of these are documented in Appendix A.

3 Data

The registry of Norwegian bank branches (*Bankpllassregisteret*) is maintained by *Finans Norge*, and is based on reports from the respective banks. The registry is reported in January every year, thus giving the branch structure at the beginning of the year. The registry contains address and detailed information on location for each branch, allowing me to measure the distance between competing bank branches, as well as branches available within a certain distance of each firm.

Tax records provided by *The Norwegian Tax Administration (Skatteetaten)* con-

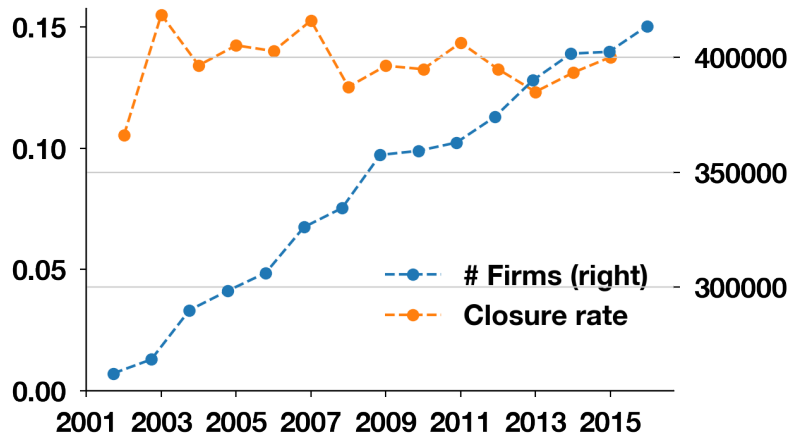


Figure 3: Rate of firm closure and number of firms (Source: Statistics Norway)

tains detailed accounts of the size of loans per December 31 every year and interest paid during the year for all organizations who pay taxes in Norway. The definition of interest in Norwegian taxation law includes all payments related to the credit service, which covers fees directly tied to the loan. The measure should thus be seen as *effective* interest payments, though I will use the terms *interest payment* and *interest rate* for simplicity. These data do not contain information on the contracts themselves, meaning no other contract terms than the year-to-year interest expenses and outstanding debt are observed. The tax records contain value and interest payments for all types of credit, such as that extended by suppliers. For the subsequent analysis, only loans extended by banks to private firms are used.

In addition, I use a database of Norwegian corporate accounts (Berner et al., 2013), containing detailed accounting data on Norwegian establishments and their location. These data allow me to link additional information on each business loan customer in the tax records, such as whether the firm ceases operations, thus inferring whether a loan is terminated with a closure event or not.

In this paper, I use the years 1999–2011, due to completeness of the geographic information on banks and their customers. In the analysis, municipalities are used as the most basic unit of geographic location, meaning that anything located within the same municipality will be treated as having a distance of zero.

Distances are otherwise measured as the traveling time in minutes between the municipalities where, e.g., a bank has a branch and a firm is located. Municipalities in Norway can be fairly large, averaging at about 700 km² of land area. To some extent, this is due to large and virtually uninhabited areas in the interior and North of Norway, and the median municipality has a size of approximately 450 km². However, most municipalities have one clearly defined center, such that the measure of geographic location is reasonable.

The sample used for analysis thus consists of all bank-issued loans to firms in Norway from 1999–2011. The loans that are the units of observation can be considered a combination between a firm and a bank in a given year. The center of the relevant market for the loan is taken to be the municipality in which the firm is located, with the number of unique banks with at least one branch within 30 minutes driving distance from the municipality center as the measure of competition.

3.1 Descriptive

The number of bank branches have generally declined over the period I study (see Figure 4). A major reason for this development is the decreased demand for physical visits to banks as online banking has become the prevalent mode of customer interaction with their bank. This is corroborated by surveys showing that the share of the population visiting a bank branch every month or more frequently has steadily declined from 50% in 2002 to 10% in 2016, while the share who report to never visiting bank branches has increased from 5% to almost 25%.²

The reduction in the number of branches has been accompanied by changes in the local competitive environment, as measured by the number of banks being present with at least one local branch. In Figure 5, panel a) shows that i) the number of municipalities with two banks present has decreased, ii) the number with one bank has stayed at roughly the same level, while iii) the number of municipalities with no bank branches has increased. An underlying

²Based on a yearly survey of bank usage conducted by Kantar TNS on behalf of Finance Norway (*Finans Norge*), the industry organization for the Financial industry in Norway. Reports with results from the surveys (*Dagligbankundersøkelsen*) are available online: <https://www.finansnorge.no/aktuelt/sporreundersokelser/dagligbankundersokelsen1/> (in Norwegian).

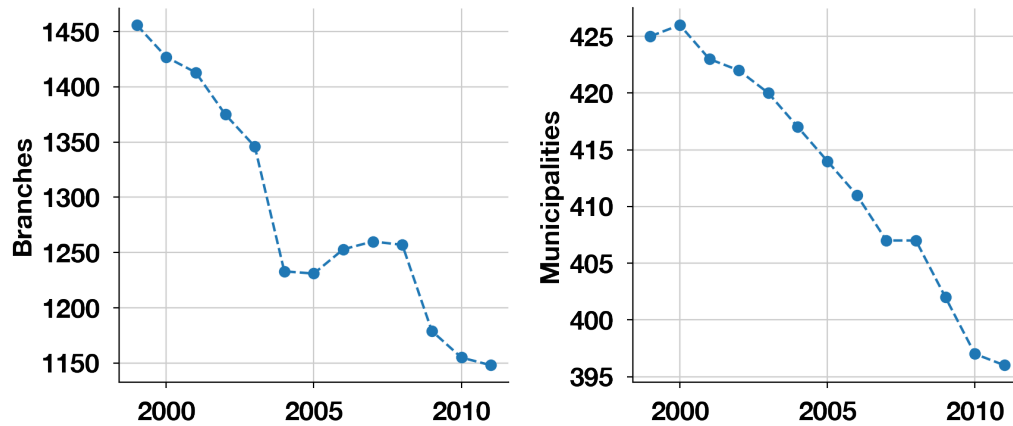


Figure 4: Development in number of bank branches in total and the number of municipalities with at least one bank branch (*Source: Bankpllassregisteret*)

trend in this pattern is that some municipalities move from two to one banks, while others move from one to zero. Interestingly, the number of municipalities with three and four or more banks do not show any clear development over time, driven by occasional expansions or establishment of banks in more centrally located municipalities. Panel b) displays the development in market structure at a 30 minutes driving distance radius around each municipality. Here the pattern is less clear, though we see that there is a tendency for less banks being present within a reasonable distance from each municipality over time. For the subsequent analysis, I will measure competition by the number of competing banks with (at least) a branch within a radius of 30 minutes driving distance from the municipality.

Table 1 shows the frequencies (in terms of municipalities) of transitions in the number of competing banks from 1999 to 2011, where the number of competing banks is measured by having a branch within 30 minutes driving distance from the municipality. The diagonal gives the number of municipalities where no change occurred from 1999 to 2011, while the entries below the diagonal correspond to municipalities where the number of competing banks decreased, and the entries above the diagonal to municipalities where the number of competing banks increased. There were 78 municipalities where the number of competing banks decreased, while it increased in 54.

Figure 6 displays the development in the distribution of interest rates on the

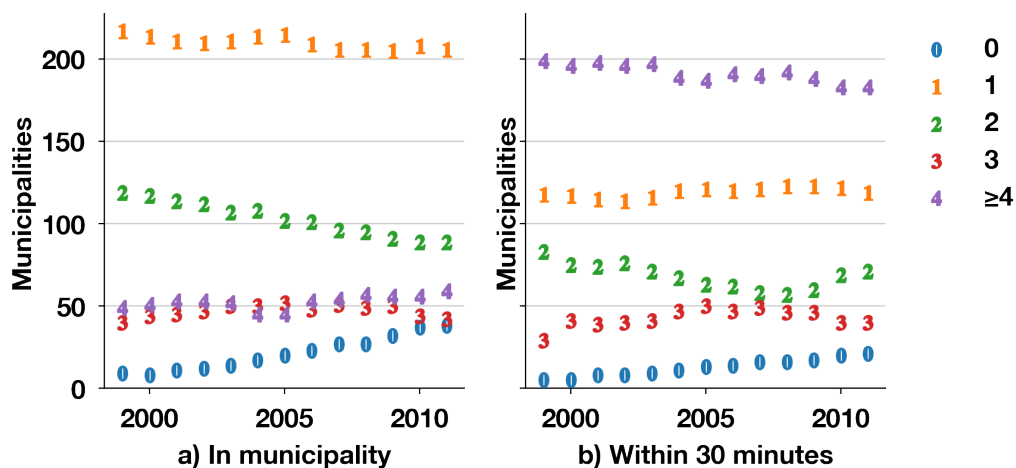


Figure 5: Development in municipalities by number of banks with at least one branch within given distance (*Source: Bankplassregisteret*)

Table 1: Development in municipalities with a given number of competing banks from 1999 to 2011

		2011							Total
		0	1	2	3	4	5	≥6	
1999	0	5	0	0	0	0	0	0	5
	1	13	99	6	0	0	0	0	118
	2	3	19	48	10	3	0	0	83
	3	0	1	10	13	4	1	0	29
	4	0	0	4	15	14	12	5	50
	5	0	0	2	2	4	7	13	28
	≥6	0	0	1	0	0	4	116	121
	Total	21	119	71	40	25	24	134	434

loans in the data set over the sample period. The average is indicated, together with the Norwegian Interbank Offered Rate (NIBOR) at 3 months maturity and the Central Bank deposit rate for reference. The NIBOR 3m and sight deposit rate has the same general development, though with a larger spread in the later years of the sample. We see that the average lending rate in the data to a large extent tracks the reference rates, though at a higher level, reflecting costs, risk and markup for loans to firms.

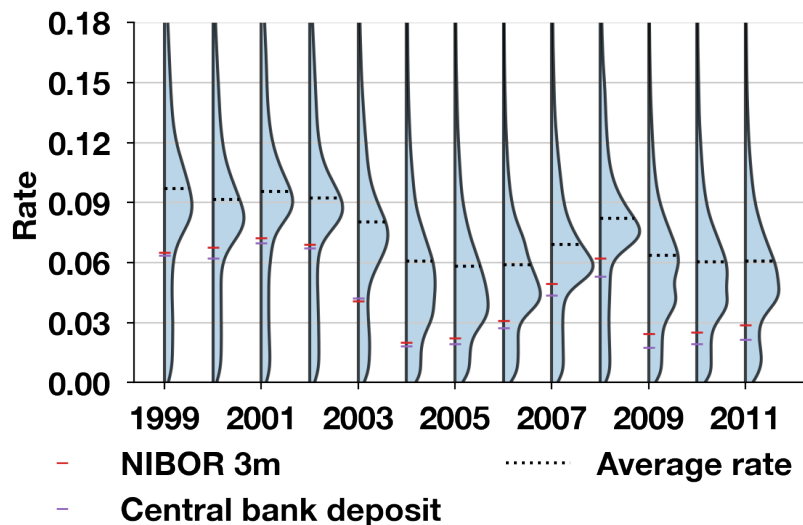


Figure 6: Development in interest rates and distribution, compared to NIBOR 3 months for reference (*Source: Tax records and Norges Bank*)

Figure 7 displays the relationship between interest rates and the number of active banks in a market. The pattern is consistent with a greater number of banks in a local market leading to higher competition and lower average interest rates. The interest rates used to construct this figure are based on residuals from a regression on indicators for year with the sample average of interest rates added back. This avoids the problem of changes in the local competitive environment over time picking up the year-to-year fluctuations in the aggregate money-market (e.g., monetary policy). The irregularities in the downward trend can possibly be attributed to differences in the type of markets which features more or less banks, e.g., centrality, population and (type of) economic activity. I will allow for unobserved differences between

markets in the empirical analysis below by including a full set of municipality-fixed effects in the main specifications.

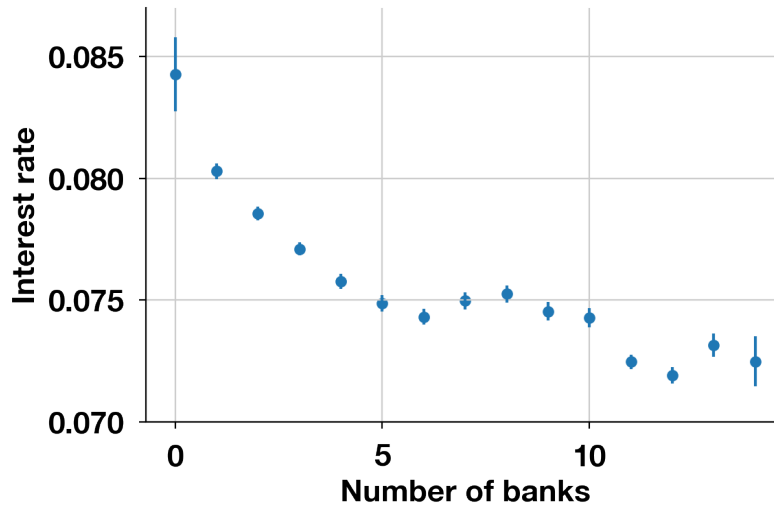


Figure 7: Average loan rate by number of banks in the market. Loan rates normalized by year

Figure 8 shows the relationship between the share of loans ended by firm closure and the number of banks in a market. Overall, there is no discernible pattern.³ This would be consistent with competition not affecting how banks screen businesses on the margin of obtaining a loan, though we would have to believe that there are no other unobserved differences between markets with more or less competition.

Figure 9 displays the share of loans ending in a closure for different levels of the (year-normalized) loan rate, where the loan rate is the average over the observations of the loan. The closure rate is also residualized by year, to remove the effect of aggregate fluctuations in the rate of closure over time. We see that the share of closure stays approximately constant at just above 10% over half of the distribution of (average) loan rates, before increasing substantially at higher loan rates. This shows that risk of closure is highly related to loan rates, and is consistent with closure being a costly event that the lending bank accounts for when determining rates.

³The noticeable break at 10 competing banks is, again, likely caused by unobserved differences between markets.

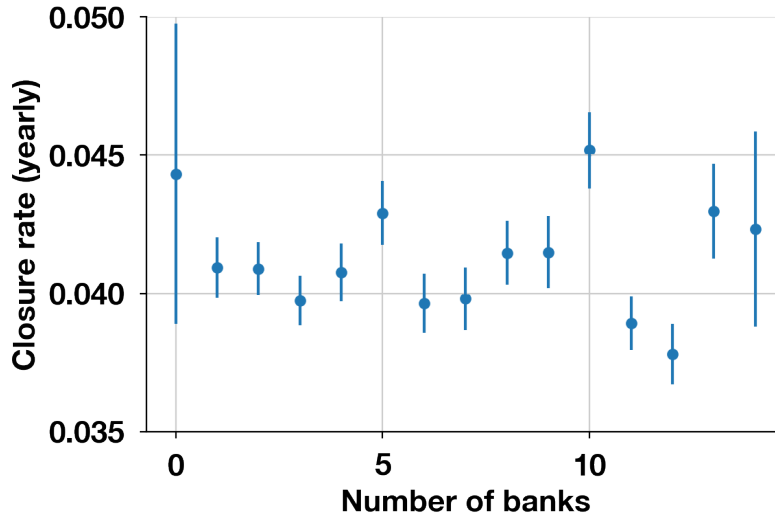


Figure 8: Rate of closure by number of banks in the market

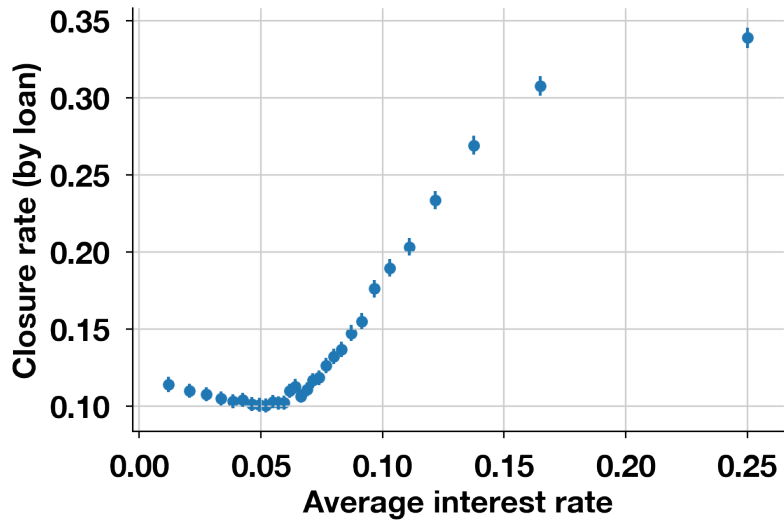


Figure 9: Relationship between rate of closure loan rate. Loan rates normalized by year. Average rate of closure within 30 equal-sized bins of loan rate displayed

Figure 10 shows the yearly average loan rate for firms that close while holding a loan in the 2 years leading up to the closure event for markets with one, three and five competing banks separately. The sample is restricted to only show loans which are observed at least two years prior closure, such that the averages displayed are for the same set of loans. We see that the rate for this group of loans is higher in markets with more competition. Note that yearly averages for the whole sample has been subtracted before adding back the across-year sample average (approximately 7.5%). The loan rate does not display any pattern of development over time, which is consistent with all relevant information on the risk of the loan already being factored in two years prior to the closure event.

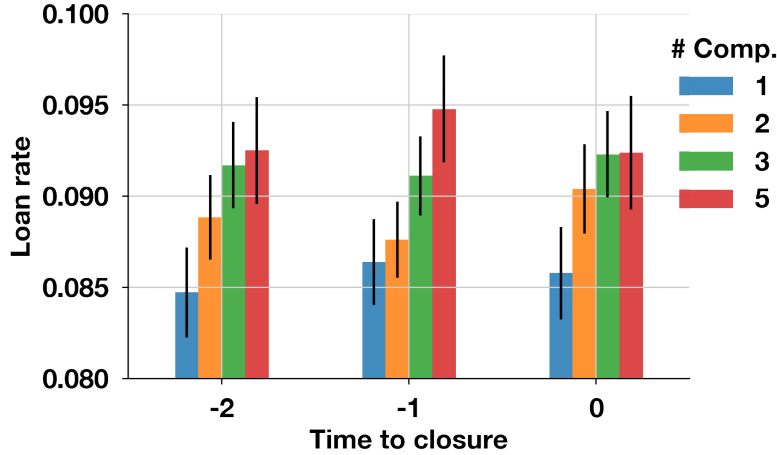


Figure 10: Average loan rate for closing firms by number of banks in the market and year relative to closure. From two years before up to and including the year of closure. Loan rates normalized by year

4 Estimation

Using local markets with different number of competitors, I estimate the regression specification

$$r_{imt} = \tau D_i + \sum_{n \in \mathcal{N}} \mathbb{1}[n_{mt} = n] (\gamma_n + \delta_n \times D_i) + \lambda_t + \mu_m + \mathbf{x}'_{imt} \boldsymbol{\beta} + \varepsilon_{imt}, \quad (1)$$

where r_{imt} is the rate of loan i in municipality m in year t , D_i is an indicator for loan i ending with a closure event, n_{mt} is the number of competing banks within 30 minutes of municipality m in year t , λ_t and μ_m are sets of year-fixed effects and municipality-fixed effects respectively, and \mathbf{x}_{imt} is a vector of controls (time-varying controls measured at the level of the firm). The baseline is markets with only one bank within 30 minutes, such that coefficients γ_n and δ_n capture the difference in average loan rates for loans unaffected and affected by closure respectively in markets with n competing banks compared to markets with just one bank. When including municipality-fixed effects, the coefficients involving the number of competing banks will be identified by the changes in the average loan rates in municipalities where the number of banks within 30 minutes driving distance changes. In the results below, I allow separate coefficients for markets with up to five bank, and pool markets with six or more active banks.

Column 1 of Table 2 shows the results of the regression in Equation (1) without fixed effects or controls included, column 2 shows the results with year- and municipality-fixed effects, and columns 3 adds controls for the number of employees in the firm (in logs), size of the loan (in logs) and an indicator for the firm being listed. The loan rate is measured in basis points, such that a percentage point is 100. We see that the rate for loans not affected by closure is lower with more competition, while the spread between rates for closed and non-closed loans is higher. The increase in spread is enough to make the rates for closed loans larger with higher competition. When adding fixed effects for year and municipality in column 2, the reduction in overall interest rates is estimated to occur when the market goes from one to two banks, while any effect of additional competition is relatively small and not statistically significant (tests not shown). The increase in spread is on the same level or larger compared to column 1, with no noticeable changes in estimated standard errors. As an example, the results in column 2 imply that going from a situation with just one bank to four competing banks, the interest rate for non-closing loans will go down by 0.2 percentage points, while the difference to closing loans will increase by 0.6 percentage points. Adding additional controls in column 3 does not meaningfully affect the estimates.

Table 2: Loan rate (basis points) in markets with different number of active banks according to whether loan is affected by firm closure or not

	(1)	(2)	(3)
<i>Banks (γ_n)</i>			
2	-4.0 (7.7)	-19.5 (7.8)	-19.9 (8.1)
3	-44.7 (8.6)	-18.3 (9.8)	-19.4 (10.2)
4	-32.9 (10.9)	-22.9 (10.5)	-23.8 (10.9)
5	-36.1 (14.6)	-23.5 (11.2)	-24.2 (11.6)
6+	-76.3 (9.3)	-22.3 (11.5)	-23.3 (11.9)
Closure (τ)	195.1 (6.8)	149.3 (6.2)	153.5 (6.4)
<i>Closure \times Banks (δ_n)</i>			
$\times 2$	22.2 (9.6)	26.7 (8.5)	24.6 (8.8)
$\times 3$	40.8 (10.1)	55.5 (9.0)	54.8 (9.2)
$\times 4$	43.7 (10.4)	58.8 (9.3)	57.0 (9.7)
$\times 5$	80.7 (11.6)	83.3 (10.3)	82.1 (10.6)
$\times 6+$	38.2 (8.5)	50.6 (7.0)	52.8 (7.1)
Constant	776.3 (4.6)	— —	— —
Year FE	No	Yes	Yes
Municipality FE	No	Yes	Yes
Controls		No	Yes
R^2	0.02	0.09	0.09
N	1,307,597	1,307,597	1,212,311

Standard errors clustered by municipality-year

5 Conclusion

The empirical analysis in this paper suggests that more competition leads to a closer link between loan rates and the risk of firms. A potential mechanism might be that the value of assessing the riskiness of potential borrowers is higher when competition is tougher, due to a potential increase of adverse selection in the residual demand faced by the bank. To see this, consider the example of a bank offering a uniform rate to all customers, while its competitor screens customers, potentially offering higher rates to more risky borrowers. The customers that prefer the uniform rate of the first bank due to being rejected or offered a higher rate at the competing bank will tend to be of higher risk than the average firm.

Since bank competition in business loans has a local nature (as documented in previous literature, e.g., Degryse and Ongena, 2005, Bonfim et al. (2016) and Herpfer et al. (2017)) it is relevant to investigate how local competition affects bank behavior, particularly with respect to managing the riskiness of borrowers. This paper provides evidence on the role of local competition in banks' targeting of interest rates to borrower risk.

References

- BECK, T., A. DEMIRGÜÇ-KUNT, AND R. LEVINE (2006): "Bank concentration, competition, and crises: First results," *Journal of Banking & Finance*, 30, 1581 – 1603.
- BECK, T., O. D. JONGHE, AND G. SCHEPENS (2013): "Bank competition and stability: Cross-country heterogeneity," *Journal of Financial Intermediation*, 22, 218 – 244.
- BERNER, E., A. MJØS, AND M. OLVING (2013): "Norwegian corporate accounts: documentation and quality assurance of SNF's and NHH's database of accounting and company information for Norwegian companies," Tech. rep., SNF.
- BONFIM, D., G. NOGUEIRA, AND S. ONGENA (2016): "Sorry, we're closed: loan conditions when bank branches close and firms transfer to another bank," Tech. rep., Available at SSRN 2749155.

- BOYD, J. H. AND G. D. NICOLÓ (2005): "The Theory of Bank Risk Taking and Competition Revisited," *The Journal of Finance*, 60, pp. 1329–1343.
- CAMINAL, R. AND C. MATUTES (2002): "Market power and banking failures," *International Journal of Industrial Organization*, 20, 1341–1361.
- CRAWFORD, G. S., N. PAVANINI, AND F. SCHIVARDI (2015): "Asymmetric information and imperfect competition in lending markets," Tech. Rep. 192, University of Zurich, Department of Economics, Working Paper.
- DEGRYSE, H. AND S. ONGENA (2005): "Distance, Lending Relationships, and Competition," *The Journal of Finance*, 60, 231–266.
- HERPFER, C., C. SCHMIDT, AND A. MJØS (2017): "The causal impact of distance on bank lending," Tech. rep., Available at SSRN 2587058.
- JAFFEE, D. M. AND T. RUSSEL (1976): "Imperfect Information, Uncertainty, and Credit Rationing," *The Quarterly Journal of Economics*, 90, 651–666.
- KEELEY, M. C. (1990): "Deposit Insurance, Risk, and Market Power in Banking," *The American Economic Review*, 80, pp. 1183–1200.
- MAHONEY, N. AND E. G. WEYL (2017): "Imperfect Competition in Selection Markets," *The Review of Economics and Statistics*, 99, 637–651.
- PANETTA, F., F. SCHIVARDI, AND M. SHUM (2009): "Do Mergers Improve Information? Evidence from the Loan Market," *Journal of Money, Credit and Banking*, 41, 673–709.
- SHARPE, S. A. (1990): "Asymmetric Information, Bank Lending and Implicit Contracts: A Stylized Model of Customer Relationships," *The Journal of Finance*, 45, 1069–1087.
- STIGLITZ, J. E. AND A. WEISS (1981): "Credit Rationing in Markets with Imperfect Information," *The American Economic Review*, 71, pp. 393–410.
- VON THADDEN, E.-L. (2004): "Asymmetric information, bank lending and implicit contracts: the winner's curse," *Finance Research Letters*, 1, 11–23.

A Market changes and consolidations

The number of banks and branch ownership in Norway has changed over time through a series of mergers and acquisitions, which are detailed below:

Sparebanken NOR was established in 1990 through the merger of several local savings banks. With over 100 local branches, it became the largest savings bank in Norway. It merged with the insurance provider *Gjensidige* in 1999, taking the name of *Gjensidige NOR*. The banking operations were merged with the commercial bank *DnB* in 2003, creating the group *DnB NOR*, which in 2011 changed the name to *DNB*.

In 2003, *DnB* also acquired the commercial bank *Nordlandsbanken*, which had a presence of about 20 branches in the northern part of Norway at the time of the acquisition, though a full merger was first implemented in 2012 together with a rebranding of the local branches.

The insurance provider *Gjensidige* again established commercial banking operations in 2007, this time as an online banking service under the name *Gjensidige Bank*.

Fokus Bank was one of the larger commercial banks in Norway, established in 1987 through a merger of several smaller banks. As a result of the Nordic Banking Crisis, it was acquired in 1991 by the Norwegian government, who again sold the shares to private owners in 1995. In 1999, it was acquired by Danish *Danske Bank*, with a rebranding of the branches in 2012.

The commercial bank *Christiania Bank og Kreditkasse* was, as a consequence of the banking crisis, also fully acquired by the government in 1991. The government gradually sold off its shares between 1995 and 2000. In 2000, the bank was merged with several nordic banks, the joint entity soon after taking the name *Nordea*. The branches were rebranded during 2002.

The Swedish commercial bank *Handelsbanken* acquired the commercial bank *Bergensbanken* in 1999, though the branches ran under the old name until 2001.

Postbanken was a bank originally owned by the Norwegian Postal Services. The ownership was transferred to the government in 1996, and it was merged with *DnB* in 1999, though they kept the brand name until 2011.

The commercial bank *Landsbanken* merged with the insurance provider

Samvirke in 1997 creating *Vår bank*, which was bought by *SpareBank 1 Gruppen* in 2000.

SpareBank 1 is an alliance between several Norwegian savings banks created in 1996. The cooperation is coordinated through the jointly owned company *SpareBank 1 Gruppen AS*. The alliance was originally between the regional savings banks *Sparebanken Nord-Norge*, *Sparebanken Vest*, *Sparebanken Rogaland*, and *Sparebanken Midt-Norge*.

This paper investigates the effect of competition on the relation between borrowers' risk and interest rates in the market for business loans. I estimate the relationship between the loan rates and risk of closure conditional on the local market structure using detailed data on loan payments between individual firms and banks from Norway. The findings show that increased competition is associated with lower rates for less risky and higher rates for more risky loans. Comparing markets with three competing banks compared to a single bank, rates for loans to firms that closed down during the loan period were approximately 50 basis points higher, while loans to firms that did not close down were approximately 20 basis points lower.

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