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Abstract

The study analyses the economic consequences of changes in the local bank presence. Using a unique dataset of banks, firms, and counties in Poland over the period 2009-2014, we show that changes in local banking that increase the role of the relationship banking model are associated with improvements in local labour markets and easier access of SMEs to bank debt. Moreover, radical changes in the ownership structure of large commercial banks result in a more rapid new firm creation. Finally, we document that young companies' performance is more sensitive to the instability of local banking markets.

Keywords: local economic activity, SMEs, entrepreneurship, local banks

JEL classification codes: G21; G32; R11

1 Introduction

The financial crisis of 2008 changed the global banking landscape. Banks hit by the crisis were nationalized or forced to merge or significantly restructure their activities. Both firms and citizens experienced the repercussions of those changes. The impact of the financial crisis on bank relationships and credit for small and medium-sized enterprises (SMEs) has been widely addressed in the literature. Researchers used both country-level data (for example, Berger, Cerqueiro, and Fabias Penas, 2015, for the USA; Kremp and Sevestre, 2013, for France; Tsurata, 2015, for Japan) and cross-country data (for example, Popov and Udell, 2012 for 14 Central and Eastern European countries). The regional and local effects of the crisis, including changes in the banking markets, attracted, so far, less attention. Our study tries to fill in this gap in the literature.

To examine the local repercussions of crisis-induced modifications in the banking sector, we use data from Poland from 2009 to 2014. We focus on three types of changes in the local bank presence. First, we study the dynamics of bank branch networks within local banking markets. Second, we investigate the changes in the number of banks. Finally, we analyse the modifications of bank ownership structures within local banking markets. We investigate local changes at the county level[1]. We assess the effects of instability in local banking markets from the perspective of local economic activity and firms' performance. Consequently, our dataset combines information on a county's economic situation, local firms' financial characteristics, and bank branch locations.

When studying the impact of changes in the local bank presence on economic activity and firms' performance, an endogeneity problem arises. On the one hand, the modifications in the number and structure of banks or branches within a county may influence local economic

[1] We provide more information on counties in Poland in Section 3.

indicators and companies' performance. On the other hand, banks' decisions to enter or exit local banking markets depend, to some extent, on the local economic situation and local firms' perspectives. Therefore, in this study, we use the GMM-SYS style estimation to address the endogeneity concerns directly.

In general terms, our empirical evidence indicates that different types of instability in the local bank presence have measurable economic repercussions. We find that bank branch expansion, regardless of the bank type, exerted a positive and direct influence on the local labour market. In line with the previous findings by Hasan, Jackowicz, Kowalewski, Kozłowski (2014), we show that changes that strengthen the position of local cooperative banks and presumably privilege the use of the relationship banking model had positive consequences not only on employment but also on SMEs' access to debt and investment. In contrast, the increase in the number of large commercial banks within local markets, that probably stimulates the application of the transactional banking model, was associated with slower long-term debt growth for SMEs. The increased competition associated to a larger number of banks present in local banking markets lowered the financial costs incurred by SMEs. Only the appearance of new, usually stronger, more aggressive owners of large commercial banks stimulated the firm creation process. Young companies demonstrated to be more sensitive to the instability of local banking markets than mature firms. For example, the negative influence of large commercial banks' entries on the long-term debt growth ratios was stronger for SMEs that were established in the previous five years. However, the same group of SMEs benefited the most from the increased number of cooperative banks within a county in terms of reduced financial costs.

Our study contributes to the existing literature in three aspects. First, we use a unique dataset that allows us to trace different types of changes in the local bank presence and to assess their influence on local economic activity in the post-crisis period. Second, our study adds to the relatively small number of studies that address SMEs' performance drivers in emerging

economies, in general, and in Central European (CE) countries in particular. Third, and most importantly, we document that changes in the local bank presence are an additional, independent, statistically significant, and economically relevant factor that shapes local economic activity and the performance of local firms.

The remainder of this paper is organized as follows. In Section 2, we review the relevant literature and formulate our research hypotheses. In Section 3, we present our empirical strategy, data, and econometric models. Section 4 discusses the empirical results. Section 5 reports the concluding remarks and policy implications.

2 Literature Review and Research Hypotheses

There are three main strands in the banking literature related to our research: branching deregulation, relationship lending, and the effects of bank consolidation on SME lending. We briefly review the existing literature and introduce four hypotheses regarding the consequences of the instability of local banking markets on local economic activity and SMEs' performance.

The first strand of the literature concentrates on the positive effects of deregulation of branching laws on the banking industry and the economy. Most studies focus on the USA, where, from the 1970s through the 1990s, some states have removed restrictions on intrastate branching. In this respect, the USA provided an ideal ground for testing the effects of the intensified bank competition. Jayaratne and Strahan (1997) report that the banking industry became significantly more efficient after the deregulation of the intrastate branching. They find that the state averages for operating expenses and loan losses fell, and that much of these improvements were passed on to borrowers in the form of lower interest rates. Rice and Strahan (2010) confirm that the cost of credit is lower in states that are open to interstate branching. Moreover, they show that small firms are more likely to borrow from banks where branching is less restricted. Strahan (2003) provides a comprehensive review of the available evidence in favour of the benefits of deregulation.

In addition, Jayaratne and Strahan (1996) show that GDP and income growth rates increased in the deregulated states. Beck, Levine, Levkov (2010) provided an evaluation of the impact of branch deregulation on the distribution of income in the US economy. They report that removing restrictions on intrastate bank branching reduced inequality by boosting incomes in the lower portion of the income distribution. They suggest three possible channels linking bank performance and income distribution. The first is related to studies showing that credit market imperfections prevent the poor from borrowing to invest more in education, which hinders their access to higher paying jobs (Galor and Zeira, 1993). The second explanation is based on the results of Benerjee and Newman (1993) and focuses on the ability of the poor to become entrepreneurs. The last reason relies on the response of companies to lower interest rates, which encourage firms to substitute capital for labour. Consequently, we assume that the development of local bank branch networks positively affects local economic activity, both directly, through job creation, and indirectly, through factors related to the intensified competition and the improvement of lending conditions. However, the opposite effect, particularly in the case of the local labour market, is also conceivable as the increased competition may also force banks to lay off workers and the improved access to bank loans may encourage firms to invest in less labour-intensive technologies. Therefore, we verify the following hypothesis:

H1: The development of local bank branch networks is beneficial to the overall economic activity, in particular to the local labour market.

The second strand of the literature concentrates on relationship banking. The existing theoretical and empirical research suggests that small local banks may have an advantage in providing loans to SMEs. The benefit may result from relationship lending, which is characterized by close monitoring, re-negotiability, and lengthy contractual agreements (Berlin and Mester, 1998). DeYoung (2002) argues that community banks have a comparative

advantage over larger banks in forming relationships with lenders, as they have permanent contact with local economic players. They may also base the loan granting process on information about the prospects of the local economy. Ergungor and Moulton (2011) document that the presence of a bank in local markets improves its credit quality assessment process. Petersen and Rajan (1994) and Elsas and Krahnen (1998) show that building a close relationship with lenders results in a larger availability of credit. Additionally, Berger and Udell (1995) find that small firms with longer bank relationships pay lower interest rates and are required to provide less collateral.

Berger and Udell (2002) show that large banks are less likely to extend credit to small businesses, especially to small firms with no credit history. Berger, Miller, Petersen, Rajan, Stein (2005) add that large banks are not keen on small business lending, which relies heavily on soft information. In contrast, large banks prefer to lend to large firms that have well-documented track records. Large banks may also be objectively disadvantaged in this respect, as their headquartered are often located at a substantial distance from potential small business borrowers. Strahan and Weston (1998) confirm that the presence of large banks has an adverse effect on small business growth. They also show that small business lending increases with banks growth for a while, but when a bank gets larger, lending to large firms increases dramatically. Finally, Agarwal and Hauswald (2010) underline that the geographical proximity between bank branches and clients facilitates the gathering of soft information, reducing problems related to asymmetric information.

Although several studies document that large banks have an informational disadvantage in making loans to small business, the recent research shows that such banks have been using hard information-based technologies to evaluate credit application of small firms. Berger and Black (2011) find that lending techniques based on hard information guarantee a comparative advantage to large banks in lending to both small and large firms, but not to the medium-sized

companies. Nevertheless, most part of the literature supports the view that small banks have a comparative advantage in lending to SMEs. As a consequence, we conjecture that changes in the local bank presence that boost relationship banking and privilege the use of soft information within local banking markets have a positive impact on local economic activity. Therefore, we introduce the following hypothesis:

H2: The relative strengthening of small local banks improves the local economic situation.

The third strand of the relevant literature concentrates on the impact of bank consolidation on the credit availability for small businesses. The effect of consolidation on bank lending terms is a widely researched topic. Gilbert (1984) and Berger, Demsetz, and Strahan (1999) present an excellent literature review. A bank merger and acquisition (M&A) process involves changes in ownership, strategy, and bank focus. Peek and Rosengren (1995) and Strahan and Weston (1998) find that M&As between small banks increase small business lending, whereas consolidation between large banks tends to influence small business lending negatively.

Berger, Saunders, Scalise, and Udell (1998) underline the complexity of the impact of M&As on bank lending. They find that their negative impact on small business lending may be offset by changes in the lending behaviour of competitors within the same market. In line with their findings, Bonaccorsi di Patti and Gobbi (2007) suggest that M&As only lead to a temporary reduction in the credit supply of SMEs. Moreover, Black and Strahan (2002) find that consolidation increases the rate of new business incorporation.

Summarising, consolidation in the banking industry raises concerns about the survivability of small banks, and, therefore, affects the credit availability for small firms. Consolidation among small banks seems to enhance small business lending, while the opposite appears to happen when large banks are involved. On the other hand, this reduction appears to

be offset, at least in part, by the decision of other banks within the same local markets to increase lending to small business by way of response. Moreover, after the 2008 crisis, the new bank owners were usually financially stronger and intended to pursue a more aggressive market strategy. Therefore, we assume in H3 that consolidation process may have a positive effect on local economic activity

H3: Significant changes in the ownership of banks that are present in local markets have a positive impact on local economic activity.

Young firms are more opaque, have a shorter credit history and less valuable collateral compared to mature companies. Consequently, their relationship with local banks may be crucial for their access to credit. Using data on the regional banking structure in China, Hasan, Kobeissi, Wang, and Zhou (2015) find a positive and significant relation between the credit supplied by rural banking institutions and small business development. Berger et al. (2015b) show that a strong presence of small banks yields to a much higher lending to start-ups in the US during normal times. In addition, they also find that a greater presence of small banks has a small positive impact on the failure rate of small opaque firms during normal times. Those effects were, however, reversed during the financial crisis of 2008, suggesting that small banks were not able to exploit their competitive advantage over large banks during a crisis period.

These results confirm that the links between young firms and banks are of particular importance. Moreover, those relationships are weak when their duration is short. For these reasons, we believe that the performance of young SMEs is more sensitive to different forms of instability within local banking markets compared to large companies. Therefore, we introduce the following hypothesis:

H4: The access to bank loans and investments of young SMEs is more sensitive to changes in the local bank presence compared to mature firms.

3 Empirical strategy, Data, and Models

In this section, we provide a general description of our empirical strategy. We also characterize the different data sources used in this study and we describe the construction of the dynamic panel models.

3.1 The Level of the Analysis

We examine changes in local banking markets and their impact on the local economic situation and SMEs' performance at the county level. In Poland, counties are intermediary units of administrative division between communes and voivodships. There are 380 counties in Poland, including 66 cities that perform county function. Their average surface is equal to 823 square kilometres, while the average population slightly exceeds 100,000 people. The counties represent a convenient choice for analysing the repercussions of instability within local banking systems for two reasons. First, several, important economic indicators are not available for communes, but only for counties or voivodships. Second, Presbitero, Udell, and Zazzaro (2014) show that the vast majority of loans are contracted locally. Therefore, the 17 voivodships in Poland are too large units of the administrative division to study the economic phenomena of interest.

3.2 Specificity of the Polish Banking System

The Polish banking system is characterized by two groups of banks that compete locally. These groups differ substantially in their business model, organizational form, and size of operations. The first group of banks—the so-called commercial banks—includes large, distantly managed banks with nationwide branch networks, organized as joint-stock companies, state enterprises, or branches of foreign credit institutions. The second group comprises cooperative banks only, which are small local organizations covering at best several counties. According to data published by the Polish Financial Supervision Authority, 626 cooperative

banks controlled almost 7% of the banking sector assets at the end of 2015, while 65 commercial banks were in charge of the remaining assets. However, cooperative banks offered their services through 4,200 branches, almost 30% of all bank branches in Poland. In the Polish banking sector, most commercial banks were foreign-owned. The bank assets controlled by foreign investors amounted to around 70% during the period of study. Popov and Udell (2012) find strong evidence for the international transmission of financial distress during the financial crisis of 2008, which resulted in a credit reduction for SMEs. In contrast, Allen, Jackowicz, Kowalewski, and Kozlowski (2015) show that, during the recent crisis, state-owned banks increased lending in Central European countries. Let us recall that small local banks also have a comparative advantage in producing soft information (Berger and Udell, 2002; Berger, Bouwman, and Kim, 2015; Liberti and Mian, 2009; Stein, 2002) and apply the relationship banking model (Berger and Udell, 1995; Berger et al., 2005; De Haas, Ferreira, Taci, 2010; Uchida. Udell, and Watanabe, 2008). Therefore, we conjecture that cooperative banks in Poland may play a disproportionately important role in shaping local economic activity in comparison to their modest share in banking sector assets, particularly after the crisis. For this reason, in our investigation, we differentiate between commercial banks and cooperative banks.

3.3 An Overview of the Research Strategy

As Figure 1 shows, the definition of a local banking market constitutes our starting point. We assume that county borders define local banking markets. We distinguish three sources of instability within local banking: the development of bank branch networks, bank entries to and exits from local banking markets, and significant modifications in the ownership structure of banks. We analyse the consequences of each type of instability for commercial and cooperative banks separately. We assess the influence of changes in the local bank presence on local economic activity and on the financial conditions of SMEs in a given county. With respect to local economic activity, we focus on unemployment growth and new firm creation, while

concerning SMEs' outcomes; we focus on long-term debt growth, financial costs, and investments. Finally, we confront our research hypotheses, H1 to H4, with the empirical evidence.

[Figure 1 here]

3.4 Data Sources

Our research project combines four data sources. The first dataset reports the address of all bank branches in Poland between 2008 and 2014, and we obtained it from an independent consulting company, *Inteliace Research*. This information allows us to track bank exits from and entries to counties, as well as the number of banks or branches operating in counties of Poland. Thus, this dataset is the basis for constructing all variables describing changes in the local bank presence between 2009 and 2014[2]. To reflect local banking market instability better, we hand-collected information on ownership changes among commercial banks between 2009 and 2014 (10 bank ownership changes involving 2.3 thousand branches in total) and among cooperative banks between 2010 and 2014 (13 bank ownership changes concerning 40 branches in total). Therefore, we were able to identify the number of banks and branches affected by ownership changes in individual counties. The county-level information is supplemented by a third dataset provided by the Polish Central Statistical Office describing the local economic condition, urbanization, human capital, and other traits of 380 counties[3]. The fourth and last dataset was obtained from the Amadeus database and includes firm-level information about Polish SMEs in individual counties between 2008 and 2014. We identified SMEs following the

[2] We drop the observations form 2008 as we are able to calculate increases only starting from 2009.

[3] It should be noted that in our county-level regressions the number of counties drops to 379 because one county was created only in 2013.

definition of Eurostat[4] and we excluded all companies that did not meet these criteria in at least one year within the analysed period. We also restricted our sample to companies from sections A-C and F-I of the NACE Rev. 2 industry classification. Therefore, we excluded the following sectors: financial institutions; utilities; industries dominated by the public sector; professional, scientific, technical, and administrative activities; and other industries that usually do not rely on bank loans as an important source of financing. We end up with a final sample of approximately 40 thousand companies[5].

3.5 Econometric Models

3.5.1 Local Economic Condition

To study the impact of banking market instability on the local economy, we estimate a set of panel estimation models using county-year observations. We regress local economic condition (COUNTY.DEP) against different measures of banking market instability (INSTB) and we could expect some feedback from COUNTY.DEP to INSTB, at least in case of some instability measures. In other words, we conjecture that banks could enter or exit from local markets if the local economic condition is good or poor, respectively. To address this potential endogeneity problem, we apply the GMM-SYS estimation procedure proposed by Blundell and Bond (1998). In contrast with other panel estimators (such as the fixed effects or random effects estimators), the GMM-SYS removes the strict exogeneity assumption for some regressors. This allows us to include in the regression analysis potentially endogenous variables, as well as the lagged dependent variable to control for the time persistence of local economic condition. We allow the lagged dependent variable to be only sequentially exogenous, while we assume that

[4] Thus, SMEs are defined as employing fewer than 250 persons and having an annual turnover of as much as EUR 50 million, or a balance sheet total of no more than EUR 43 million.

[5] Exact numbers are given in tables 4, 6, 8, and 9 below the regression results.

endogeneity affects the increases in the number of bank branches in counties and bank entries/exits (variables: BANKS.INCR, BANKS.COOP.INCR and BANKS.CB.INCR; ENTRIES, COOP.ENTRIES, and CB.ENTRIES; EXITS, COOP.EXITS and CB.EXITS). On the other hand, we do not expect any feedback from local economic condition to bank ownership changes (variables: ACQ.BANK, ACQ.BANK.COOP, and ACQ.BANK.CB; ACQ.BRANCH, ACQ.BRANCH.COOP, and ACQ.BRANCH.CB) and we treat these variables as strictly exogenous. We justify our choice by the fact that, in our sample, ownership changes mostly affect commercial banks with nationwide presence; thus, the decisions regarding ownership changes should not be influenced by the economic situation of individual counties. The estimated county-level models are built according to the general principles expressed by equation:

$$\text{COUNTY.DEP}_{kt} = f\left(\text{COUNTY.DEP}_{kt-1}; \text{LOCAL.CTRL}_{kt}; \text{INSTB}_{kt-1}; \text{year dummies}\right) \quad (1)$$

where COUNTY.DEP_{kt} denotes a dependent variable reflecting new firm creation (NEW.COMP) or unemployment rate growth (UNEMPL.INCR) in county *k* and year *t*; LOCAL.CTRL_{kt} is a set of control variables describing banking market specificities (HHI and MAX.10.BANKS), human capital (GRADUATES), urbanization (POP.DENS), and the condition of local firms (MEAN.ROS and MEAN.SALES.GR) in county *k* and year *t*; INSTB_{kt-1} is a set of banking market instability measures for county *k* and year *t-1* designed to test our research hypotheses. Model (1) also includes dummies to control for specific conditions in each year.

Simulations performed by Arellano and Bond (1991) and Blundell and Bond (1998) suggest that the asymptotic standard errors for the two-step estimator can be a poor guide to hypothesis testing, especially in the presence of heteroscedastic errors. Therefore, we base our statistical inference on the one-step estimator. We formally evaluate the appropriateness of the

set of instruments with the Hansen test, and we also check whether undesired instrument proliferation weakens the Hansen test, potentially generating the implausibly high p-value of 1 (Roodman, 2006).

Panels A and B in Table 1 specify the construction of all county-level dependent variables and control variables, as well as the regressors describing the local banking market instability. Panels A and B in Table 2 report the descriptive statistics for our final sample of county-year observations.

[Table 1 here]

[Table 2 here]

3.5.2 Local Firms' Outcomes

To examine the impact of local banking market instability on already established SMEs, we apply the GMM-SYS procedure to dynamic panel models using a dataset composed of firm-year observations. Equation (2) illustrates the general construction of the models:

$$\text{SME.DEP}_{ikt} = f\begin{pmatrix} \text{SME.DEP}_{ikt-1}; \text{SME.CTRL}_{it-1}; \text{LOCAL.CTRL}_{kt}; \text{INSTB}_{kt-1}; \\ \text{year dummies}; \quad \text{industry dummies} \end{pmatrix} \tag{2}$$

where SME.DEP_{ikt} denotes long-term debt growth (DEBT.GR) and financial costs (FIN.COST) or investments (INVEST) of firm *i*, in county *k* in year *t*; SME.CTRL_{ikt-1} is a set of control variables describing SMEs' size (LNA), asset turnover (TAT), asset structure (CASH, COLLAT, FIXA), profitability (ROS, EBIT.S), and shareholders' capital and leverage (EQUITY, LT.LIAB)[6]. LOCAL.CTRL_{kt} and INSTB_{kt-1} are defined in the same way as in Equation (1). The model also includes dummies to control for specific conditions in different

[6] Different firm-level controls are used in models explaining different dependent variables. See table 4 for details.

years and industries.[7] To test our research hypothesis regarding the impact of the local banking market instability on young companies (not more than 5 years old), we introduce binary variables identifying young companies ($YOUNG_{itk}$) and their interaction terms with different market instability measures ($YOUNG_{itk}$ x $INSTB_{itk-1}$). Panel C in Table 1 presents the detailed definitions of all firm-level variables, while Panel C in Table 2 reports the corresponding descriptive statistics.

4 Results

We organize the presentation of our research outcomes according to the type of modifications in the local bank presence, as described in the previous sections. Therefore, in sub-section 4.1, we concentrate on changes in the number of bank branches, in sub-section 4.2 we focus on banks' entries to and exits from local banking markets and, finally, in sub-section 4.3, on the changes in the ownership structure of banks. Sub-section 4.4 constitutes the only exception to this rule, as in this sub-section we check the robustness of our findings in the case of relatively young local firms.

4.1 Developments in Local Branch Networks

Table 3 shows that changes in branch networks within counties affect the unemployment dynamics (specifications 1 and 2), but do not influence the creation of new companies (specifications 3 and 4). Regardless of the bank type, increases in the local presence are associated with positive tendencies on the labour market: the coefficients for the variables

[7] While constructing industry dummies, we took into account the number of observations for each industry, and we grouped the industries into 17 groups. Each section of the NACE Rev 2 classification constitutes a separate industry bucket except for manufacturing, within which we identified 10 industry groups, and the wholesale and retail trade and repair of motor vehicles and motorcycles, within which we identified two separate industry groups.

BRANCH. COOP.INCR and BRANCH.CB.INC in specification (2) are both negative and statistically significant at the 10% and 5% level, respectively. The identified relationships are also relevant in economic terms. Specification (2) implies that increases of one standard deviation in the number of cooperative and commercial bank branches lead to the reduction in the unemployment growth ratio by 11.3% and 38% of this growth ratio standard deviation, respectively. Therefore, our results support H1 with respect to the local labour market.

County-level control variables influence the dependent variables predominantly in the expected directions, as shown in Table 3. The counties with a better-educated population (GRADUATES) are characterized by more favourable tendencies on the labour market (specification 1) and a more rapid pace of new firm creation (specification 3 and 4). Higher population density (POP.DENS) is positively related to start-up activity, while wide profit margins of local companies (MEAN.ROS) seem to be, at least partially, achieved through layoffs. The elevated local banking market concentration (HHI) inhibits new firm creation (specification 4) and, rather surprisingly, influences positively the county labour markets.

[Table 3 here]

In Table 4, we report how changes in local bank branch networks affect the performance of SMEs. In contrast with H1, the studied factor is almost irrelevant to SMEs' outcomes. We obtain only weak evidence that an increase in the presence of cooperative banks within counties is favourable for SMEs' access to debt and investment. Namely, the coefficients for the variable BRANCH.COOP.INCR are positive and significant in specifications (2) and (6), but only at the 10% level. Moreover, the impact of cooperative bank branch network development is only moderately significant in economic terms. Specifications (2) and (6) indicate that the rise in the number of cooperative bank branches by one standard deviation in the same county where an SME is established results in the long term debt and tangible fixed assets growth ratios higher by 0.1 and 0.4 of a percentage point, respectively.

Firm-level control variables mostly impact the dependent variables in the predictable directions, as reported in Table 4. The large size of operations (LNA), significant cash holdings (CASH), and more rapid asset turnover (TAT) seem related to a quicker pace of long-term debt growth, lower financial costs, and higher investments. Firms that already possess a significant long-term debt (LT.LIAB) record its slower growth rates and invest less. A solid equity capital base (EQUITY) improves the terms of debt contracting, while sizeable fixed assets (FIX.A) restrain investments. Good sales profitability (ROS or EBIT.S) facilitate long-term debt growth and investments. However, unexpectedly, high returns on sales ratios are positively associated with higher SMEs' financial costs.

[Table 4 here]

In sum, we believe that the positive relationship between local bank branch development and county labour markets reflects the direct impact of this type of change in local bank presence on local economic situation through the influence of new jobs creation. There are three reasons behind our conclusion. First and most importantly, Table 4 provides only weak evidence that the modifications in local bank branch networks affect SMEs' performance. Second, as Table 3 documents, a larger number of branches do not translate into higher start-up activity. Third, as shown in Table 3, we obtain negative and statistically significant coefficients in the regressions explaining the unemployment dynamic for both cooperative banks (BRANCH.COOP.INCR) and commercial banks with nationwide branch networks (BRANCH.OHTER.INCR). Therefore, the impact of branch network development does not depend on the banking model and the kind of information processed. Due to the size of their operation, cooperative banks rely more on soft information and relationship banking, while all branching commercial banks are large, distantly managed organizations mainly employing a transaction approach in lending and hard information. Under the hypothesis that changes in local bank branch networks affect unemployment indirectly, through the conditions of local

firms, we should witness a positive and higher impact of cooperative banks expansion on the local labour market compared to commercial banks. However, this does not seem to be the case in our study.

4.2 Banks Entries to and Exits from Local Markets

In this sub-section, we investigate the consequences of banks' entries to and exits from local markets. Table 5 reports the results of the county-level analysis and Table 6 presents the outcomes of the firm-level analysis. In line with the findings reported in Table 3, we establish that changes in the number of banks influence unemployment growth, but do not affect new firm creation. Specifications (2) and (10) in Table 5 suggest that the situation of the local labour market is more favourable when the number of cooperative banks increases, while it worsens when cooperative banks withdraw from a given county. However, as specification (6) indicates, entries of commercial banks with nationwide branch networks also limit the unemployment growth ratios. The effects of banks entries and exits are relevant in economic terms. For example, specification (2) shows that the increase by one in the number of cooperative banks within a county causes a reduction in the unemployment growth ratio by 24.8% of its standard deviation. The entry of a commercial bank in a county, according to specification (6), induces a similar modification in the values of the UNEMP.INCR variable. The consequences of a cooperative bank exit are even more significant: specification (10) documents that this change is linked to a surge in the unemployment growth ratio of 104.5% of its standard deviation.

[Table 5 here]

At the firm level, our investigation reveals the most stable and significant empirical patterns in the analysis of financial costs incurred by SMEs. We find that increases in the number of banks, and entries of banks into local banking markets in particular, lower the costs of contracting bank debt, in line with Rice and Strahan (2010). The coefficient for the variable BANKS.INCR in specification (3) and the variable ENTRIES in specification (9) are both

negative and statistically significant at the 1% level. Moreover, specifications (4) and (10) document that the influence of an increase in the number of banks on the FIN.COST variable is stronger for commercial banks with nationwide presence than for cooperative banks. Specification (4) implies that the presence of one more cooperative bank and one more commercial bank in a county is associated with the reduction in the financial costs of an SME by 1% and 2% of the FIN.COST variable median in the sample, respectively. We conjecture that entries of large banks exert pressure on all banks present in a county to diminish their lending spreads. Concerning long-term debt growth ratios, specification (8) suggests that entries of cooperative banks are beneficial to SMEs. At the same time, specifications (2) and (8) show that a stronger position for large commercial banks worsens SMEs' access to bank lending. Our evidence remains in line with the literature, documenting that small banks possess a comparative advantage over large banks in lending to SMEs (Berger and Udell, 2002; Berger et al., 2005; Berger et al., 2015a; DeYoung, 2002) However, the modifications in the value of the DEBT. GR variable are modest. The entry of a cooperative bank engenders an increase in the long-term debt growth ratio equal to 0.2% of the DEBT.GR variable standard deviation, while the entry of a commercial bank induces a change in the opposite direction equal to 0.3% of the standard deviation. Investment activities remain largely unaffected by banks' entries to and exits from local markets. Only specification (18) provides weak evidence that the exit of cooperative banks may reduce SMEs' investment.

[Table 6 here]

The empirical evidence reported in Tables 5 and 6 support, at least to some extent, H2 and the existing evidence for the Polish market (Hasan et al., 2014). We show that changes that favour the application of the relationship banking model and the use of soft information in the lending process are beneficial to the local economy. The increase in the number of cooperative banks reduces unemployment growth and stimulates long-term growth for SMEs. In contrast,

exits of cooperative banks are linked to the worsening of the local labour market and lower investments of SMEs. In addition, a rise in the number of cooperative banks weakly lowers the financial costs reported by SMEs.

4.3 Changes in the Ownership Structure of Banks

Variations in the ownership structure of banks represent the third and final source of the instability in local banking markets that we analyse. Table 7 presents the results at the county level, while Table 8 reports the regressions' outcomes at the firm level. In contrast with sub-sections 4.1 and 4.2, the studied factor does not seem to affect unemployment growth ratios, but it influences the pace of new firm creation, as in study by Black and Strahan (2002). According to specifications (3) and (7) in Table 7, the relatively high number of banks acquired by new entities is positively and significantly correlated with the NEW.COMP variable, at the 1% level. Contrary to the results reported by Peek and Rosengren (1995) and Strahan and Weston (1998), specifications (4) and (8) suggest that this relationship is only driven by ownership changes in the group of commercial banks, characterized by nationwide branch networks. Specification (4) implies that, if a new owner acquires one of the commercial banks operating in a given country, this leads to an increase in the pace of new firm creation equivalent to 7.4% of the NEW.COMP variable standard deviation. Due to the post-crisis period specificity, we are inclined to explain the regularities identified in Table 7 by the fact that new owners of non-cooperative large banks are usually financially stronger and pursue more aggressive market strategies than their predecessors. As a consequence, commercial banks after fundamental changes in ownership structures became more willing to finance new firm creation. An alternative explanation relies on shifts in the lending behaviour of competitors within the same market, as suggested by Berger et al. (1998).

[Table 7 here]

The results on SMEs' performance reported in Table 8 are either statistically not significant or ambiguous. The growth of long-term debt and investments of SMEs are not influenced by changes in the ownership structure of cooperative and commercial banks. The findings regarding the determinants of financial costs reported by SMEs are method sensitive. When we consider the number of banks affected by ownership changes, the coefficients for the variables illustrating the instability within local markets (ACQ.BANK and ACQ.BANK.CB) are positive and significant. However, when we base our inferences on the number of bank branches affected by ownership changes, the coefficients for the ACQ.BRANCH and ACQ.BRANCH.CB variables become negative and significant. We offer two explanations for the puzzling results reported in Table 8. First, the changes in ownership structures not only imply the arrival of new stronger owners, but also cause modifications in lending policies, which, in turn, may lead to distortions in banks' relations with customers. Therefore, the positive and negative (from the perspective of SMEs) effects of ownership changes in banks already present in local markets may offset each other. Second, the indicators of the instability caused by changes in ownership structures based on the number of branches exhibit, as Panel B in Table 2 documents, much more variability than the indicators relying on the numbers of banks. This difference may be responsible for the contradicting results concerning the determinants of SMEs' financial costs. In sum, we obtain weak evidence in favour of H3 because such proof only relates to one aspect of the local economic situation: the pace of new firm creation.

[Table 8 here]

4.4 Changes in the Bank Local Presence and Firms' Age

Young firms usually have a smaller scale of operations and are more informationally opaque than mature companies. Therefore, young SMEs are more dependent on bank lending for financing investment projects and current activities. Moreover, banks are reluctant to lend

to young SMEs because they can only show short credit histories and are frequently unable to pledge valuable collateral. Even when a new firm manages to establish a relationship with a bank, which helps overcome the problems related to the asymmetric information, strengthening this relationship requires a considerable time. As a consequence, from a theoretical perspective, young SMEs' outcomes should be more sensitive to changes in the local bank presence compared to other firms.

In Table 9, we verify whether the positive and negative effects of instability within a county banking market are magnified in the case of young firms. To test H4, we introduce a binary variable, YOUNG, which identifies SMEs founded no more than 5 years ago, and we interact this variable with all previously used variables illustrating changes in the local bank presence. Our findings support H4 in the case of SMEs' long-term debt growth (Panel A in Table 9) and financial costs (Panel B in Table 9). In contrast, there is no evidence (Panel C in Table 9) that investments of young SMEs are more vulnerable to instability in local banking markets than mature firms.

As expected, young companies record faster growth of long-term debt, incur higher financial costs, and invest more. The coefficients for the variable YOUNG are all positive in Table 9 and mostly statistically significant at the 1% level. Specifications (1) and (3) confirm that the reinforcement of cooperative banks local presence improves SMEs' access to bank lending. In contrast, specification (3) suggests that entries of commercial banks are negatively correlated with long-term debt growth ratios of SMEs, in line with the findings reported in Table 6. Therefore, specifications (1) and (3) provide additional evidence supporting H2. The negative impact of an increase in the number of commercial banks within a county banking market is particularly pronounced—in line with H4—for young firms: the coefficients of the relevant interaction terms are negative and statistically significant in specifications (2) and (3).

Panel B in Table 9 allows us to refine the conclusions formulated in sub-section 4.2. Increases in the number of commercial banks or entries of such banks lower the financial costs for all SMEs (specifications 8 and 9), while increases in the number of cooperative banks or their entries only influence the dependent variable FIN.COST in the case of young firms. The results for ownership changes (specifications 11 and 12) remain ambiguous and method sensitive, as in sub-section 4.3. With regard to the investment activities of SMEs, Panel C in Table 9 provides only weak evidence (specification 16) that the exit of cooperative banks affects investments negatively and exits of commercial banks impact them positively. The age of the firms does not seem to modify the relationship between changes in the local bank presence and SMEs' investments, as all interaction terms in Panel C are statistically insignificant.

[Table 9 here]

5 Concluding Remarks

In our study, we examined whether the instability of local banking markets influences local economic activity. The empirical evidence on Poland showed that selected changes in the local bank presence constitute an independent factor that affects local economic activity after controlling for its persistence, macroeconomic tendencies, banking market characteristics, demographic situation, industry specifics, firm-level factors, and factors related to local human capital.

We find that the situation of the local labour market is, on the one hand, positively affected by an increase in the number of commercial and cooperative bank branches, a rise in the number of cooperative banks, and entries of commercial banks. On the other hand, it seems negatively influenced by the exists of cooperative banks. The impact of these factors on the local labour market is most probably direct and is exerted through job creation, not through the condition of local firms. In contrast, the pace of new firm creation is dependent only on the appearance of new owners for locally present commercial banks. Our evidence suggests that

the acquisition of commercial banks by usually stronger and more aggressive new owners after the 2008 crisis has facilitated the creation of new local firms.

With regard to SMEs' access to bank debt, we obtain evidence in line with the findings of DeYoung (2002) and Berger at al. (2015a). In particular, we establish that the strengthening of the cooperative banks' positions (the increases in the number of cooperative bank branches and entries of those banks into counties) are positively related to the long-term debt growth ratios reported by SMEs. Conversely, the rise in the number of commercial banks or entries of those banks inhibit long-term debt growth. Our research outcomes appear to support the view that local bank organizations, applying the relationship banking model and using soft information, have a comparative advantage over large nationwide banks in satisfying the financing needs of local companies.

The increased competition, due to rising numbers of local players, seems to lower the financial costs incurred by SMEs. However, the evidence on the relation between changes in bank ownership structures and financial costs reported by local firms is inconclusive and method-sensitive. The influence of changes in the local bank presence is the weakest in the case of SME investment. We obtained only weak evidence that the increase in the number of cooperative bank branches favour investment, while the exits of cooperative banks act in the opposite direction.

Our study suggests some policy implications. First, policy-makers and regulatory bodies should not only consider nationwide consequences, but they may also focus on local effects when making decisions that influence the structure of the banking system. Second, small local banks seem to play an important and positive role in shaping local economic activity and the performance of local firms. Therefore, the regulatory approach to this kind of banking organizations should support them and help them preserve their financial soundness.

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Figure 1. An overview of the research strategy

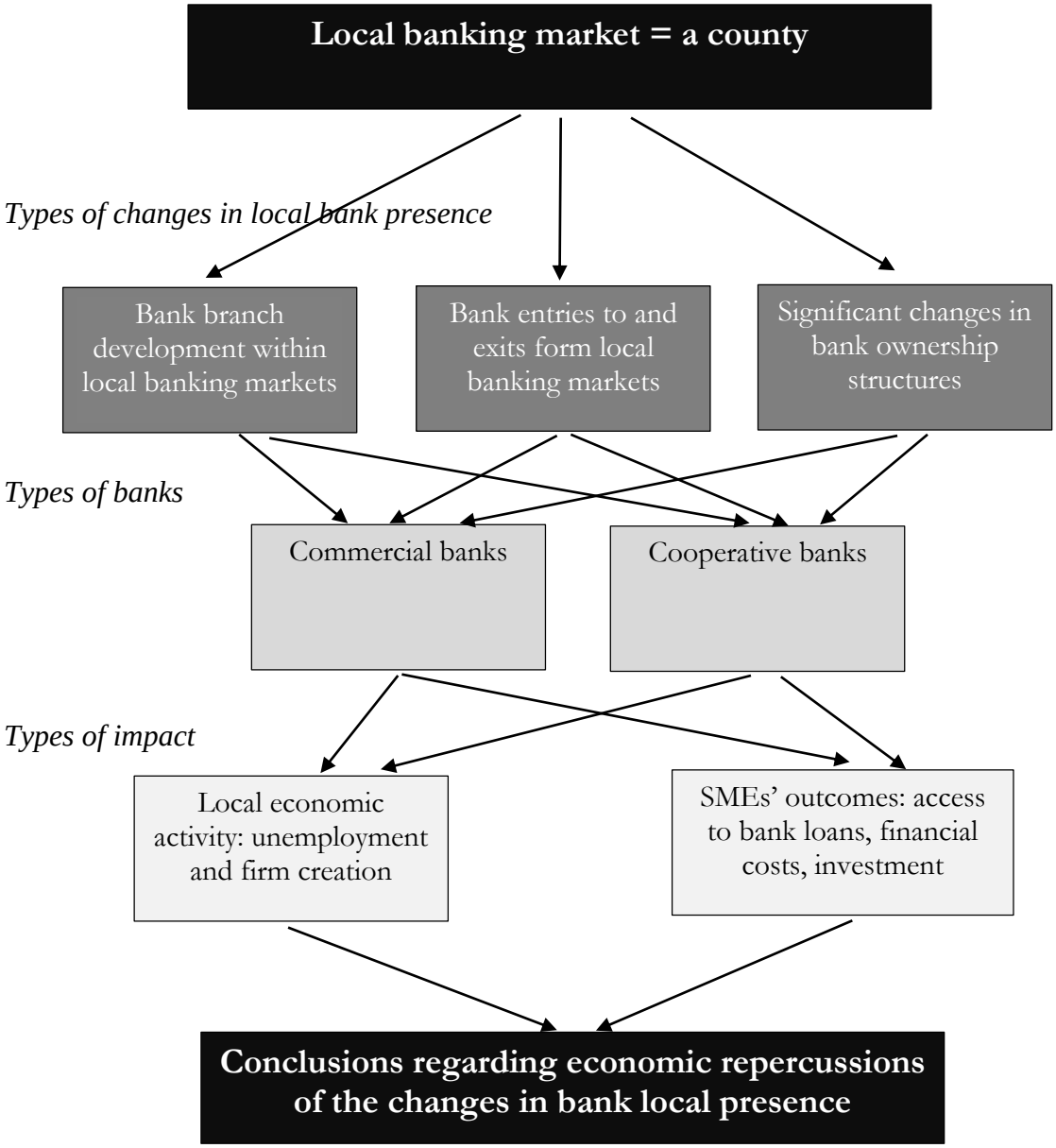

Table 1. Variable definitions

Panel A. County-level dependent and control variables	
UNEMPL	Unemployment rate
UNEMPL.INCR	Year-to-year growth in the unemployment rate
NEW.COMP	The number of new companies registered in a given year divided by a county's population (per 100 people)
HHI	Local banking market's concentration (Herfindahl-Hirschman Index, where the number of a bank's local branches denotes its significance)
MAX.10.BANKS	A binary variable that takes the value of 1 for counties with no more than 10 banks operating in their area, and 0 otherwise
GRADUATES	People graduating from universities in a given year divided by a county's population (per 100 people)
POP.DENS	Population density (in hundreds per 1 km^2)
MEAN.ROS	Mean return on sales of SMEs located in a county
MEAN.SALES.GR	Mean growth rate of sales of SMEs located in a county
Panel B. Variables describing instability of a banking market in a county	
BRANCH.INCR, BRANCH.COOP.INCR, BRANCH.CB.INCR	Year-to-year percentage increase in the number of all bank branches, cooperative bank branches, and commercial bank branches, respectively, which operated in a given county
BANKS.INCR, BANKS.COOP.INCR, BANKS.CB.INCR	Year-to-year increase in the number of banks, cooperative banks, and commercial banks, respectively, which operated in a given county*
ENTRIES, COOP.ENTRIES, CB.ENTRIES	The number of all banks, cooperative banks, and commercial banks, respectively, which opened their first branch in a given county and year*
EXITS, COOP.EXITS, CB.EXITS	The number of all banks, cooperative banks, and commercial banks, respectively, which closed all their branches in a given county and year*
ACQ.BANK, ACQ.BANK.COOP, ACQ.BANK.CB	The number of banks, cooperative banks, and commercial banks, respectively, which operated in a given county and were acquired by other entities in a given year
ACQ.BRANCH, ACQ.BRANCH.COOP, ACQ.BRANCH.CB	The number of branches of all banks, cooperative banks, and commercial banks, respectively, which operated in a given county and were acquired by other entities in a given year

Panel C. SMEs' characteristics	
DEBT.GR	Yearly increase in bank and long-term debt to total assets at the beginning of a year in constant prices
FIN.COST	Financial expenses to average assets per year
INVEST	Growth rate of tangible fixed assets at constant prices
LNA	Natural logarithm of total assets at constant prices

CASH	Ratio of cash and cash equivalent to total assets
TAT	Ratio of sales to total assets
COLLAT	Ratio of tangible fixed assets to total assets, i.e. the share of assets that can be easily used as loan collateral
ROS	Gross profit/loss to sales
LT.LIAB	Ratio of non-current liabilities to total assets
EQUITY	Ratio of shareholders' funds to total assets
EBIT.S	Operating profit/loss to sales
FIXA	Ratio of fixed assets to total assets
YOUNG	A binary variable that takes the value of 1 if a firm is not more than 5 years old, and 0 otherwise

*To eliminate the effect of bank mergers, banks merging in period *t* are already treated as a single institution in year *t-1*, while calculating the growth rate of bank numbers and the number of bank exits/entries in year *t*.

Table 2. Descriptive statistics

	Obs.	Counties	Mean	Median	St. dev.	5th perc.	25th perc.	75th perc.	95th perc.
Panel A. County-level dependent and control variables*									
UNEMPL	1,893	379	0.156	0.147	0.061	0.067	0.110	0.198	0.267
UNEMPL.INCR	1,893	379	-0.002	0.001	0.015	-0.031	-0.010	0.008	0.018
NEW.COMP	1,893	379	0.836	0.794	0.262	0.526	0.668	0.949	1.284
HHI	1,893	379	0.155	0.135	0.085	0.063	0.094	0.189	0.329
MAX.10.BANKS	1,893	379	0.331	0	0.471	0	0	1	1
GRADUATES	1,893	379	0.486	0	1.250	0	0	0.231	2.969
POP.DENS	1,893	379	3.792	0.900	6.754	0.360	0.610	1.860	20.310
MEAN.ROS	1,893	379	0.026	0.027	0.036	-0.027	0.007	0.044	0.078
MEAN.SALES.GR	1,893	379	0.037	0.035	0.070	-0.071	-0.008	0.078	0.154
Panel B. Variables describing instability of a banking market in a county*									
BRANCH.INCR	1,893	379	0.029	0	0.101	-0.111	-0.030	0.077	0.205
BRANCH.COOP.INCR	1,865	374	0.051	0	0.325	-0.125	0	0.071	0.333
BRANCH.CB.INCR	1,874	377	0.050	0	0.214	-0.167	-0.043	0.100	0.333
BANKS.INCR	1,893	379	0.582	0	1.121	-1	0	1	3
BANKS.COOP.INCR	1,893	379	0.060	0	0.417	0	0	0	1
BANKS.CB.INCR	1,893	379	0.522	0	1.057	-1	0	1	2
ENTRIES	1,893	379	0.958	1	0.995	0	0	2	3
COOP.ENTRIES	1,893	379	0.115	0	0.368	0	0	0	1
CB.ENTRIES	1,893	379	0.843	1	0.928	0	0	1	3
EXITS	1,893	379	0.365	0	0.586	0	0	1	1
COOP.EXITS	1,893	379	0.055	0	0.245	0	0	0	1
CB.EXITS	1,893	379	0.310	0	0.540	0	0	1	1
ACQ.BANK	1,514	379	0.664	1	0.703	0	0	1	2
ACQ.BANK.COOP	1,514	379	0.007	0	0.085	0	0	0	0
ACQ.BANK.CB	1,893	379	0.615	1	0.668	0	0	1	2
ACQ.BRANCH	1,514	379	1.336	1	3.844	0	0	1	5
ACQ.BRANCH.COOP	1,514	379	0.014	0	0.210	0	0	0	0

ACQ.BRANCH.CB	1,893	379	1.202	1	3.531	0	0	1	4.4
Panel C. SMEs' characteristics**									
DEBT.GR	154,399	41,733	0.5%	0.0%	11.1%	-11.6%	-1.8%	0.2%	16.8%
FIN.COST	132,655	37,933	2.2%	1.4%	2.8%	0.1%	0.5%	2.9%	6.9%
INVEST	148,389	40,231	9.0%	-5.8%	85.6%	-52.9%	-17.3%	6.4%	110.8%
LNA	154,399	41,733	10.467	10.484	1.467	8.034	9.505	11.479	12.836
CASH	152,007	41,190	13.4%	6.3%	17.1%	0.2%	1.7%	18.5%	51.2%
TAT	152,789	41,306	228.5%	188.1%	172.5%	25.5%	109.6%	301.4%	585.2%
COLLAT	152,000	41,112	29.3%	23.5%	25.3%	0.4%	6.5%	46.9%	78.2%
ROS	151,795	41,101	2.8%	2.5%	18.1%	-16.5%	0.2%	7.5%	24.1%
LT.LIAB	153,896	41,588	8.3%	0.8%	15.0%	0.0%	0.0%	10.2%	40.4%
EQUITY	144,016	39,175	52.0%	51.8%	26.1%	9.6%	31.0%	73.5%	93.5%
EBIT.S	152,002	41,166	3.6%	3.2%	17.7%	-14.6%	0.6%	8.1%	25.1%
FIXA	154,285	41,711	32.9%	28.1%	26.4%	0.8%	9.2%	51.9%	83.0%
DEBT.GR	154,399	41,733	0.5%	0.0%	11.1%	-11.6%	-1.8%	0.2%	16.8%
FIN.COST	132,655	37,933	2.2%	1.4%	2.8%	0.1%	0.5%	2.9%	6.9%
INVEST	148,389	40,231	9.0%	-5.8%	85.6%	-52.9%	-17.3%	6.4%	110.8%
LNA	154,399	41,733	10.467	10.484	1.467	8.034	9.505	11.479	12.836
CASH	152,007	41,190	13.4%	6.3%	17.1%	0.2%	1.7%	18.5%	51.2%
YOUNG	154,399	41,733	0.094	0	0.292	0	0	0	1

* Based on firm-year observations used in the estimation of specification 1 in Table 3.

** Based on firm-year observations used in the estimation of specification 1 in Table 4.

Table 3. Impact of increases in the number of bank branches on counties

This table presents the results of the GMM-SYS model estimations. For the sake of brevity, year dummies' coefficients are not reported. The variables describing instability of the local banking market are treated as endogenous.

	(1) $UNEMPL.INCR_t$	(2) $UNEMPL.INCR_t$	(3) $NEW.COMP_t$	(4) $NEW.COMP_t$
$UNEMPL.INCR_{t-1}$	-0.188	-0.0609		
	(0.190)	(0.0378)		
$NEW.COMP_{t-1}$			0.117	0.151
			(0.178)	(0.131)
HHI_t	-0.0195***	-0.0209**	0.0130	-0.345**
	(0.00696)	(0.00893)	(0.400)	(0.136)
$MAX.10.BANKS_t$	0.00176	0.00219*	-0.0385	-0.00301
	(0.00108)	(0.00128)	(0.0333)	(0.0150)
$GRADUATES_t$	-0.000633**	-0.000382	0.0535***	0.0447***
	(0.000286)	(0.000248)	(0.0146)	(0.0115)
$POP.DENS_t$	6.03e-05	4.97e-05	0.00430*	0.00435*
	(5.27e-05)	(6.96e-05)	(0.00237)	(0.00223)
$MEAN.ROS_t$	0.0228**	0.0193**	-0.356*	-0.242
	(0.00970)	(0.00893)	(0.200)	(0.165)
$MEAN.SALES.GR_t$	-0.00421	-0.00535	0.149	0.0353
	(0.00454)	(0.00484)	(0.134)	(0.0455)
$BRANCH.INCR_{t-1}$	-0.0611***		-0.233	
	(0.0178)		(0.319)	
$BRANCH.COOP.INCR_{t-1}$		-0.00521*		0.0101
		(0.00306)		(0.0386)
$BRANCH.CB.INCR_{t-1}$		-0.0267**		-0.145
		(0.0130)		(0.104)
Constant	-0.0229***	0.0105***	0.682***	0.853***
	(0.00112)	(0.00241)	(0.147)	(0.128)
Observations	1,893	1,846	1,893	1,846
Number of counties	379	372	379	372
Hansen	14.12	20.60	8.680	21.97
Hansen (p-value)	0.167	0.300	0.563	0.233

Note: *, **, *** refer to statistical significance at the 10%, 5%, and 1% levels, respectively. Robust standard errors are shown in parentheses.

Table 4. Impact of increases in the number of bank branches on SMEs

This table presents the results of the GMM-SYS model estimations. For the sake of brevity, the coefficients of county-level control variables ((HHI, MAX.10.BANKS, GRADUATES, POP.DENS, UNEMPL), year dummies, and industry dummies are not reported.

	(1)	(2)	(3)	(4)	(5)	(6)
	$DEBT.GR_t$	$DEBT.GR_t$	$FIN.COST_t$	$FIN.COST_t$	$INVEST_t$	$INVEST_t$
$DEBT.GR_{t-1}$	-0.0410***	-0.0404***				
	(0.00591)	(0.00596)				
$FIN.COST_{t-1}$			0.272***	0.254***		
			(0.0739)	(0.0728)		
$INVEST_{t-1}$					0.0314***	0.0310***
					(0.00403)	(0.00404)
LNA_t	0.0115***	0.0115***	-0.00134***	-0.00134***	0.0848***	0.0853***
	(0.000282)	(0.000283)	(0.000100)	(0.000101)	(0.00210)	(0.00211)
$CASH_{t-1}$	0.0117***	0.0112***	-0.00421***	-0.00410***	0.260***	0.263***
	(0.00217)	(0.00216)	(0.000695)	(0.000696)	(0.0263)	(0.0265)
TAT_{t-1}	0.00694***	0.00691***	-0.000679***	-0.000672***	0.0212***	0.0213***
	(0.000261)	(0.000260)	(7.47e-05)	(7.41e-05)	(0.00220)	(0.00222)
$COLLAT_{t-1}$	-0.00149	-0.00178	0.000103	6.26e-05		
	(0.00185)	(0.00185)	(0.000355)	(0.000359)		
ROS_{t-1}	0.00957***	0.00931***	0.00370***	0.00356***		
	(0.00241)	(0.00241)	(0.00107)	(0.00107)		
$LT.LIAB_{t-1}$	-0.128***	-0.127***			-0.130***	-0.128***
	(0.00416)	(0.00413)			(0.0193)	(0.0195)
$EQUITY_{t-1}$			-0.0197***	-0.0203***		
			(0.00200)	(0.00197)		
$EBIT.S_{t-1}$					0.0622***	0.0611***
					(0.0169)	(0.0171)
$FIX.A_{t-1}$					-0.632***	-0.634***
					(0.0154)	(0.0155)
$BRANCH.INCR_{t-1}$	0.00342		0.000218		0.00815	
	(0.00412)		(0.000824)		(0.0296)	

$BRANCH.COOP.INCR_{t-1}$		0.00183*		-9.75e-06		0.0129*
		(0.00106)		(0.000237)		(0.00751)
$BRANCH.CB.INCR_{t-1}$		0.000858		-0.000672		-0.0172
		(0.00228)		(0.000424)		(0.0156)
Constant	-0.126***	-0.125***	0.0376***	0.0395***	-0.623***	-0.616***
	(0.00392)	(0.00395)	(0.00320)	(0.00372)	(0.0296)	(0.0303)
Observations	154,399	152,711	119,353	118,004	146,113	144,508
Number of firms	41,733	41,309	34,396	34,039	39,569	39,163
Hansen	16.84	17.00	1.021	0.476	16.33	15.57
Hansen (p-value)	0.207	0.199	0.312	0.490	0.232	0.273

Note: *, **, *** refer to statistical significance at the 10%, 5%, and 1% levels, respectively. Robust standard errors are shown in parentheses.

Table 5. Impact of bank entries/exits on counties

This table presents the results of the GMM-SYS model estimations. The set of unreported explanatory variables includes year dummies, industry dummies, and county-level controls (HHI, MAX.10.BANKS, GRADUATES, POP.DENS, MEAN.ROS, MEAN.SALES.GR, and a lagged dependent variable). The variables describing instability of the local banking market are treated as endogenous.

	$UNEMPL.INCR_t$	$UNEMPL.INCR_t$	$NEW.COMP_t$	$NEW.COMP_t$
Panel A. Increases in the number of banks				
	(1)	(2)	(3)	(4)
$BANKS.INCR_{t-1}$	-0.00151		-0.0318	
	(0.00124)		(0.0291)	
$BANKS.COOP.INCR_{t-1}$		-0.00373**		0.0132
		(0.00189)		(0.0405)
$BANKS.CB.INCR_{t-1}$		-0.00181		-0.0337
		(0.00120)		(0.0259)
Observations	1,893	1,893	1,893	1,893
Number of counties	379	379	379	379
Hansen	14.80	21.43	11.71	21.58
Hansen (p-value)	0.140	0.258	0.305	0.251
Panel B. Bank entries				
	(5)	(6)	(7)	(8)
$ENTRIES_{t-1}$	0.00586		-0.0537	
	(0.00422)		(0.103)	
$COOP.ENTRIES_{t-1}$		-0.00293		-0.0317
		(0.00350)		(0.0873)
$CB.ENTRIES_{t-1}$		-0.00396**		0.0705
		(0.00182)		(0.0787)
Observations	1,893	1,893	1,893	1,893
Number of counties	379	379	379	379
Hansen	5.112	25.94	11.75	9.555
Hansen (p-value)	0.646	0.101	0.109	0.215
Panel C. Bank exits				
	(9)	(10)	(11)	(12)
$EXITS_{t-1}$	-0.000712		-0.0688	
	(0.00473)		(0.0836)	
$COOP.EXITS_{t-1}$		0.0157*		-0.0939
		(0.00853)		(0.128)
$CB.EXITS_{t-1}$		-0.00209		0.0830
		(0.00445)		(0.0952)
Observations	1,893	1,893	1,893	1,893
Number of counties	379	379	379	379
Hansen	13.45	25.34	6.905	11.75
Hansen (p-value)	0.200	0.116	0.734	0.860

Note: *, **, *** refer to statistical significance at the 10%, 5%, and 1% levels, respectively. Robust standard errors are shown in parentheses.

Table 6. Impact of bank entries/exits on SMEs

This table presents the results of the GMM-SYS model estimations. The set of unreported explanatory variables includes county-level controls (HHI, MAX.10.BANKS, GRADUATES, POP.DENS, and UNEMPL), year dummies, industry dummies, a lagged dependent variable, and other firm-level controls, i.e.: (a) LNA, CASH, TAT, COLLAT, ROS, LT.LIAB, in the case of specifications 1-2, 7-8 and 13-14; (b) LNA, CASH, TAT, COLLAT, ROS, EQUITY, in the case of specifications 3-4, 9-10 and 15-16; (c) LNA, CASH, TAT, LT.LIAB, EBIT.S, FIX.A, in the case of specifications 5-6, 11-12 and 17-18. All firm-level control variables, except for LNA, were lagged by one period.

	$DEBT.GR_t$	$DEBT.GR_t$	$FIN.COST_t$	$FIN.COST_t$	$INVEST_t$	$INVEST_t$
Panel A. Increases in the number of banks						
	(1)	(2)	(3)	(4)	(5)	(6)
$BANKS.INCR_{t-1}$	-0.000349		-0.000246***		-0.000318	
	(0.000274)		(5.65e-05)		(0.00212)	
$BANKS.COOP.INCR_{t-1}$		0.000442		-0.000148*		0.00332
		(0.000442)		(8.58e-05)		(0.00372)
$BANKS.CB.INCR_{t-1}$		-0.000678**		-0.000286***		-0.00179
		(0.000325)		(6.71e-05)		(0.00248)
Observations	154,399	154,399	119,353	119,353	146,113	146,113
Number of firms	41,733	41,733	34,396	34,396	39,569	39,569
Hansen	16.82	16.84	0.965	0.986	16.34	16.34
Hansen (p-value)	0.208	0.207	0.326	0.321	0.231	0.231
Panel B. Bank entries						
	(7)	(8)	(9)	(10)	(11)	(12)
$ENTRIES_{t-1}$	-0.000361		-0.000325***		0.000176	
	(0.000308)		(6.74e-05)		(0.00238)	
$COOP.ENTRIES_{t-1}$		0.000783*		-8.80e-05		0.000361
		(0.000475)		(9.28e-05)		(0.00399)
$CB.ENTRIES_{t-1}$		-0.000991**		-0.000454***		8.10e-05
		(0.000396)		(8.65e-05)		(0.00303)
Observations	154,399	154,399	119,353	119,353	146,113	146,113
Number of firms	41,733	41,733	34,396	34,396	39,569	39,569
Hansen	16.82	16.87	1.064	1.055	16.33	16.33
Hansen (p-value)	0.207	0.205	0.302	0.304	0.232	0.232

Panel C. Bank exits						
	(13)	(14)	(15)	(16)	(17)	(18)
$EXITS_{t-1}$	8.25e-05		-2.06e-05		0.000791	
	(0.000449)		(8.63e-05)		(0.00349)	
$COOP.EXITS_{t-1}$		0.000313		9.24e-05		-0.0104*
		(0.000719)		(0.000140)		(0.00613)
$CB.EXITS_{t-1}$		-2.71e-05		-7.47e-05		0.00604
		(0.000559)		(0.000109)		(0.00419)
Observations	154,399	154,399	119,353	119,353	146,113	146,113
Number of firms	41,733	41,733	34,396	34,396	39,569	39,569
Hansen	16.83	16.83	1.028	1.000	16.33	16.27
Hansen (p-value)	0.207	0.207	0.311	0.317	0.232	0.235

Note: *, **, *** refer to statistical significance at the 10%, 5%, and 1% levels, respectively. Robust standard errors are shown in parentheses.

Table 7. Impact of changes in bank ownership on counties

This table presents the results of the GMM-SYS model estimations. The set of unreported explanatory variables includes year dummies, industry dummies, and county-level controls (HHI, MAX.10.BANKS, GRADUATES, POP.DENS, MEAN.ROS, MEAN.SALES.GR, and a lagged dependent variable). The variables describing instability of the local banking market are treated as exogenous.

	$UNEMPL.INCR_t$	$UNEMPL.INCR_t$	$NEW.COMP_t$	$NEW.COMP_t$
Panel A. Ownership changes measured at the bank level				
	(1)	(2)	(3)	(4)
$ACQ.BANK_{t-1}$	-0.00372		0.0193***	
	(0.00343)		(0.00648)	
$ACQ.BANK.COOP_{t-1}$		-0.00210		0.0185
		(0.00838)		(0.0264)
$ACQ.BANK.CB_{t-1}$		-0.00373		0.0193***
		(0.00345)		(0.00652)
Observations	1,514	1,514	1,514	1,514
Number of counties	379	379	379	379
Hansen	3.555	3.593	3.356	3.356
Hansen (p-value)	0.169	0.166	0.187	0.187
Panel B. Ownership changes measured at the branch level				
	(5)	(6)	(7)	(8)
$ACQ.BRANCH_{t-1}$	2.33e-05		0.00619***	
	(5.60e-05)		(0.00107)	
$ACQ.BRANCH.COOP_{t-1}$		-0.000533		-0.000564
		(0.000954)		(0.00837)
$ACQ.BRANCH.CB_{t-1}$		2.59e-05		0.00622***
		(5.70e-05)		(0.00109)
Observations	1,514	1,514	1,514	1,514
Number of counties	379	379	379	379
Hansen	3.021	3.075	3.577	3.538
Hansen (p-value)	0.221	0.215	0.167	0.171

Note: *, **, *** refer to statistical significance at the 10%, 5%, and 1% levels, respectively. Robust standard errors are shown in parentheses.

Table 8. Impact of changes in bank ownership on SMEs

This table presents the results of the GMM-SYS model estimations. The set of unreported explanatory variables includes county-level controls (HHI, MAX.10.BANKS, GRADUATES, POP.DENS, and UNEMPL), year dummies, industry dummies, a lagged dependent variable, and other firm-level controls, i.e.: (a) LNA, CASH, TAT, COLLAT, ROS, LT.LIAB, in the case of specifications 1-2 and 7-8; (b) LNA, CASH, TAT, COLLAT, ROS, EQUITY, in the case of specifications 3-4 and 9-10; (c) LNA, CASH, TAT, LT.LIAB, EBIT.S, FIX.A, in the case of specifications 5-6, 11-12. All firm-level control variables, except for LNA, were lagged by one period.

	$DEBT.GR_t$	$DEBT.GR_t$	$FIN.COST_t$	$FIN.COST_t$	$INVEST_t$	$INVEST_t$
Panel A. Ownership changes measured at the bank level						
	(1)	(2)	(3)	(4)	(5)	(6)
$ACQ.BANK_{t-1}$	0.000273		0.000400***		-0.00207	
	(0.000716)		(0.000134)		(0.00528)	
$ACQ.BANK.COOP_{t-1}$		0.000331		0.00118		2.26e-05
		(0.00401)		(0.000790)		(0.0331)
$ACQ.BANK.CB_{t-1}$		0.000272		0.000376***		-0.00213
		(0.000726)		(0.000136)		(0.00536)
Observations	124,214	124,214	95,939	95,939	117,366	117,366
Number of firms	40,558	40,558	32,928	32,928	38,358	38,358
Hansen	16.72	16.72	0.805	0.791	14.07	14.07
Hansen (p-value)	0.160	0.160	0.370	0.374	0.297	0.296
Panel B. Ownership changes measured at the branch level						
	(7)	(8)	(9)	(10)	(11)	(12)
$ACQ.BRANCH_{t-1}$	-3.67e-06		-5.03e-05***		3.63e-05	
	(2.95e-05)		(8.54e-06)		(0.000266)	
$ACQ.BRANCH.COOP_{t-1}$		8.63e-05		0.000323		-0.00306
		(0.00218)		(0.000311)		(0.0144)
$ACQ.BRANCH.CB_{t-1}$		-3.69e-06		-5.04e-05***		3.68e-05
		(2.95e-05)		(8.55e-06)		(0.000266)
Observations	124,214	124,214	95,939	95,939	117,366	117,366
Number of firms	40,558	40,558	32,928	32,928	38,358	38,358

Hansen	16.71	16.71	0.849	0.837	14.06	14.06
Hansen (p-value)	0.161	0.161	0.357	0.360	0.297	0.297

Note: *, **, *** refer to statistical significance at the 10%, 5%, and 1% levels, respectively. Robust standard errors are shown in parentheses.

Table 9. Impact of banking market instability on young SMEs

This table presents the results of the GMM-SYS model estimations. The set of unreported explanatory variables includes county-level controls (HHI, MAX.10.BANKS, GRADUATES, POP.DENS, and UNEMPL), year dummies, industry dummies, a lagged dependent variable, and other firm-level controls, i.e.: (a) LNA, CASH, TAT, COLLAT, ROS, LT.LIAB, in the case of specifications 1-6; (b) LNA, CASH, TAT, COLLAT, ROS, EQUITY, in the case of specifications 7-12; (c) LNA, CASH, TAT, LT.LIAB, EBIT.S, FIX.A, in the case of specifications 13-18. YOUNG is a binary variable that takes the value of 1 if a firm is not more than 5 years old, and 0 otherwise. All firm-level control variables, except for LNA, were lagged by one period.

Panel A. Impact on debt growth

	(1)	(2)	(3)	(4)	(5)	(6)
	$DEBT.GR_t$	$DEBT.GR_t$	$DEBT.GR_t$	$DEBT.GR_t$	$DEBT.GR_t$	$DEBT.GR_t$
Def. of INSTB.COOP:	BRANCH.COOP.INCR	BANKS.COOP.INCR	COOP.ENTRIES	COOP.EXITS	ACQ.BANK.COOP	ACQ.BRANCH.COOP
Def. of INSTB.CB:	BRANCH.CB.INCR	BANKS.CB.INC	CB.ENTRIES	CB.EXITS	ACQ.BANK.CB	ACQ.BRANCH.CB
$YOUNG_t$	0.0146***	0.0158***	0.0178***	0.0142***	0.0189***	0.0169***
	(0.00145)	(0.00170)	(0.00222)	(0.00166)	(0.00324)	(0.00188)
$INSTB.COOP_{t-1}$	0.00215**	0.000446	0.000858*	0.000588	0.00133	0.000404
	(0.00109)	(0.000452)	(0.000482)	(0.000738)	(0.00404)	(0.00221)
$INSTB.CB_{t-1}$	0.00100	-0.000432	-0.000663*	-9.21e-05	0.000463	7.91e-06
	(0.00227)	(0.000329)	(0.000398)	(0.000571)	(0.000729)	(3.04e-05)
$YOUNG_t$ x $INSTB.COOP_{t-1}$	-0.00462	-0.000366	-0.00107	-0.00297	-0.0102	-0.00452
	(0.00416)	(0.00157)	(0.00157)	(0.00289)	(0.0196)	(0.0125)
$YOUNG_t$ x $INSTB.CB_{t-1}$	-0.000897	-0.00282**	-0.00353**	0.000957	-0.00265	-0.000116*
	(0.0124)	(0.00136)	(0.00166)	(0.00247)	(0.00215)	(7.01e-05)
Observations	152,706	154,394	154,394	154,394	124,210	124,210
Number of firms	41,308	41,732	41,732	41,732	40,557	40,557
Hansen	17.50	17.43	17.44	17.36	17.29	17.25
Hansen (p-value)	0.178	0.181	0.180	0.183	0.139	0.140

Panel B. Impact on financial costs

	(7)	(8)	(9)	(10)	(11)	(12)
	$FIN.COST_t$	$FIN.COST_t$	$FIN.COST_t$	$FIN.COST_t$	$FIN.COST_t$	$FIN.COST_t$

Def. of INSTB.COOP:	BRANCH.COOP.INCR	BANKS.COOP.INCR	COOP.ENTRIES	COOP.EXITS	ACQ.BANK.COOP	ACQ.BRANCH.COOP
Def. of INSTB.CB:	BRANCH.CB.INCR	BANKS.CB.INC	CB.ENTRIES	CB.EXITS	ACQ.BANK.CB	ACQ.BRANCH.CB
$YOUNG_t$	0.000893***	0.00120***	0.00136***	0.000771**	0.000898	0.00124***
	(0.000328)	(0.000342)	(0.000453)	(0.000336)	(0.000631)	(0.000389)
$INSTB.COOP_{t-1}$	0.000137	-8.17e-05	-9.00e-06	0.000157	0.00115	0.000269
	(0.000224)	(8.70e-05)	(9.42e-05)	(0.000143)	(0.000782)	(0.000304)
$INSTB.CB_{t-1}$	-0.000810*	-0.000272***	-0.000448***	-0.000104	0.000388***	-4.57e-05***
	(0.000414)	(6.71e-05)	(8.65e-05)	(0.000111)	(0.000137)	(8.65e-06)
$YOUNG_t$ x $INSTB.COOP_{t-1}$	-0.00230	-0.000981***	-0.00118***	-0.000919	0.000545	0.00128
	(0.00158)	(0.000332)	(0.000321)	(0.000633)	(0.00478)	(0.00254)
$YOUNG_t$ x $INSTB.CB_{t-1}$	0.00232	-0.000166	-5.14e-05	0.000393	-0.000172	-5.08e-05***
	(0.00253)	(0.000275)	(0.000352)	(0.000485)	(0.000433)	(1.72e-05)
Observations	117,999	119,348	119,348	119,348	95,935	95,935
Number of firms	34,038	34,395	34,395	34,395	32,927	32,927
Hansen	0.519	1.075	1.070	1.014	0.837	0.897
Hansen (p-value)	0.471	0.300	0.301	0.314	0.360	0.344

Panel C. Impact on investments

	(13)	(14)	(15)	(16)	(17)	(18)
	$INVEST_t$	$INVEST_t$	$INVEST_t$	$INVEST_t$	$INVEST_t$	$INVEST_t$
Def. of INSTB.COOP:	BRANCH.COOP.INCR	BANKS.COOP.INCR	COOP.ENTRIES	COOP.EXITS	ACQ.BANK.COOP	ACQ.BRANCH.COOP
Def. of INSTB.CB:	BRANCH.CB.INCR	BANKS.CB.INC	CB.ENTRIES	CB.EXITS	ACQ.BANK.CB	ACQ.BRANCH.CB
$YOUNG_t$	0.146***	0.146***	0.144***	0.145***	0.151***	0.159***
	(0.0132)	(0.0155)	(0.0197)	(0.0147)	(0.0278)	(0.0169)
$INSTB.COOP_{t-1}$	0.0117	0.00365	7.56e-05	-0.0128**	-0.00847	-0.00317
	(0.00768)	(0.00371)	(0.00397)	(0.00614)	(0.0305)	(0.0137)
$INSTB.CB_{t-1}$	-0.0161	-0.00208	0.000244	0.00767*	-0.00280	1.16e-06
	(0.0156)	(0.00247)	(0.00299)	(0.00421)	(0.00530)	(0.000266)
$YOUNG_t$ x $INSTB.COOP_{t-1}$	0.0211	-0.00912	0.00177	0.0433	0.158	0.0232
	(0.0356)	(0.0173)	(0.0172)	(0.0335)	(0.258)	(0.149)
$YOUNG_t$ x $INSTB.CB_{t-1}$	-0.00349	0.00427	-7.68e-05	-0.0201	0.00807	0.000272

	(0.0918)	(0.0119)	(0.0141)	(0.0220)	(0.0200)	(0.000830)
Observations	144,503	146,108	146,108	146,108	117,362	117,362
Number of firms	39,162	39,568	39,568	39,568	38,357	38,357
Hansen	15.11	15.72	15.71	15.76	14.93	14.85
Hansen (p-value)	0.301	0.265	0.265	0.262	0.245	0.250

Note: *, **, *** refer to statistical significance at the 10%, 5%, and 1% levels, respectively. Robust standard errors are shown in parentheses.