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Social Capital and the Viability of Stakeholder -Oriented Firms: Evidence from Savings Banks

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Abstract. We show that social capital improves the viability of stakeholder-oriented firms operating in competitive markets. Studying exits from the population of Norwegian savings banks after deregulations, we find that banks located in communities with high social capital have a higher probability of survival, but no similar effect exists for commercial banks. Norwegian savings banks are collectively governed by their stakeholders and we provide evidence that social capital improves the efficiency of stakeholder governance. In high social capital areas, banks raise more deposits locally, distribute more of their surplus for altruistic purposes, and operate more locally-focused branch networks.

Keywords: Social Capital, Savings Banks, Stakeholder Governance, Non-profit Firms, Financial Intermediation

JEL Classification: P13, Z13, G21, G30

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1. Introduction

Governance objectives of stakeholder-oriented firms encompass the welfare of non-shareholder groups such as employees, customers, and the community at-large. Economists, however, are often sceptical about the practice of stakeholder-oriented governance. Tirole (2001) points out that the provision of adequate incentives for management to maximize the welfare of stakeholders is fraught with difficulties and that conflicting preferences among stakeholders inhibit implementation of the stakeholder ideal. Jensen (2001) argues that firms that attempt to follow the stakeholder ideal will not survive competition from profit-maximizing firms. Yet stakeholder-oriented firms continue to survive in many sectors where they compete with shareholder-owned firms (Hansmann, 1996).

In this paper, we offer a new perspective on the continued existence of stakeholder-oriented firms in competitive industries. We study survival of Norwegian savings banks after deregulation of the banking industry in the mid-1980s subjected savings banks to the full force of competition from commercial banks. Based on Putnam (1993), we hypothesize that in a competitive banking market, savings banks' efficiency and survival depend on the levels of trust and civic engagement (social capital) in the communities where the banks operate.[1]

The relation between social capital and savings banks' viability follows from the banks' organizational form: Savings banks are institutions for collective action by stakeholder groups from the banks' areas of location because they are governed by representatives of depositors, local government councils, and employees. They are non-profit firms, prohibited from distributing profits and no group holds residual cash flow rights.[2] Savings banks, therefore, have goals other than profit-maximization, and pursue both financial and social objectives. Social capital improves savings banks' efficiency by facilitating collective action among the banks' stakeholders.[3] To the best of our knowledge, our paper is the first to explore the role of social capital in stakeholder-governed firms.

We first show that savings banks survive longer as independent non-profit firms if they are located in communities with high social capital, and that

[1] Because trust and civic engagement are key aspects of social capital, in the paper, we will refer to trust and civic engagement as "social capital". Social capital may be defined as relations between people "that enable participants to act together more effectively to pursue shared objectives for mutual benefit" (Putnam, 1995).

[2] See Hansmann (1996) for a definition of non-profit firms.

[3] "Efficiency" is here understood in the sense of Putnam (1993), indicating ability to achieve the institutions' objectives rather than in the more standard sense of profit-maximization, as we explain below.

social capital increases the probability of survival by up to 20 percentage points. This result obtains after controlling for banks' financial health and a range of local population and market characteristics that may influence banks' underlying business opportunities, including unemployment, and distributions of age, income, and wealth. The result, therefore, does not follow from a lack of business opportunities and consequent low market penetration by competitors in communities with high social capital. We subsequently show that social capital does not affect the survival of competing commercial banks whose organizational form implies that collective action among stakeholders do not play a pivotal role in their governance.

Putnam (1993) argues that social capital improves the efficiency of institutions for collective action by affecting both the demand for and the supply of their services. Citizens in higher social capital communities demand more effective institutional services. An efficient collective institution is in turn responsive to the demands of the community. Consistent with this mechanism, we show that savings banks located in high-social capital areas raise a larger fraction of their deposits in their home regions, they operate more locally-focused branch networks, and they distribute more of their profits as gifts to their local communities. Savings banks located in the areas with the highest level of social capital raise 25 percent more deposits locally and donate 27 percent more compared to banks in the poorest social capital areas.

Last, we investigate whether higher social capital savings banks display distinct financial performance. We find that high social capital banks earn lower returns on assets. This lower profitability, however, does not seem to result from poorly performing loan portfolios, but from lower interest rate margins, consistent with our hypothesis that stakeholders' social goals are prominent in efficiently-governed savings banks' objective functions. Overall, our results suggest that social capital plays a role for the efficiency of stakeholder governance and, consequently, the subsistence of nonprofit firms in competitive markets.

Norwegian savings banks compete in the same product markets as for-profit banks and have, since a comprehensive deregulation of branching and credit restrictions in the mid-1980s, faced severe product competition from the branch networks of for-profit banks. The location of most savings banks operating at the time of deregulation is pre-determined in the 19th century. Consequently, the Norwegian scenario of banking deregulation sets up a quasi-experiment: We observe the disappearance ("exits") of banks from the population of savings banks from around the time of deregulation (1987) until 2005, and explore which bank and community characteristics determine whether a bank in a given location is able to survive in the competitive

regime. During the sample period, about 50 percent of the banks exit the sample and cease to exist as independent savings banks. Typically, a lack of long-run profitability causes banks to exit by changing their organizational form or accepting acquisition by a larger bank, but exit may also be due to outright failure. At the end of our sample, 102 savings banks compete with 31 other, for-profit banks in Norway.

For every year of the sample, we map out the location of all Norwegian banks' branches, placing each branch in one of the 433 municipalities and match this data with measures of the level of, among others, social capital in each municipality. We then set up a discrete time survival model and estimate the probability of exit as a function of the level of social capital in the municipalities where the banks operate, controlling for other bank and municipality characteristics. The analysis is conducted with three different measures of trust and civic engagement together with their first principal component: a score of trust from the World Values Survey, households' newspaper subscriptions, and donations to charity.

Our paper is related to the literature on firms with stakeholder-oriented objectives. Fauver and Fuerst (2006) find that employee representation on German corporate boards increases firms' market value. Consistent with our approach, Allen, Carletti, and Marquez (2015) argue that stakeholder-oriented firms' overriding objective is survival in the long term. Ewerhart and Zubrickas (2013) model cooperative banks as optimal intermediaries for depositors with a preference for social equality. Fuertes, Izzeldin, Ongena, and Pappas (2013) show that Islamic banks have a lower risk of failure than conventional banks, suggesting that depositors loyalty instilled by religious beliefs has a role in governance. Illueca and Norden (2013) find that a shift of control from local to regional governments increases risk-taking by state-owned savings banks. Finally, Bøhren and Josefsen (2013) study the financial performance of Norwegian banks and find that savings banks generate returns that are comparable to those produced by commercial banks. The latter compares the performance of banks with different organizational forms, whereas we focus on non-profit banks and propose a link between social capital and the viability of that organizational form. In addition, our paper is linked with the property rights literature that addresses distinct features of shareholder versus stakeholder ownership, e.g. Hansmann (1996), Hart and Moore (1998), and Rey and Tirole (2007). Our analysis suggests that social capital may facilitate efficient stakeholder-governance.

Our work is also related to the literature examining the effect of social capital on economic outcomes. Knack and Keefer (1997) and LaPorta et al. (1997) show that countries with more trust have higher economic growth and more efficient judicial systems. Guiso, Sapienza, and Zingales (2004;

2008) document that more trusting individuals are more likely to invest in stocks and make less use of informal credit. Guiso, Sapienza, and Zingales (2009) and Bottazzi, Da Rin, and Hellmann (2015) find that trust enhances cross-border trade and investment.[4] Mistrulli and Vacca (2014) show that, in high social capital regions, financial shocks cause smaller increases in the cost of credit. The theme in these papers is how social capital and generalized trust between counter-parties facilitate financial contracting and economic exchange. While we also consider trust concerning peoples' general beliefs about others' behavior, we study how those beliefs facilitate collective action.

Finally, our paper is related to a large group of papers on the consequences of banking deregulations, including Jayaratne and Strahan (1997), Bertrand, Schoar, and Thesmar (2007), Demyanyk, Ostergaard, and Sørensen (2007), and Rice and Strahan (2010). These papers study how increased competition between banks affects economic and bank-level efficiency, such as regional growth, risk sharing, and the terms of finance extended to borrowers. Our paper is similar in that it studies how deregulation forces inefficient banks to exit, but in our setting, banks have social objectives, and we study the efficiency of stakeholder governance rather than profit maximization.

The paper proceeds as follows. In Section 2. we discuss the link between community social capital and savings banks' viability. Section 3. provides a brief overview of the Norwegian banking industry and its development since deregulation. Section 4. describes our data, and Section 5. the methodology. Section 6. discusses the empirical results, and Section 7. concludes.

2. Trust, civic engagement, and savings banks' viability

Norwegian savings banks have no owners but are governed by local stakeholders. Depositors and representatives of the municipality governments in the banks' areas of location each elect an equal number of persons to the Board of Representatives, which in turn elects the Board of Directors and the Control Committee. Depositors from all municipalities where a bank has branches are eligible to be elected and to vote.[5] The two boards together

[4] In a related vein, Giannetti and Yafeh (2012) provide evidence that cultural distance between professional decision-makers affects lending conditions in the syndicated bank loan market.

[5] Statutory law requires that savings banks' bylaws specify the municipalities from which voters and members of the banks' governing bodies should be drawn. We randomly sampled the 1987-bylaws from 22 savings banks of varying size, to investigate the municipalities named in the bylaws. We found that the bylaws named the municipalities in which

elect the CEO.[6] The Board of Representatives has a supervisory function vis-a-vis the Board of Directors and will typically set out overall directions for the banks' strategy. More detailed supervision of the banks' operations is left to the Control Committee (Bryhni et al. 1985).

Statutory law prohibits savings banks from distributing net profits and requires that residual earnings are used to replenish equity capital or distributed for charitable purposes.[7] The non-distribution constraint and the representation of stakeholder groups in banks' governing bodies imply that the banks are designed to internalize their stakeholders' interests and have other objectives than the maximization of profits.

Indeed, savings banks have historically pursued both financial and social objectives (Schmidt, 2009). Hansmann (1996) emphasizes that U.S. savings banks were established in response to financial exclusion, providing services to social groups that commercial banks were not prepared to serve at the time. In Norway, social responsibility continues to be an integral part of banks' strategies, notably in the form of distributions from the gift fund to the banks' local communities (see Section 3.) .

Essentially, Norwegian savings banks are institutions where representatives of different stakeholder groups act collectively to achieve financial and social objectives. Putnam (1993) argues that institutions for collective action operate more efficiently in communities with high levels of trust and civic engagement in community affairs, with implications for both the demand for and the supply of these institutions' services: "[C]itizens in civic communities [...] demand more effective public service, and they are prepared to act collectively to achieve their shared goals."[8] As for the supply of institutional services, he argues that "[a] good [collective institution] not only considers the demands of its citizenry (that is, is responsive), but also acts efficaciously upon these demands (that is, is effective)."[9]

Prior to deregulation, Norwegian savings banks were protected from competition. Deregulation enabled banks to open branches on each others' turfs, which, in turn, enabled local depositors to move their savings to competing

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the bank had branches, and, in a few cases, one (or a couple of) adjacent municipalities without branches.

[6] Depositors and local governments together elect 3/4s of the board. The remaining 1/4 is elected by bank employees.

[7] A maximum of 25 percent of annual earnings can be set aside in a separate gift fund and distributed for charitable purposes. The rest of the profits is to be retained and reinvested in the bank. In the case of a dissolution, any remaining equity capital must be used to further savings banks business in the bank's home area. In the case of an acquisition by another savings bank, retained equity is transferred to the merged bank.

[8] Putnam (1993), page 182.

[9] Putnam (1993), page 63.

banks at low costs if dissatisfied with their local bank. Thus, the financial foundation of banks no longer patronized by their local communities could be undermined, and their equity exhausted over time (Hansmann, 1996).

We hypothesize that in a deregulated environment, social capital matters for the survival of savings banks: In communities with high trust and civic engagement, stakeholder-governed banks operate more efficiently in the sense of Putnam (1993) and, consequently, survive longer. Banks located in such environments will resist mergers, not convert their organizational form, and abstain from the pursuit of business strategies that involve a high probability of default, as these all imply the assumption of control by community-outsiders.[10] This is our main hypothesis and we test it in Section 6.. In contrast, social capital should not play a role for the survival of banks of other organizational forms in which collective action by stakeholder groups is less likely to play a role in governance–we test this implication too, using data on Norwegian commercial banks whose owners (shareholders) hold residual cash flow rights (Section 6.4).

The relation between social capital and the viability of Norwegian savings banks may be explored further by examining the underlying mechanisms relating to the demand for and supply of collective institutions' services. Building on Putnam (1993), and illustrated in the quotation above, we investigate three mechanisms. First, we propose that in communities with higher levels of social capital, community members patronize local banks by depositing more of their savings in local banks. A stable deposit base is a necessary condition for the long-term survival of banks with limited access to wholesale money markets. We also test whether the local funding of high-social capital banks is more stable in the presence of a common shock to the economy. A large common shock during our sample period is the Norwegian banking crisis which lasted from 1988 to 1993. The crisis is a time period where retail savers faced high uncertainty about the situation of financial institutions and their loyalty would have been tested. Second, the supply side aspect of efficiency suggests that decision-making in high-social capital banks is more responsive to social demands of the community in the bank's home area. We test whether banks in high social capital areas allocate contribute more to local charity and whether they choose strategies that are more locally oriented by examining the geographical dispersion of their branch network.

[10] Conversions of savings banks organizational form have been permitted since 1987 through the issue of a form of equity that introduces owners with residual cash flow rights into the banks' governing bodies (see Section 3.)

3. A brief history of Norwegian savings banks

At their origin, the savings banks in Norway were a philanthropic project for the bourgeoisie to further the idea of saving among common people. The first banks were established in the larger towns in the 1820s, and thereafter spread to the smaller towns and the countryside. They were organized without owners, had a strong local focus, and part of the surplus was distributed as charity. From the middle of the 19th century the banks incorporated lending as part of their main activities and have, since then, served as an important source of finance for local firms and households (Thue, 2014). In 1960, 600 savings banks were operating in the country, but economic structural changes prompted a rapid consolidation of the sector, which was more than halved by the mid-1980s.[11]

Free competition in the Norwegian banking industry was introduced with credit market reforms in the 1980s. Until 1984, quantitative regulations and restrictions on bank branching effectively provided protection for savings banks against entry from outside banks.[12] The suspension of restrictions enhanced competition and prompted further consolidation of the industry: From the time of deregulation till the present, another 50 percent of the independent savings banks agreed to acquisitions or converted its organizational form. Savings banks have been able to convert their charter and increase equity capital through the issue of so-called Primary Capital Certificates (PCCs) since 1987. PCCs are residual claims on the banks' surplus and are traded on the Oslo Stock Exchange.[13]

Both acquisitions and conversions have been used by savings banks to accelerate growth, resulting in regional banks capable of competing with the largest commercial banks. Furthermore, three strategic alliances between independent savings banks were set up during the 1990s.[14] Banks within an alliance do typically not operate branches on each others' home turfs. They do, however, compete with branches of savings banks from the other

[11] In contrast to savings banks in many other countries, Norwegian savings banks are strongly engaged in business lending. At the beginning of our sample, in 1987, loans to businesses made up 31 percent of saving banks' portfolios, of which 24 percent were commercial and industrial loans. In 2005, these fractions were 26 and 23 percent, respectively.
[12] To establish new branches, banks were required to obtain approval from the Ministry of Finance, which, through a lengthy process, would consult with the respective local authorities. See also (Norwegian Official Reports , 1992, pp. 66–67).
[13] A PCC bank is a hybrid between a commercial bank and a savings bank—it has outside owners with voting and residual cash-flow rights who constitute the largest stakeholder block in the Committee of Representatives.
[14] See the Norwegian Savings Bank Association (www.sparebankforeningen.no).

alliances, or savings banks outside the alliances. Hence, savings banks compete not just with commercial banks but also with each other.

The banking crisis in 1988-1993 also contributed to the transformation of the industry. From 1988 to 1990, 14 small and some regional banks failed, mostly savings banks. Towards the end of 1990, the situation deteriorated and the crisis became systemic, forcing the government to establish a governmentally-financed insurance fund.[15] None of the failed savings banks were closed. Instead, they were acquired by larger solvent savings banks, or made to sell their devalued equity capital to the Savings Bank Guarantee Fund through the issue of PCCs. 15 acquisitions of savings banks and 3 PCC-conversions were the results of these rescue operations, corresponding to 20 percent of the savings banks exits in the sample. The pattern of failures during the crisis contains relevant information for our analysis: Savings banks in low social capital areas are more likely to shift risk and consequently exit early in a deregulated regime.[16]

Overall, regulatory changes and the consequent transformation of the banking industry resulted in a decrease in the number of savings banks from 191 in 1987 to 102 in 2005. 23 banks converted to PCC-form. The remaining savings banks were acquired by larger banks.

4. Measuring social capital

Trust and civic engagement are key dimensions of social capital (Coleman, 1988; Putnam 1993, 1995, and 2000). We proxy the level of social capital within a community with three different measures that reflect these dimensions: (1) a measure of trust from the 1990 World Values Survey, (2) household subscriptions to newspapers, and (3) charity donations. By nature, the measurement of unobservable social capital is not straightforward. For our purposes, proxies for social capital must be available at the municipality or county level, display cross-sectional variation, and not be causally affected by savings banks' probability of survival. We discuss each measure in turn and refer to the data appendix for the remaining variables used in the regressions.

Trust facilitates cooperation towards the implementation of common goals.[17] We follow Guiso, Sapienza, and Zingales (2004) and use the WVS

[15] At the peak of the crisis in 1991, aggregate loan loss provisions by commercial banks constituted more than 4% of total assets, whereas provisions by savings banks were about 2% of assets.

[16] See Moe, Solheim, and Vale (2004) for an account of the Norwegian banking crisis.

[17] The social capital literature distinguishes between generalized and personalized trust (see Durlauf and Fafchamps, 2005). The first pertains to people's preconceptions con-

trust measure to proxy for social capital. Our measure of trust thus indicates, on a score of 1–5, the level of trust towards other Norwegians where the score of 5 indicates high trust and the score of 1 high distrust. The variable is available at the county-level.

Interest and knowledge about public issues are necessary conditions for civic engagement in community affairs. Being informed fosters discussion and connectedness among community members. Newspaper readership has been suggested as a measure of civic engagement by Putnam (1993). We use a measure of the average number of newspapers subscribed to by households in each municipality.[18]

Altruism and volunteering indicate peoples' willingness to contribute towards a general goal at the price of reduced individual consumption and are strongly related to civic engagement.[19] Our charity donation measure comes from the annual Norwegian TV charity show—a prime time media event broadcasted nationally on a Sunday in October with the purpose of raising donations for a particular charity organization. On the day of the charity show, door-to-door collections are carried out by volunteers from municipalities all over the country. We construct a municipality-level donation ratio based on the amount raised in day-time door-to-door collections defined as the average donation per unit of income.

Due to its mountainous geography, Norway has a distinct regional character with many small communities and strong regional identities, and the cultural distinctiveness of its regions have been documented by Norwegian sociologists. Since late medieval times, the Southern and Western communities have been more equalitarian communities where forested and agricultural land holdings were of homogeneous small size. In contrast, the Northern, Central, and Eastern regions have had more feudal characteristics with smallholders, forestry and seasonal laborers depending on a few dominant forest owners and large-scale landowners (Rokkan, 1967). Thus, the socioeconomic heterogeneity of Norwegian communities may be part of the ex-

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cerning the behavior of other people not necessarily known to them. The latter concerns the beliefs of one agent about the behavior of another arising from interactions between the two. We focus on generalized trust, so that we are concerned with what might be considered cursory beliefs and generalizations about fellow citizens' behaviors.

[18] Norwegian households' newspaper consumption per capita is among the highest in the world and the newspaper distribution pattern has a distinct local character (Høst, 2005).

[19] Putnam (2000) writes that " Doing good *for* other people, is not part of the definition of social capital. But [...] volunteering and philanthropy and even spontaneously helping are all strongly predicted by civic engagement."

planation for the geographical pattern in social capital that we document below.[20]

Figure 1 displays the distribution of the three social capital measures across municipalities. Each map indicates high levels of social capital along the bottom half of the West coast, but otherwise the distributions appear quite dissimilar. This is confirmed by the low cross-correlations between the three measures. Newspaper Subscriptions and Donation Ratio have the highest correlation of 0.31. Trust and Newspaper Subscriptions, respectively Trust and Donation Ratio, have correlations 0.20 and 0.14. By nature, it is not possible to know which proxy comes closest to capturing the true variation in social capital. Therefore, we also run regressions using the first principal component of the three social capital measures.

5. Methodology

We use a discrete-time hazard model to estimate the relations between savings banks' survival and social capital in the municipalities where the banks operate.[21] The relevant event is the disappearance of the savings bank as an independent non-profit firm.

To record event occurrence, we divide the time from branching deregulation into equal-sized intervals of length one year, with interval j defined as $(\,j-1, j\,]$. Interval $j=1$ is thus the first year following the date of branching deregulation, 1 January 1984.[22] Let T denote the time (years) elapsed from branching deregulation to the observed exit of savings bank i, i.e. we have observations on n iid random variables, where n is the number of banks observed at the beginning of interval 1. The hazard rate for bank i in year j is defined as

$$h_{ij} = prob(\mathrm{T}_i = j | \, \mathrm{T}_i \geq j, x_{ij}) \,, \tag{1}$$

where x_{ij} is a $(k \times 1)$ vector of bank-specific (constant or time-varying) explanatory variables of the event of bank i's exit during observation interval j. that measure the characteristics of bank i and the markets in which it operates, among others, the level of social capital.

[20] Accordingly, Putnam (1993) describes cultural heterogeneity and social capital as the product of historical events and proposes that the difference in social capital between the North and South of Italy is rooted in the free city-state experiences of the communities in the North.

[21] A detailed derivation of our methodology is provided in an internet appendix accompanying this paper.

[22] We prefer to model the process in discrete rather than continuous time to match the frequency of the exits and the explanatory variables, most of which are available only annually.

We specify a proportional odds logistic model for the hazard rate:

$$\log\left[\frac{h_{ij}}{1-h_{ij}}\right] = \log\left[\frac{h_{0j}}{1-h_{0j}}\right] + \beta' x_{ij} \tag{2}$$

$$\Leftrightarrow \; h_{ij} = \frac{1}{1+e^{-[\theta_{0j}+\beta' x_{ij}]}} \quad . \tag{3}$$

In (2), the log-odds of the hazard rate for each bank depends linearly on x_{ij} and a "baseline" hazard of risk over time, $logit(h_{0j}) = \theta_{0j}$. The baseline hazard is common to all banks and captures the underlying process of consolidation in the banking sector after deregulation.

We specify a functional form for θ_{0j},

$$\theta_{0j} = \alpha_0 + \alpha_1 \log(j) + \alpha_2 [\log(j)]^2 . \tag{4}$$

In (4), the sign of α_1 controls the pattern of duration dependence for the population of savings banks.[23] We include a quadratic term to capture the fact that the hazard rate cannot continuously decrease or increase forever since the population of banks is fixed. The form in (4) was chosen based on a preliminary non-parametric estimation of the baseline hazard, with the aim of capturing the "shape" of the process of consolidation in a parsimonious manner, preserving degrees of freedom. As a robustness check, we estimate our main regression using time dummy variables in place of (4).

Brown (1975) and Allison (1982) show how the likelihood function for the event of bank exit can be formulated as the likelihood function for binary dependent variable, y_{ij}, equal to one if bank i exits during interval j and zero otherwise. We thus estimate a logit model with y_{it} as dependent variable and α_0, $\log(j)$, $(\log(j))^2$, and x_{ij} as explanatory variables.

5.1 Construction of duration and explanatory variables

We measure duration of banks' lifetimes as follows. We collect information on the timing of all acquisitions involving savings banks, on all issues of PCCs, and define the event of exit to take place during the year in which either of these two events occur.[24] In the case of acquisitions, target banks are treated as exiting. Essentially all of the mergers that occur during our sample period have clearly defined target and acquiring banks and it is almost always the case that the bank known to be the acquiring bank is

[23] When α_1 is negative the hazard rate is monotonically decreasing over time for all banks, and vice versa for positive α_1. When α_1 is zero, the baseline probability of exit is constant for all observation intervals.

[24] When exit occurs right at the beginning of a year, i.e. a bank is, say, acquired on 1 January, the event is defined as having taken place during the preceding year.

also the largest.[25] New (de novo) savings banks are established during the sample period. We exclude such banks entirely from the analysis as such banks choose location after deregulation has occurred.[26]

To construct the explanatory variables in (1) we map municipality-level data into bank-specific variables using information on the branch structure of each bank. In each year of the sample, we know the exact location of the banks' branches. For every bank we can therefore construct a weighted average of the municipality-level variables, where the weights are the fractions of the bank's branches located in the municipalities.[27]

For example, let $\log(\text{POP}_m)$ denote the log of the population in municipality m and BRANCHES_{im} denote the number of branches of bank i in municipality m. We construct the bank-level population variable, "$\log(\text{Population})_i$", as the weighted average of (logged) population size.

$$\log(Population)_i = \sum_m \left[\frac{\text{BRANCHES}_{im}}{\sum_m \text{BRANCHES}_{im}} \cdot \log(\text{POP}_m) \right] . \tag{5}$$

The branch structure employed in (5) is the structure that applies at the beginning of each interval (year). Other bank-level explanatory variables, including our measures of social capital, are constructed in a similar manner.

In the estimated model, the explanatory variable of interest is the measure of the level of social capital in the municipalities in which a given bank operates. In addition, we include several other variables in the regression to control for the characteristics of the municipalities, in particular municipality size, the proportion of residents in retirement (proxied by the fraction of the population over 67 years of age), and the education level of the residents in the municipality. Our measures of social capital, are likely to be correlated with these population characteristics—omitting such characteristics might bias our results. Also, donations to charity may be affected by the level of income in a municipality. We therefore scale the charity donation measure by average (gross) personal income in the municipality.

Competition from other banks is also likely to affect the survival of savings banks. We include in our regressions a bank-specific measure of the

[25] Except in one case, a new bank, Sparebanken Sogn og Fjordane, was formed by a merger of eight smaller banks. In this case, however, one bank comprised 60 percent of all bank assets in the merger, and we define that bank to be the de-facto acquiring bank.

[26] Only four new savings banks have been founded during our sample period (adding only 7 observations to the sample). Including these observations makes no difference to the results.

[27] This calculation implicitly assumes that a bank's branches are all of equal size. The assumption is necessary because data on the distribution of bank assets on municipalities do not exist.

degree of competition a given bank faces from other banks, which we measure in alternative ways. Our preferred measure, "bank asset competition", captures the average weighted market share of competing banks in municipalities in which a given bank has branches. We proxy market share by total assets assuming that all branches of a given bank are of similar size.[28] The alternative competition measures; the number of competing banks, the number of competing banks' branches, the number of competing large banks (size above the 90th percentile), and the number of competing commercial banks respectively, are computed in a similar manner. Importantly, we *always* compute the bank market competition measures from information on all municipalities and all banks in the Norwegian banking industry. Our competition measures therefore reflect the actual competition a bank is exposed to from *all* other banks.

We also want to ascertain that surviving high-social capital banks are not located in areas void of business opportunities. Many of our control variables capture aspects of banks' investment opportunity set (e.g. bank competition, unemployment, population age), but we still include a dummy variable equal to one if a bank is the only bank present in the municipality of its headquarter in the regression.

Furthermore, we include two measures of bank characteristics at the beginning of the sample; the equity capital ratio and bank assets in 1987. The suggestion of Hansmann (1996) that savings banks die only slowly because they are not under pressure to generate economic profits, would suggest that a bank can survive in a competitive regime for a longer period of time if it starts out with a considerable level of capital. It is also possible that bank size matters for the probability of survival. Large banks typically have more diversified portfolios, which may improve their risk-return tradeoff, and make them less susceptible to local economic shocks. Bank size and capitalization are, through accounting identities, causally affected by a bank's continued survival and therefore we use only the 1987-values of these two variables.

Finally, we include control variables for the level of economic activity measured by average personal income and the rate of unemployment, lagged one period. Bank lending may lower local unemployment, and we control for this by including the lagged rate of unemployment. In general we collect municipality level data for as many years of the sample period as possible but statistics are not always available for every year. In such cases, we construct

[28] For a given bank, we compute the asset competition it faces as the weighted sum of assets held by competing banks in each municipality similar to (5).

a step-wise variable in accordance with the years of information that are available.[29]

As a final test of robustness, we run our main regressions taking into account the pattern of failed banks during the banking crisis. In particular, for a failed bank, we determine the year of exit as the first year in which it receives capital from the savings banks guarantee fund.[30] This redefinition effectively shifts the distribution of exit dates towards the beginning of the sample and causes more tied observations, which may potentially reduce identification.

6. Results and discussion

6.1 Descriptive statistics

Table 1 summarizes the structure of the Norwegian banking sector in 1987 and 2005 for savings banks, commercial banks and PCC banks respectively. Common for savings banks and commercial banks is a consolidation in both number of banks and number of branches. The number of non-profit savings banks drops from 191 in 1987 to 102 in 2005 compared to a decrease in the population of commercial banks from 22 to 3 and an increase in the population of PCC banks from 0 to 23. The average savings bank is considerably smaller than the average commercial or PCC bank. Savings banks have, on average, 7.6 branches in 1987 and 3.4 in 2005, whereas the average commercial bank has around 30 branches and a PCC bank has close to 20 branches. The table also shows that savings banks that have remained independent during the sample period tend to be much smaller than savings banks that have converted their organizational form, consistent with growth being a driver of PCC-conversions. PCC banks have relatively more branches in the populous municipalities. In 1987, 28.8 percent of savings bank branches and 5.8 percent of commercial and PCC bank branches are located in municipalities with below-median population. In 2005, the figures are 34.2 for savings banks and on average 19.5 percent for the two other bank types. Hence, it is not the case that savings banks survive because they are predominantly located in municipalities with few inhabitants. Overall, the figures illustrate that competition in the banking market has sharpened considerably since deregulation, also in the smaller municipalities.

[29] The data appendix, Appendix A, contains a detailed description of the construction of all variables.

[30] The guarantee fund is a private risk-sharing arrangement among the savings banks and a draw on the fund is formally not an exit but a private capital infusion.

Figure 2 contrasts the geographical distribution of savings bank branches in 1987 and 2005 with the corresponding distribution of commercial and PCC banks. The plots suggest that the competition from for-profit banks intensified over the sample period. The dilution of savings banks has occurred all over the country but has been especially strong in the northern part.

In Table 2, we display bank-level statistics for the social capital variables which display significant variation cross-sectionally. The low variation of Trust is likely due it being measured at the county level, whereas the other variables are measured at the municipality level. For the remaining variables used in the regressions, we refer the reader to the Appendices where we describe the construction and data sources of control variables and provide basic descriptive statistics.

Table 3 provides a summary of the annual number of exits from our sample of savings banks from 1987 and onwards. The second column shows the number of savings banks present in the beginning of a given year and the third column gives the number of bank exits during each year. Out of the 191 savings banks at the beginning of the sample period, 102 savings banks survive until the end of the sample. The last two columns in the table state estimated Kaplan-Meier survival probabilities and interval hazard rates. The hazard probability is highest in the earliest years of the sample, around 7 percent, and then falls to a lower level of a few percent. It is not monotonically decreasing over time: Exits are clustered in the years right after deregulation and at the end of the 1990s.

6.2 Logit regressions of the probability of exit

Table 4 shows the results from logit regressions of the hazard rate on a baseline hazard and explanatory variables. Models (1)–(5) employ the continuous social capital variables described in Section 4., whereas Models (6)–(10), replace the continuous variables with dummy variables indicating an above-average, "high", level of social capital.[31] The two specifications are alternative ways of modeling the effect of social capital. In the continuous variable-specification, the effect of social capital is assumed to monotonically increasing in the value of the variable. This may be a quite rigid restriction to impose on the data. Given the nature of social capital, one may prefer to treat it as a categorial variable that only distinguishes between high and low levels. We therefore show results with both specifications.

The estimated Models (1)-(4) and (6)-(9) show that all three measures of social capital have a significant and negative effect on the hazard rate, that

[31] The average is taken across all municipalities.

is, savings banks' probability of exit in a given period is lower when banks' branches are located in municipalities with a high(er) level of social capital. The effects are all significant at the five percent level or less in both model specifications.

To illustrate the interpretation of the estimated coefficients, consider first the estimated baseline hazard function, $\alpha_0 + ln(j) + ln(j)^2$. In period one, i.e. 1987, j equals 1 and the baseline hazard reduces to α_0. In Model (2), for example, the estimated value of α_0 is positive and equals 4.66, which implies that the odds, $(\frac{h}{1-h})$, in period one exceeds 1—the baseline probability of exit is higher than the probability of survival. One can compute that the baseline probability of exit in period one equals 0.991, or 99.1 percent.[32] The negative sign of the estimated coefficient on Newspaper Subscriptions (-1.33) then implies that a bank with a value of Newspaper Subscriptions equal to 1, has a 94.7 percent probability of exit in period one assuming for simplicity that the values of all other variables are zero.[33] That is, depending on their signs, the coefficient of the explanatory variables shift the baseline hazard up or down, in the scale of logit-hazard.[34] The estimated signs of the coefficients of the second and third term in the baseline hazard function imply that the probability of exiting over time is bell shaped, increasing at first but then falling over time. The estimated joint effect of these two terms is statistically significant at a level less than 1 percent (LR-Test 2).

The estimated effect of banks' equity ratio at the onset of the deregulated regime is also negative and statistically significant at a level below 1 percent—capitalization is clearly an important determinant of the viability of non-profit banks, and this makes economic sense since capital improves a bank's ability to withstand shocks.

In Columns (5) and (10) we run a horse race between the three measures of social capital. The estimates and levels of significance remain remarkably unchanged, indicating that each measure contains independent information and is picking up different aspects of social capital.

Of the other explanatory variables included in the regression, several are significant at the 5 or 10 percent level. The measure of business risk, Fraction of C&I Loans in 1987, is highly significant, reflecting, as predicted, that banks carrying relatively more risk on their books in the years just prior to the crisis, were more likely to exit. More intense competition increases the probability of exit as would be expected—Bank Asset Competition is

[32] $h = 0.991$ solves $\ln(\frac{h}{1-h}) = 4.66$.

[33] From $\ln(\frac{h}{1-h}) = 4.46\text{-}1.33$.

[34] Notice that the probability of exit in 1987 for a given bank depends on its value of all the variables in the model and these will in general not be equal to zero as the above calculations assume.

significant at levels around 10 percent. Large municipality size (Population) lowers the probability of exit, which may reflect the existence of underlying business opportunities. Many of the savings banks that have pursued a growth strategy after deregulation are headquartered in the more densely populated regional centers and have been acquiring other banks in mergers. Only Bank in Home Municipality has a positive sign, implying that being a single bank in an area *increases* the probability of exit. The variable is insignificant, but its sign reflects that being a single bank in an area does not automatically increase lifetime duration. Hence, our results do not reflect that savings banks survive simply because they are located in areas without competition. Banks that operate without competition from other banks are probably more likely to be situated in a region void of business opportunities, which in turn, increases the likelihood of exit. Population over 67 years is significant at levels around 15 percent with a positive sign, that is, we do not find evidence that non-profit banks located in communities with a less active population are able to survive longer. In fact, we find evidence of the opposite. Higher Median Income increases the probability of exit, but the coefficient estimate is borderline significant. The estimated coefficients of Total Assets, Education and Unemployment are all insignificant, as are State and Municipality Owned Enterprises and Population in Urban Settlement. Finally, we observe that the R-squared is of similar size in all regressions.

In Table 5 we re-estimate the two specifications replacing the parametric log-baseline hazard function with a dummy variable for each period j in which at least one bank exit occurs. The latter specification may capture time-varying macroeconomic developments better than the models with the log-baseline hazard, but, on the other hand, entails a loss of degrees of freedom given that we estimate 19 additional parameters. In fact, in four periods the baseline hazard is inestimable because no bank exit occurs in those years. The results are quite similar to those of Table 4. The estimated coefficients are of the same sign and similar magnitude, and we conclude that our results are robust to alternative specifications of the effect of time. However, because the parametric baseline specification performs as well as the general dummy-variable specification, but is more parsimonious and can be estimated for all periods, we conduct the rest of our analysis with the log-baseline function.

To get a sense of the economic importance of our results, we use Model (1) in Table 4 to estimate the marginal effect of a discrete change in the value of Trust in the year of 1987, assuming that all other explanatory variables are held at their mean values. When the average level of Trust increases from its

minimum value of 3.92 to its maximum of 4.33, the estimated probability of exit decreases by 6.6 percentage points for the average bank. In the middle of the sample period, 1997, the probability decreases by 2.2 percentage points, reflecting that the probability of exit is estimated to be highest in the beginning of the period. For Subscriptions and Donation, Models (2) and (3), the estimated marginal effects are –9.7 and –19.0 percent in 1987, and –3.0 and –4.3 percent in 1997. If one instead considers a discrete increase in Trust of one standard deviation around the mean (from 1/2 standard deviation below to 1/2 above), the corresponding decrease in the probabilities of exit are –1.6 in 1987 and –0.5 percentage points in 1997. For Subscriptions the decrease in probabilities are –1.7 and –0.5, and for Donation –3.3 and –0.7 percentage points respectively. Clearly, for a hypothetical *average* bank, the economic importance of social capital is considerable when we compare the minimum and maximum values of social capital observed in the sample, but smaller if we look at a smaller change in social capital of one standard-deviation. This suggests that average banks that operate in markets with an average level of social capital experience a relatively modest effect of it. However, banks that operate in communities with above-average social capital experience a markedly improved probability of survival.

The importance of social capital becomes further pronounced when one considers its interaction with other key variables. Economic intuition would suggest that a bank's capitalization at the time of deregulation should be one of the most important factors for survival, since well-capitalized nonprofit firms may continue to survive for long periods of time even if they operate with losses (Hansmann, 1996). Indeed, our estimates corroborate the importance of a bank's 1987-level of equity. The estimated marginal effect of changes in the ratio of equity capital in Models (1)–(3) is considerable. In 1987, a discrete change in Equity Ratio from its minimum to its maximum level, decreases the probability of exit by 43.8, 41.3, and 51.2 percentage points according to Models (1), respectively (2) and (3), holding all other explanatory variables at their means. Our estimates therefore suggest that social capital may work as a substitute to equity capital: Banks that enjoy the patronage of the local community may operate with lower levels of capital. Generally, smaller banks, including savings banks, tend to operate with considerably more equity than larger banks due to their lack of access to wholesale funding (and, possibly, lack of implicit government guarantees due to their smaller systemic importance) but higher capitalization is costly. Banks in high social capital communities may enjoy a competitive advantage.

In Figure 3, we illustrate this interaction between social capital and equity capital. We depict the estimated effect of social capital on the probability

of exit for different values of Equity Ratio in 1987, using the estimates of Models (1)–(3). All other explanatory variables are held at their mean values. The plots show that for a (hypothetical) average bank with Equity Ratio equal to the minimum ratio observed in our sample, social capital has a markedly higher effect on the probability of exit compared with a bank with average social capital. On the other hand, social capital has almost no effect on the survival probability of a bank with the maximum observed equity ratio.

6.3 Robustness

Table 7. shows regression results with alternative measures of bank market competition. The regression specification is similar to Models (1)–(4) in Table 4. As can be seen, the estimated coefficients on Trust, Subscriptions, Donation, and Principal Component are all robust to different measures of competition. The estimated coefficients on the competition measures themselves are all insignificant at conventional levels and less significant than our preferred measure of competing, Bank Asset Competition, used in Table 4. It is interesting, however, that the sign of the competition measure in Models (9)–(12), CB Branch Competition which measures competing branches of commercial banks, changes to negative and is close to being significant, indicating that stronger competition from commercial banks *lowers* the probability of exit. This seems to indicate some market segmentation, consistent with customers of savings banks having a preference for the non-profit organizational form. The insignificance of the results, however, provides only suggestive evidence for such an effect.

As a second test of robustness, we run our main regressions redefining the timing of bank exits during the banking crisis. Thus far in the analysis, all banks, including financially troubled banks, have been set to exit in the year in which they were acquired or issued PCCs. In Table 7 we redefine the year of exit for troubled banks as the first year in which they receive capital from the savings banks guarantee fund. That year typically precedes the year of acquisition or a PCC emission. The savings banks guarantee fund is a private insurance fund and, with the exception of two banks, savings banks did not receive government emergency funding during the crisis.[35] Table 7

[35] The two exceptions, Sparebanken Midt-Norge and Sparebanken Rogaland, received funding from the guarantee fund in 1991 when the fund was forced to borrow from the government. Hence, in practice, for these two banks, the year of private and public emergency funding coincides. Other troubled savings banks drew on the guarantee funding before it ran out of money. Further information on capital infusions from the savings bank guarantee fund may be found in Moe, Solheim, and Vale (2004), ch. 6.

displays the results of the redefined survival regressions. The results show that the effect of social capital is robust to this change in specification.

Our main survival model specification does not contain time-varying bank performance measures, only measures of performance in 1987. This choice is for precautionary reasons: Contemporary performance measures may suffer from *rate dependence*, i.e. performance may be affected by the risk of exit, which in turn prevents causal inference. For example, the risk of exit may be determined by a bank's business strategy (growth vs. local focus), and the risk and return associated with a particular business strategy will obviously impact performance.[36]

On the other hand, omitted variables may lead to biased estimates of social capital's effect on exit. This would be the case if bank performance is correlated with the risk of exit as well as social capital. For example, bank performance may be correlated with the wealth of the bank's customer base, which again, may be correlated with social capital. Although such a link is less straightforward, it cannot be ruled out, and we therefore include numerous time-varying demographic characteristics of a bank's local area as control variables in the regressions.

Although we prefer not to include time-varying bank performance measures in our regressions, we nevertheless present results with such measures included in Table 8 as a third test of robustness. To help alleviate rate dependence problems, we lag the measures one period. We include a measure of return (Return-On-Assets, ROA) and risk (Past Due Loans), as well as the time-varying Equity Ratio. We already know from the results in Table 4, that capitalization is the economically most important driver of banks' longevity. Because past due loans is only available from 1992, we present results both with and without that variable. In Models (1)–(4), we control for ROA and the equity-ratio.[37] Although the coefficient on Trust is no longer significant at the 5 percent level, which may be due to the fact that it varies only at the county level, all estimates of social capital's effect on exit remain negative and, in the case of the other two measures, significantly different from zero, although the estimated coefficient on Donation appears a bit large. Despite the insignificance of Trust, the estimate corresponding to the first principal component remains strongly significant. When we include Past Due Loans in columns (5)-(8), the number of observations falls considerably, as all observations prior to 1992 are now dropped from the regression. This works to

[36] Banks that pursue a growth strategy are more likely to convert their organizational form, whereas banks that maintain a local focus are less likely to convert organizational form or agree to be acquired.

[37] ROA is not available in all years for all banks, hence the number of observations is somewhat below that of Table 4.

our detriment, as most exits occur in the early sample period, but the results are qualitatively unchanged compared with columns (1)–(4). We therefore conclude that the estimated effect of social capital is robust to the inclusion of time-varying bank performance measures.

6.4 Further explorations

In this section we present some further results in support of our hypothesis. The link between social capital and saving banks' survival works through the banks' non-profit organizational form. It follows that the longeviety of banks that operate in the same market, but with a different organizational form, should not display a similar dependence on social capital. To test this implication, we conduct a duration analysis also of Norwegian commercial banks.

In 1987, 22 commercial banks exist in Norway. Of these, all but three banks exit by acquisition in either domestic (15 banks) or foreign (4 banks) mergers during the sample period. Table 9 displays the survival table of the 22 commercial banks. With this number of commercial banks, it makes little sense to specify a survival model for commercial banks similar to that of Table 4, because that would require estimation of 19 parameters and the degrees of freedom are simply to few. Instead, we estimate a parsimonious survival model of the form

$$logit(h_{ij}) = \sum_{k=1}^{k=4} \alpha_k \mathrm{D}_{k,ij} + \alpha_1 \log(j) + \alpha_2 [\log(j)]^2 , \qquad (6)$$

where the first term captures four different levels of social capital ("Low", "Middle-Low", "Middle-High", and "High") corresponding to the quartiles of the distribution of social capital over all municipalities, i.e. (6) estimates a different rate of exit for each level of social capital. $\mathrm{D}_{k,ij}$ is a indicator variable equal to one if the social capital of bank i in year j belongs to level k, and the last two terms capture the time variation in the rate of exit. This specification allows a straightforward estimation of how each level of social capital affects bank survival, as captured by the estimated α_ks. We estimate the model for savings banks and commercial banks in turn, measuring social capital by the first principal component.

The results are presented in Table 10. The columns "Numbers of banks in 1987" indicate how many savings banks, respectively, commercial banks, are located in the municipalities in each quartile at the beginning of the sample. There is a clear difference in the location of the two types of banks. Whereas the distribution of savings banks is skewed towards high social capital areas, commercial banks are mainly located in the low social capital areas. As a

case in point, only one commercial bank is located in the top group. This is prima facie evidence that social capital matters only for the non-profit organizational form. The table displays the point estimates of the α_ks and the corresponding hazard rates. It is evident that the probability of exit is decreasing in social capital for the savings banks, whereas it appears to be rising for commercial banks (the "High" level coefficient cannot be estimated with only one observation).

As a second test, we pool the observations of savings and commercial banks and estimate a survival model of the form in Table 4, interacting the social capital measures with an indicator variable for the commercial bank form. We wish to test whether the effect of social capital on exit varies with organizational form. A natural specification would be to add an interaction term between social capital and a dummy for organizational form, $SC_{ij} \cdot D_i^{CB}$, to the regression. This specification, however, cannot be conducted with continuous social capital measures because these vary very little over time and the interaction term will be almost perfectly correlated with D_i^{CB}, creating a problem of multicollinarity.[38]

We therefore rely on the dichotomous-social capital specification to test an interaction with organizational form. The model is

$$logit(h_{ij}) = \alpha_0 + \beta_0 D_i^{CB} + \beta_1 SC_{ij}^{high} + \beta_2 D_i^{CB} \cdot SC_{ij}^{high} + \delta Z_{ij}\,, \quad (7)$$

where D^{CB} and SC^{high} are dummy variables for the commercial bank form and high-level social capital banks respectively, and Z_{it} is a vector of the remaining control variables from Table 4 including the log-baseline hazard $(\alpha_1 \log(j) + \alpha_2[\log(j)]^2)$.[39] Table 11 shows the results. The coefficient on the social capital dummy, β_1, measures the differential effect of high social capital (as opposed to low) on savings banks' probability of exit. As before, this effect is negative and strongly significant (except for Donations which is borderline significant). The sum $\beta_1 + \beta_2$ is the corresponding differential effect of social capital for commercial banks. We test the hypothesis that $\beta_1 + \beta_2 = 0$, that is, that there is no difference in the probability of exit for commercial banks located in high vs. low social capital areas. As displayed in the table, we are unable to reject the null at conventional levels of significance (p-values are 0.39 and higher). We conclude that the effect of social capital does not seem to exist for banks where stakeholders do not play a pivotal role in governance.

[38] The correlations between the two terms lie between 0.95 and 0.99 for the different measures of social capital.

[39] In this specification, the correlations between $D_i^{CB} \cdot SC_{ij}^{high}$ and D_i^{CB} range from 0.39 to 0.59.

An alternative test of our hypothesis, is to explore the notion of Putnam (1993) that social capital matters because it improves the efficiency of collective institutions (see discussion in Section 2.). Compared with low social capital banks, banks in high social capital areas should obtain more deposits from the areas where they have branches, they should distribute more of their profits to the local community as gifts and should employ a more locally-oriented business strategy. In addition, we examine whether high social capital banks have more stable deposit-base in their home region.

We run panel regressions of the above three characteristics on the level of social capital of bank i including year dummies and the set of control variables from Table 4. Table 12 shows the results, using the first principal component measure of social capital. The regressions in the first three columns estimate the effect of social capital on the fraction of deposits raised in the banks' home regions. This information is available in the bank call reports at the regional level, of which there are 23, and we define a bank's local area as the region in which its head-quarter is placed. We show results with and without controls for time-varying bank performance measures. The effect of social capital is positive and significant at the 1 percent level, and robust to the inclusion of bank performance variables. The marginal effect of 21.38 implies that a one standard deviation increase in social capital translates into a 4.3 percentage point increase in local deposits, whereas the difference between the minimum and maximum level of social capital translates into an increase of 25.2 percent.[40] We measure the distribution of profits to the bank's local community by the fraction of annual surplus paid out as gifts or put aside in the gift fund for future distribution. The results shows that gifts increase in social capital. The coefficient of 0.23 implies that a one standard deviation increase in social capital increases distributions by 4.6 percentage points. The difference between banks with the minimum and the maximum level of social capital corresponds to a 27.1 percent increase. Finally, we consider the effect of social capital on the number of municipalities in which a bank has branches and the results show that higher social capital banks are present in fewer municipalities, consistent with them having a more local focus. A one standard deviation increase in social capital lowers the presence by 0.3 municipalities, the difference between minimum and maximum social capital lowers presence by 1.7 municipalities. These marginal effects should be seen in relation to the average presence which is 2.5 municipalities.

Lastly, we consider whether local depositors in high social capital-areas display more loyalty towards local savings banks. We first compare the sample variation of local deposit finance (as defined in Table 12) in banks with

[40] From 0.2 × 21.38 and (3.4-2.22)× 21.38 respectively, cf. Table 2.

above-average social capital to that of banks with below-average social capital. We compute the sample variance for each bank in turn. Above-average social capital banks (790 observations) have a mean variance of 743.8 with a standard error of 19.7, compared with a mean variance of 838.9 and standard error of 12.7 for the below-average banks (1871 observations). A t-test of unequal variances has a test statistic of 4.05, displaying a highly significant tendency for high-social capital banks to have a more stable local deposit base.

We then test whether the local funding of high-social capital banks is more stable in the presence of a common shock to the economy. We test whether high social capital banks have more loyal depositors by estimating whether the Norwegian banking crisis had a differential effect on high and low social capital banks' reliance on local deposits by estimating the specification by OLS

$$\text{DEPOSITS}_{it} = \alpha_1 SC_{it}^{high} + \beta_1 SC_{it}^{low} + \alpha_2 SC_{it}^{high} \cdot D_t^{crisis} + \beta_2 SC_{it}^{low} \cdot D_t^{crisis} + \delta' Z_{it} + \epsilon_{it}\,. \tag{8}$$

Equation (8) estimates a separate level of local funding for the high and low social capital banks, allowing for different levels during and outside the crisis period (we do not include time fixed effects because those would absorb the effect of the crisis), and we estimate whether the effect of the crisis differs for the two groups testing the null hypothesis that $\alpha_1 + \alpha_2$ equals $\beta_1 + \beta_2$. Table 13 shows the results. We use two different measures of the crisis period, a dummy equal to one in all crisis years, and a dummy equal to one only in the peak years of the crisis. The latter is the period where the crisis had become systemic and the large commercial banks were in default. The first two columns ("All banks") show that the coefficient estimate of the crisis' effect is negative for both high and low social capital banks, but it is only significant, and considerably larger, for the low social capital banks. The test that the level of local deposits during the crisis is the same for the two groups of banks is rejected at the 8 percent level. If we only consider the peak period of the crisis the results are unchanged, although the negative effect is increased especially for the low social capital banks. Although the crisis mostly affected commercial banks, some savings banks did face financial troubles and subsequently ceased to exist as independent banks. From the previous results we know that these banks are more predominant in the low social capital group of banks. We therefore check whether the results are driven by these banks being included in the sample by omitting all savings banks that received aid from the savings banks guarantee fund from the regressions altogether. The last two columns of the table reveals that the

omission of troubled banks strengthens the estimated differential effect both in magnitude and significance.

6.5 Bank-level financial ratios

In this final section, we attempt to uncover whether social capital affects savings banks' choice of business strategy by examining its impact on key financial ratios. We run GLS regressions of financial ratios on the right hand side variables from the survival analysis with two adjustments: (1) we allow banks' equity ratio, total assets, and fraction of commercial and industrial loans to vary over time instead of using the 1987-values, since these ratios will change as banks grow in size, and (2) we include lagged loan growth to control for differences in banks' lending policies. We include time fixed effects in all regressions to control for macroeconomic developments.

Table 14 displays the results from these regressions using the first principal component as the measure of social capital. We find that social capital does have an independent effect on key financial ratios: High social capital banks operate with lower returns on assets, with lower interest rate margins (including fees and provisions), and lower deposit rate margins. We also find some tentative evidence that loan rate margins are lower, although this result is not quite significant at conventional levels.

On the loan side, we see that the proportions of past due loans, leases, and guarantees in banks' loan portfolios are significantly lower for high-social capital banks. Norwegian regulation considers a loan, lease, or guarantee past due when repayments are 90 days or more behind schedule, prompting so-called "specified" loan loss provisions to be made from assessments of loss given default. When we consider the rate of recovery on past due loans, that is, the fraction of past due loans at the beginning of each year that move from past due-status to non-delinquent status during the course of that year, that ratio is also higher for high social capital banks, although marginally significant only. Historical data on past due loans and recoveries on past due loans do not go back as far in time as the data for the other variables, because the information was not collected by financial authorities. The shorter time series may explain the lower precision of these estimates.

Accounting variables are only rough indicators of business strategies and banks' objective functions. Nevertheless, our results are consistent with non-profit banks pursuing other objectives than the maximization of profit since high-social capital banks earn a lower return on assets. Despite this fact, high-social capital banks survive the longest (Tables 4–7), and the lower returns do not seem to be a product of higher loan losses (Table 14). Rather the

lower returns appear to be caused by lower interest rate margins, suggesting that these banks earn less rent.

It is possible that banks in high social capital areas make less risky loans and therefore earn lower returns and experience lower losses. To take this into account, we control in the regressions for the risk of individual banks' lending strategies by including lagged loan growth and the fraction of business loans in the banks' portfolios. Importantly, our finding that high social capital banks experience a higher recovery rate on past due loans and the fact that low, median, and high social capital banks carry a similar fraction of business loans in their portfolios (Table A4), are at odds with the suggestion that our results are due to less risky lending by these banks. Rather, the results are consistent with the high social capital savings banks pursuing both social and financial objectives.

7. Conclusion

Using data on Norwegian savings banks we provide evidence that social capital improves the viability of stakeholder-oriented firms in competitive industries. The presence of a large number of non-profit savings banks makes the Norwegian banking sector well-suited to explore this hypothesis, because savings banks are collectively governed by their stakeholders (local depositors, employees, and government councils).

Our main finding is that savings banks operating in communities with high social capital survive longer as independent non-profit firms. Depending on the measure of social capital, we estimate that a high level of social capital decreases the probability of a bank's disappearance by up to 20 percentage points and the effect is especially strong for banks with a low level of equity capital. Our results also show that social capital does not affect the survival of commercial banks whose organizational form assigns little role for collective action by stakeholders in governance.

We suggest this relationship arises because savings banks are collectively governed by stakeholder groups from their areas of location, and social capital improves the efficiency of stakeholder governance by increasing the demand for and the supply of savings banks' services (Putnam,1993).

We measure the efficiency of stakeholder governance by the fraction of deposits raised in the bank's home region, the loyalty of local depositors in the home region, the fraction of profits distributed for altruistic purposes to the local community, and the geographical focus of the banks' branch networks. Our findings show that high social capital banks raise more deposits locally, have a more stable local deposit base, operate more local branch networks,

and distribute a higher proportion of their surplus for altruistic purposes locally. Furthermore, we find that efficient stakeholder governance does not necessarily entail better financial performance: high social capital banks earn lower returns on assets and have lower interest rate margins suggesting that financial performance is unlikely to be their overriding objective.

In summary, our results provide evidence that social capital matters for the continued existence of stakeholder-oriented firms in the banking industry. By suggesting a link between social capital and the efficiency of stakeholder-governance, we offer a new perspective on the survival of stakeholder-oriented firms in competitive markets.

References

Allen, F., Carletti, E. and Marquez, R. (2015) Stakeholder governance, competition, and firm value, *Review of Finance* **19**, 1315–1346.

Allison, P. D. (1982) Discrete-time methods for the analysis of event data, *Sociological Methodology* **13**, 61–98.

Bertrand, M., Schoar, A. and Thesmar, D. (2007) Banking deregulation and industry structure: Evidence from the French banking reforms of 1985, *Journal of Finance* **62**, 597–628.

Bøhren, Ø. and Josefsen, M. G. (2013) Shareholder rights and economic performance: The profitability of nonprofits, *Journal of Banking and Finance* **37**, 4073–4086.

Bottazzi, L., Da Rin, M. and Hellmann, T. (2015) The importance of trust for investment: Evidence from venture capital, Unpublished working paper, European Corporate Governance Institute.

Brown, C. C. (1975) On the use of indicator variables for studying the time dependence of parameters in a response-time model, *Biometrics* **31**, 863–872.

Bryhni, F., Bjørnsen, T., Breck, O., Sandvik, K. and Tjomsland, S. (1985) *Sparebankloven med kommentarer (The Savings Bank Law with Comments).* Universitetsforlaget AS, Oslo.

Coleman, J. S. (1988) Social capital in the creation of human capital, *American Journal of Sociology* **94**, S95–S120.

Demyanyk, Y., Ostergaard, C. and Sørensen, B. E. (2007) U.S. banking deregulation, small businesses, and interstate insurance of personal income, *Journal of Finance* **62**, 2763–2801.

Durlauf, S. N. and Fafchamps, M. (2005) Social capital, in: P. Aghion and S. N. Durlauf (eds), *Handbook of Economic Growth,* North-Holland, Amsterdam.

Ewerhart, C. and Zubrickas, R. (2013) A theory of cooperative banking based on social preferences, Unpublished working paper, University of Zurich.

Fauver, L. and Fuerst, M. E. (2006) Does good corporate governance include employee representation? Evidence from German corporate boards, *Journal of Financial Economics* **82**, 673–710.

Fuertes, A., Izzeldin, M., Ongena, S. and Pappas, V. (2013) Do islamic banks "live free and die harder?", Unpublished working paper, City University London.

Giannetti, M. and Yafeh, Y. (2012) Do cultural differences between contracting parties matter? Evidence from syndicated bank loans, *Management Science* **58**, 365–383.

Glaeser, E. L., Laibson, D. I., Scheinkman, J. A. and Soutter, C. L. (2000) Measuring trust, *Quarterly Journal of Economics* **115**, 811–846.
Guiso, L., Sapienza, P. and Zingales, L. (2004) The role of social capital in financial development, *American Economic Review* **94**, 525–556.
Guiso, L., Sapienza, P. and Zingales, L. (2008) Trusting the stock market, *Journal of Finance* **63**, 2557–2600.
Guiso, L., Sapienza, P. and Zingales, L. (2009) Cultural biases in economic exchange?, *Quarterly Journal of Economics* **124**, 1095–1131.
Hansmann, H. B. (1996) *The ownership of entreprise.* Harvard University Press, Cambridge, Massachusetts.
Hart, O. and Moore, J. (1998) Cooperatives vs. outside ownership, NBER Working Paper No. 6421.
Høst, S. (2005) Det lokale avismønsteret (The local pattern of newspaper circulation), IJ-Rapport 3/2005, Institutt for Journalistikk, Frederikstad.
Illueca, M., Norden, L. and Udell, G. (2013) Does culture affect economic outcomes, *Review of Finance* **18**, 1–41.
Jayaratne, J. and Strahan, P. E. (1997) The finance-growth nexus: Evidence from bank branch deregulation, *Quarterly Journal of Economics* **111**, 639–670.
Jensen, M. C. (2001) Value maximization, stakeholder theory, and the corporate objective function, *Journal of Applied Corporate Finance* **14**, 8–21.
Knack, S. and Keefer, P. (1997) Does social capital have an economic payoff? A cross-country investigation, *Quarterly Journal of Economics* **112**, 1251–1288.
Mistrulli, P. E. and Vacca, V. (2014) Social capital and the cost of credit in a crisis, Unipublished Manuscript, Bank of Italy.
Moe, T. G., Solheim, J. A. and Vale, B. (2004) *The Norwegian Banking Crisis.* Norges Bank, Oslo.
Norwegian Official Reports (1992) Report by the commision on the banking crisis, Royal Ministry of Finance and Customs, Oslo.
Putnam, R. D. (1993) *Making democracy work: Civic traditions in modern Italy.* Princeton University Press, Princeton, New Jersey.
Putnam, R. D. (1995) Tuning in, Tuning out: The strange disapperance of social capital in America, *PS: Political Science and Politics* **28**, 664–683.
Putnam, R. D. (2000) *Bowling alone. The collapse and revival of American community.* Simon and Shuster Paperbacks, New York, New York.
Rey, P. and Tirole, J. (2007) Financing and access in cooperatives, *International Journal of Industrial Organization* **25**, 1061–1088.
Rice, T. and Strahan, P. E. (2010) Does credit competition affect small-firm finance?, *Journal of Finance* **65**, 861–889.
Rokkan, S. (1967) Geography, religion, and social class: Crosscutting cleavages in Norwegian politics, in: S. M. Lipset and S. Rokkan (eds), *Party systems and voter alignments: Cross-national perspectives*, The Free Press, New York.
Schmidt, R. H. (2009) The political debate about savings banks, *Smalenbach Business Review* **61**, 366–392.
Thue, L. (2014) *Forandring og Forankring. Sparebankerne i Norge 1822–2014 (Change and Foundation. Savings Banks in Norway 1822–2014),* Universitetsforlaget, Oslo.
Tirole, J. (2001) Corporate governance, *Econometrica* **123**, 905–950.

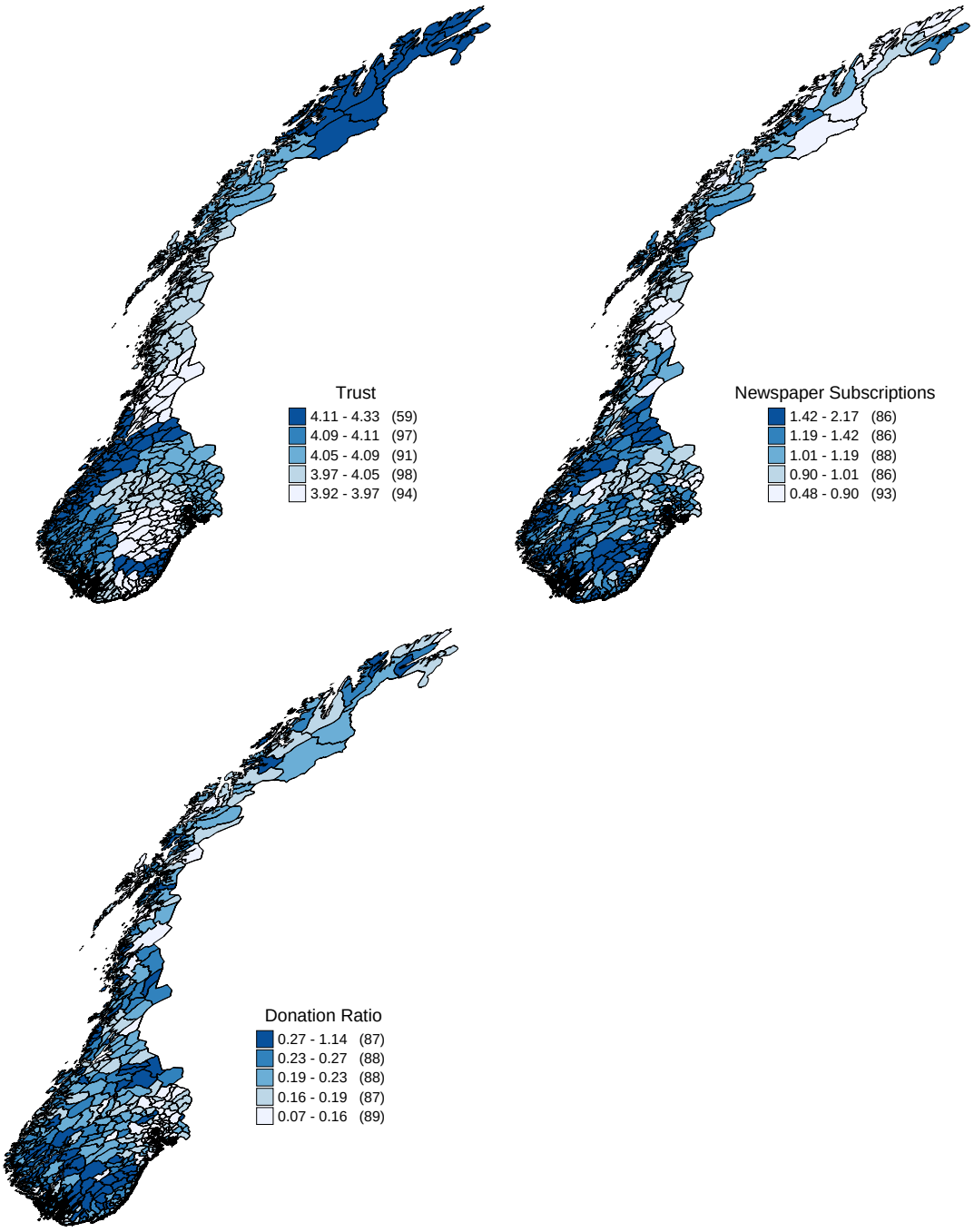

Fig. 1. Variation in Social Capital across Norwegian Municipalities. The maps present variation in Trust, Newspaper Subscriptions, and Donation Ratio across Norwegian municipalities in 1987, the first sample year. Different values of the variables are indicated by different colors; darker colors refer to higher levels of Trust, Newspaper Subscriptions, and Donation Ratio. Value labels are presented separately for each variable and the number of municipalities at each level is indicated in parenthesis.

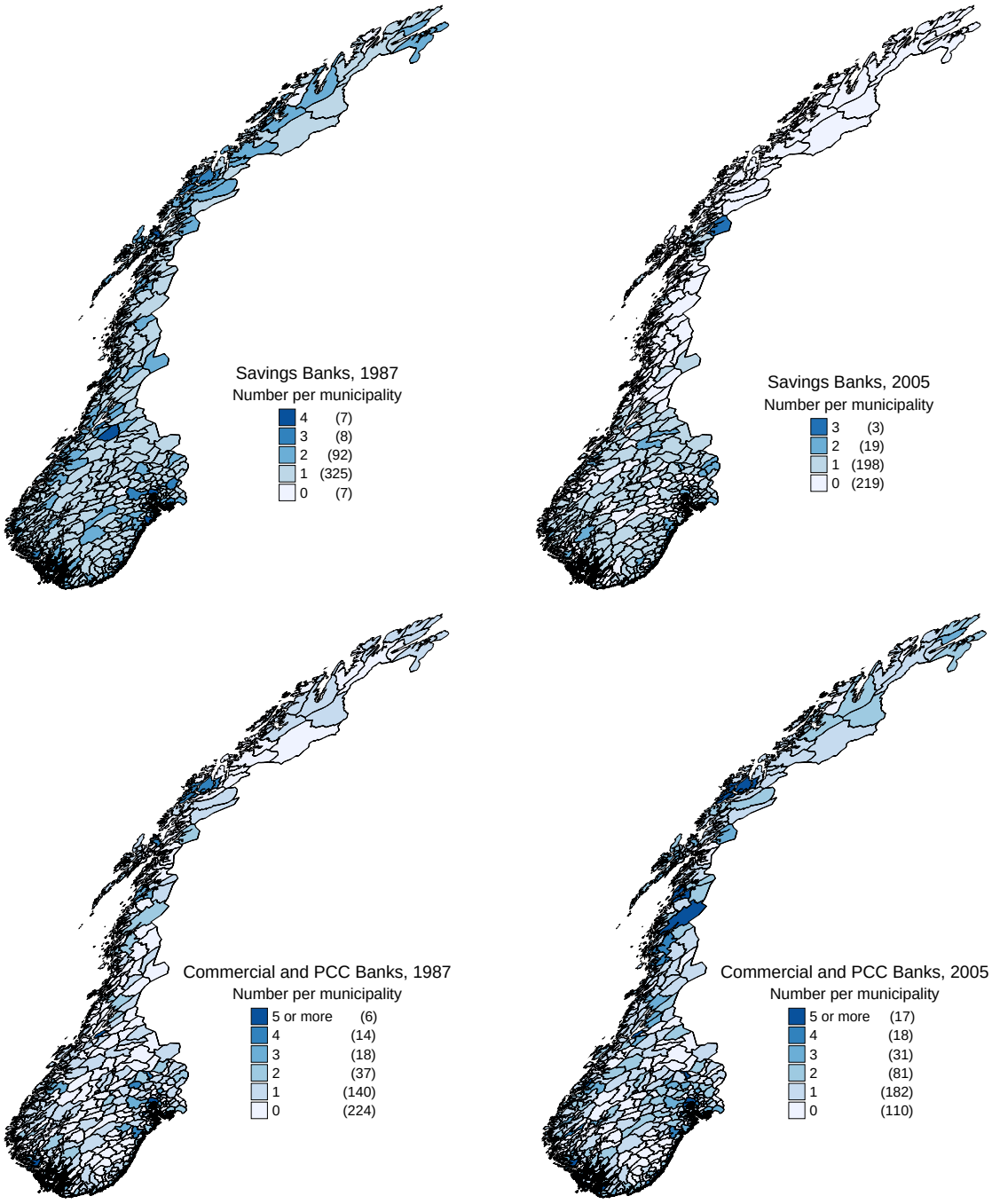

Fig. 2. Savings and Commercial Bank Presence across Norwegian Municipalities, 1987-2005. The maps present variation in the number of savings and commercial banks present across Norwegian municipalities in 1987, the first sample year, and 2005, the last sample year. Different values of the variables are indicated by different colors; darker colors refer to higher numbers of banks present. Value labels are presented separately for each variable and the number of municipalities at each level is indicated in parenthesis.

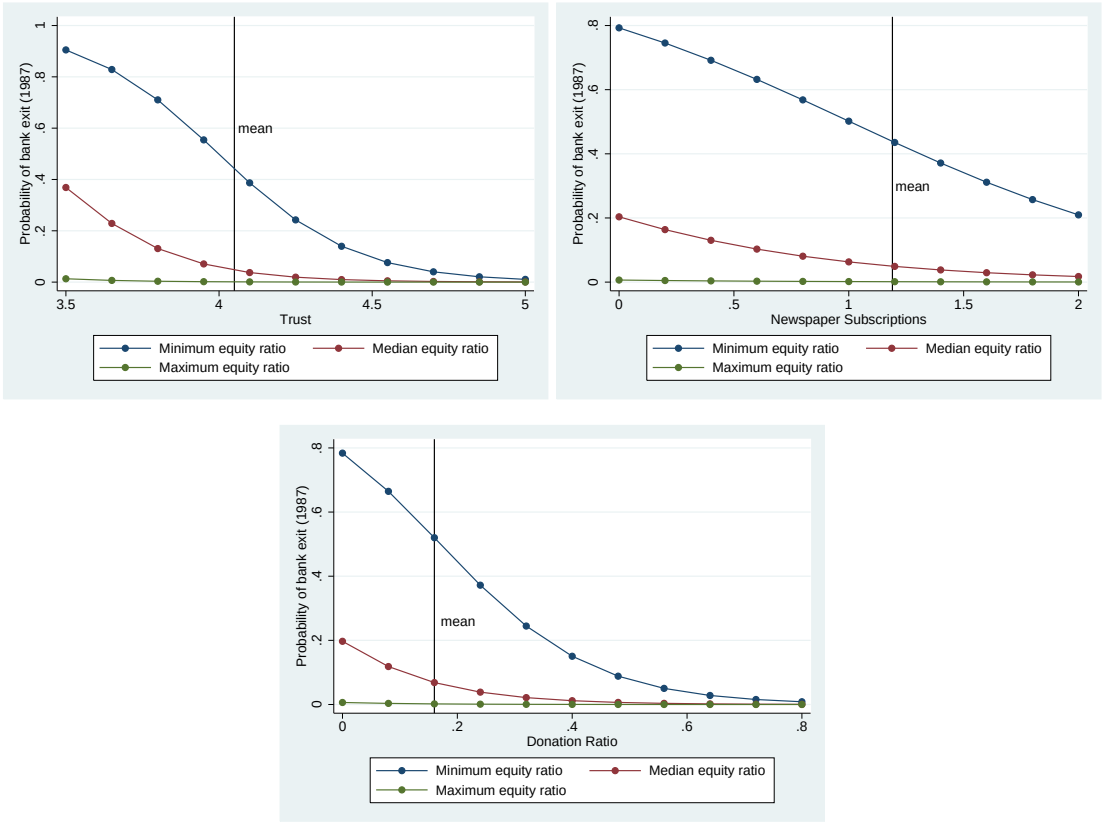

Fig. 3. Effect of Social Capital on Banks' Probability of Exit for Different Equity Ratios. The figures show the effect of the social capital measures Trust, Newspaper Subscriptions, and Donation Ratio n the probability of savings bank exit in 1987 for hypothetical banks with different values of Equity Ratio (minimum, median, and maximum), according to the estimates in Table 4, Models (1)–(3). The minimum, median, and maximum values of Equity Ratio equal 3.2, 9.7, and 20.1 respectively. All other variables are set equal to their mean values.

Table 1 The Norwegian Banking Sector, Characteristics by Organizational Form in 1987 and 2005

	1987			2005		
	Savings Banks	Commercial Banks	PCC Banks	Savings Banks	Commercial Banks	PCC Banks
Number of banks	191	22	0	102	3	23
Average number of branches per bank	7.6	32.6	0	3.4	31.7	17.3
Number of single office banks	60	6	0	34	1	2
Number of small banks (< 5 branches)	140	6	0	89	1	7
Number of large banks (> 25 branches)	14	6	0	3	1	5
Total number of branches	1,445	718	0	342	415	397
Fraction of branches in below median population municipalities (percent)	28.8	5.8	0	34.2	7.5	31.4
Fraction of branches in above median population municipalities (percent)	71.2	94.2	0	65.8	92.5	68.6

Summary statistics of Norwegian banks and bank branches by organizational form in 1987 and 2005 as well as their distribution on municipality population. Four commercial banks operating as Norwegian branches of a foreign parent company in 2005 are excluded from the figures for commercial banks.

Table 2 Descriptive Statistics of Bank-Level Social Capital Variables

	Obs.	**Median**	**Mean**	**Std.dev.**	**Min.**	**Max.**
Trust	2,412	4.07	4.05	0.08	3.92	4.33
Newspaper Subscriptions	2,412	1.17	1.19	0.27	0.50	1.93
Donation Ratio	2,412	0.15	0.16	0.07	0.00	0.48
Principal Component	2,412	2.81	2.80	0.20	2.22	3.40

Descriptive statistics for the bank-level social capital variables used in the regressions, computed as described in Equation (5). Trust is an index of the level of trust based on the World Values Survey in 1990 measured at the county-level. Newspaper Subscriptions is the average number of subscriptions per household measured at the municipality level. Donation Ratio is the door-collected contribution to charity per capita, divided by average municipality income and multiplied by 1000 for scaling, measured at the municipality level. Principal Component is the first principal component for the variables Trust, Newspaper Subscriptions, and Donatio Ratio. The sample period is 1987–2005.

Table 3 Empirical Survival and Hazard Functions, 1987-2005

Year	Number of savings banks present beg. of year	Number of savings banks that exit during year	Survival function	Interval hazard function
1987	191	19	90%	10%
1988	172	14	83%	8%
1989	158	11	77%	7%
1990	147	11	71%	7%
1991	136	7	68%	5%
1992	129	4	65%	3%
1993	125	0	65%	0%
1994	125	1	65%	1%
1995	124	2	64%	2%
1996	122	3	62%	2%
1997	119	2	61%	2%
1998	117	0	61%	0%
1999	117	8	57%	7%
2000	109	2	56%	2%
2001	107	3	54%	3%
2002	104	0	54%	0%
2003	104	0	54%	0%
2004	104	2	53%	2%
2005	102	0	53%	0%

Summary statistics of savings banks' survival and hazard rates. The first column indicates each year (interval) in the sample. The second column gives the number of savings banks left in the sample at the beginning of each year. The third column shows the number of exits during each year. The fourth column shows the Kaplan-Meier survival function estimate for year j, which equals the proportion of savings banks that survive until the end of year j. The fifth column shows the estimated interval hazard function for year j, which equals the number of savings banks that exit in year j, divided by the number of savings banks in the sample at the beginning of year j.

Table 4 Effect of Social Capital on Savings Banks' Probability of Exit

	Continuous Social Capital					Dichotomous Social Capital				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Trust	-4.52	–	–	–	-4.70	-0.67	–	–	–	-0.53
	(0.01)	–	–	–	(0.01)	(0.00)	–	–	–	(0.03)
Newspaper Subscriptions	–	-1.33	–	–	-1.25	–	-0.78	–	–	-0.70
	–	(0.01)	–	–	(0.01)	–	(0.00)	–	–	(0.01)
Donation Ratio	–	–	-7.55	–	-9.04	–	–	-0.81	–	-0.57
	–	–	(0.03)	–	(0.01)	–	–	(0.02)	–	(0.13)
Principal Component	–	–	–	-2.64	–	–	–	–	-0.73	–
	–	–	–	(0.00)	–	–	–	–	(0.01)	–
Equity Ratio (1987)	-0.39	-0.38	-0.37	-0.38	-0.40	-0.39	-0.38	-0.39	-0.39	-0.40
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log(Total Assets) (1987)	0.11	0.05	0.13	0.04	0.09	0.10	0.07	0.12	0.06	0.06
	(0.38)	(0.71)	(0.28)	(0.75)	(0.44)	(0.39)	(0.59)	(0.33)	(0.65)	(0.61)
Fraction of C&I Loans (1987)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	(0.01)	(0.01)	(0.02)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)
Bank Asset Competition	1.61	1.34	1.63	1.32	1.58	1.58	1.43	1.62	1.53	1.44
	(0.10)	(0.15)	(0.08)	(0.16)	(0.08)	(0.10)	(0.12)	(0.08)	(0.11)	(0.13)
Only Bank in Home Municipality	0.79	0.63	0.75	0.60	0.68	0.69	0.66	0.75	0.71	0.59
	(0.14)	(0.23)	(0.16)	(0.26)	(0.19)	(0.20)	(0.22)	(0.16)	(0.19)	(0.27)
Log(Population)	-0.54	-0.50	-0.76	-0.58	-0.86	-0.52	-0.49	-0.63	-0.51	-0.53
	(0.08)	(0.09)	(0.01)	(0.05)	(0.01)	(0.08)	(0.10)	(0.03)	(0.09)	(0.08)
Population with High Education	-0.16	-0.14	-0.06	-0.08	0.03	-0.12	-0.14	-0.17	-0.14	-0.14
	(0.53)	(0.60)	(0.82)	(0.75)	(0.92)	(0.64)	(0.59)	(0.50)	(0.60)	(0.61)
Population over 67 Years	0.10	0.09	0.12	0.07	0.06	0.11	0.09	0.12	0.08	0.06
	(0.14)	(0.19)	(0.05)	(0.31)	(0.38)	(0.08)	(0.19)	(0.07)	(0.23)	(0.38)
Population in Work Force	-0.04	-0.05	-0.10	-0.08	-0.14	-0.02	-0.06	-0.07	-0.08	-0.08
	(0.65)	(0.49)	(0.23)	(0.33)	(0.09)	(0.76)	(0.41)	(0.38)	(0.31)	(0.31)
Median Income	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.01
	(0.03)	(0.08)	(0.02)	(0.14)	(0.20)	(0.05)	(0.07)	(0.02)	(0.07)	(0.32)
Median Wealth	-0.01	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.01	-0.00	0.00
	(0.44)	(0.76)	(0.56)	(0.85)	(0.80)	(0.71)	(0.94)	(0.41)	(0.75)	(0.75)
Unemployment (lagged)	-0.17	-0.16	-0.13	-0.15	-0.10	-0.17	-0.17	-0.12	-0.16	-0.15
	(0.24)	(0.24)	(0.36)	(0.29)	(0.49)	(0.22)	(0.23)	(0.40)	(0.24)	(0.31)
Reported Breaches of Law	-0.01	0.02	0.01	0.01	-0.01	-0.01	0.02	0.01	0.02	0.00
	(0.83)	(0.73)	(0.87)	(0.81)	(0.78)	(0.76)	(0.68)	(0.77)	(0.68)	(0.99)
State Owned Enterprises	2.90	4.00	1.78	4.25	3.45	2.33	4.62	3.20	4.28	4.28
	(0.30)	(0.17)	(0.53)	(0.15)	(0.25)	(0.41)	(0.11)	(0.25)	(0.14)	(0.14)
Urban Population	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	(0.26)	(0.27)	(0.19)	(0.29)	(0.31)	(0.22)	(0.29)	(0.22)	(0.28)	(0.34)
$\log(j)$	0.26	0.35	0.57	0.39	0.58	0.26	0.40	0.45	0.41	0.47
	(0.59)	(0.48)	(0.26)	(0.43)	(0.26)	(0.59)	(0.41)	(0.34)	(0.40)	(0.35)
$\log(j)$ squared	-0.31	-0.36	-0.53	-0.40	-0.55	-0.32	-0.39	-0.45	-0.40	-0.44
	(0.08)	(0.04)	(0.01)	(0.03)	(0.01)	(0.08)	(0.03)	(0.01)	(0.02)	(0.02)
α_0	19.92	4.66	7.80	13.34	34.60	0.82	3.67	4.62	5.16	7.34
	(0.04)	(0.43)	(0.23)	(0.05)	(0.00)	(0.89)	(0.53)	(0.47)	(0.39)	(0.26)
Number of Observations	2,412	2,412	2,412	2,412	2,412	2,412	2,412	2,412	2,412	2,412
Pseudo-R^2	0.14	0.14	0.14	0.15	0.16	0.14	0.15	0.14	0.14	0.16
LR-Test 1 (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LR-Test 2 (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Results are from bank level logit regressions of y_{ij} on H_{0j} and x_{ij}, where y_{ij} equals one if bank i exits in year j and zero otherwise, and H_{0j} is a baseline hazard function. The baseline hazard function takes the form $\text{H}_{0j} = \alpha_0 + \alpha_1 \log(\text{J}) + \alpha_2 \Big[\log(\text{J})\Big]^2$. Trust is an index of the level of trust based on the World Values Survey in 1990, measured at the county-level. Newspaper Subscriptions is the average number of subscriptions per household measured at the municipality level. Donation Ratio is the door-collected contribution to charity per capita, divided by average municipality income and multiplied by 1000 for scaling, measured at the municipality level. Principal Component is the first principal component for the variables Trust, Newspaper Subscriptions, and Donation Ratio. In Models (1)–(5), the social capital variables are continuous, in Models (6)–(10) the variables are dummies indicating an above-average level of social capital. Refer to the Data Appendix for remaining variable definitions. LR-test 1 is a Likelihood Ratio test of the joint significance of $\mathbf{x_{ij}}$. LR-test 2 is a Likelihood Ratio test of the joint significance of $\log(j)$ and $\log(j)^2$. The sample is 1987–2005. Standard errors are corrected for clustering at the bank level, and p-values are reported in parentheses.

Table 5 Effect of Social Capital on Savings Banks' Probability of Exit: Baseline Hazard of Time Indicators

	Continuous Social Capital					Dichotomous Social Capital				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Trust	-4.76	–	–	–	-4.90	-0.69	–	–	–	-0.57
	(0.00)	–	–	–	(0.00)	(0.00)	–	–	–	(0.02)
Newspaper Subscriptions	–	-1.38	–	–	-1.32	–	-0.80	–	–	-0.73
	–	(0.01)	–	–	(0.01)	–	(0.00)	–	–	(0.00)
Donation Ratio	–	–	-7.21	–	-9.22	–	–	-0.81	–	-0.62
	–	–	(0.06)	–	–	–	–	(0.03)	–	(0.09)
Principal Component	–	–	–	-2.72	–	–	–	–	-0.74	–
	–	–	–	(0.00)	–	–	–	–	(0.01)	–
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	1,962	1,962	1,962	1,962	1,962	1,962	1,962	1,962	1,962	1,962
Pseudo-R^2	0.14	0.14	0.14	0.15	0.16	0.14	0.15	0.14	0.14	0.16
LR-Test 1 (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LR-Test 2 (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Results are from bank level logit regressions of y_{ij} on H_{0j} and x_{ij}, where y_{ij} equals one if bank i exits in year j and zero otherwise, and H_{0j} is a baseline hazard function of the form $\text{H}_{0j} = \alpha_0 + \sum_j^{\text{J}-1} \delta_j \text{D}_j$, where D_j is a dummy for interval j and J is the overall number of intervals of the sample (estimated α_0 and interval dummies are not reported). D_j is omitted from the regression if no bank exit occurs in interval j. Trust is an index of the level of trust based on the World Values Survey in 1990 measured at the county-level. Newspaper Subscriptions is the average number of subscriptions per household measured at the municipality level. Donation Ratio is the door-collected contribution to charity per capita, divided by average municipality income and multiplied by 1000 for scaling, measured at the municipality level. Principal Component is the first principal component for the variables Trust, Newspaper Subscriptions, and Donatio Ratio. In Models (1)–(5), the social capital variables are continuous, in Models (6)–(10) the variables are dummies indicating an above-average level of social capital. Control variables are similar to those in Table 4. LR-test 1 is a Likelihood Ratio test of the joint significance of $\mathbf{x_{ij}}$. LR-test 2 is a Likelihood Ratio test of the joint significance of $\{\text{D}_j\}_{j=2}^{\text{J}}$. The sample is 1987–2005. Standard errors are corrected for clustering at the bank level, and p-values are reported in parentheses.

Table 6 Effect of Social Capital on Savings Banks' Probability of Exit: Robustness to Alternative Measures of Bank Competition

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Trust	-4.37	–	–	–	-4.40	–	–	–	-4.19	–	–	–
	(0.01)	–	–	–	(0.01)	–	–	–	(0.01)	–	–	–
Newspaper Subscriptions	–	-1.41	–	–	–	-1.38	–	–	–	-1.34	–	–
	–	(0.01)	–	–	–	(0.01)	–	–	–	(0.01)	–	–
Donation Ratio	–	–	-7.10	–	–	–	-7.12	–	–	–	-7.19	–
	–	–	(0.05)	–	–	–	(0.05)	–	–	–	(0.04)	–
Principal Component	–	–	–	-2.70	–	–	–	-2.70	–	–	–	-2.60
	–	–	–	(0.00)	–	–	–	(0.00)	–	–	–	(0.00)
Number of Competing Banks	0.09	0.11	0.11	0.10	–	–	–	–	–	–	–	–
	(0.39)	(0.30)	(0.33)	(0.34)	–	–	–	–	–	–	–	–
Branch Competition	–	–	–	–	0.10	0.08	0.17	0.03	–	–	–	–
	–	–	–	–	(0.68)	(0.73)	(0.50)	(0.90)	–	–	–	–
Commercial Bank Competition	–	–	–	–	–	–	–	–	-1.30	-1.42	-1.64	-1.27
	–	–	–	–	–	–	–	–	(0.19)	(0.15)	(0.09)	(0.20)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2,412	2,412	2,412	2,412	2,412	2,412	2,412	2,412	2,412	2,412	2,412	2,412
Pseudo-R^2	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.15
LR-Test 1 (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LR-Test 2 (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Results are from bank level logit regressions of y_{ij} on H_{0j} and x_{ij}, where y_{ij} equals one if bank i exits in year j and zero otherwise, and H_{0j} is a baseline hazard function of the form $\text{H}_{0j} = \alpha_0 + \alpha_1 \log(\text{J}) + \alpha_2 \Big[\log(\text{J})\Big]^2$. Trust is an index of the level of trust based on the World Values Survey in 1990 measured at the county-level. Newspaper Subscriptions is the average number of subscriptions per household measured at the municipality level. Donation Ratio is the door-collected contribution to charity per capita, divided by average municipality income and multiplied by 1000 for scaling, measured at the municipality level. Principal Component is the first principal component for the variables Trust, Newspaper Subscriptions, and Donation Ratio. All social capital variables are continuous. Three bank-level competition variables measure the extent of competing banks operating in areas where bank i is active. The variables are aggregated over the municipalities covered by bank i and weighted by the fraction of bank i's branches located in each municipality. Number of Competing Banks (columns (1)–(4)) is the weighted average number of competing banks per 10,000 inhabitants. Branch Competition (columns (5)–(8)) is the weighted average number of competing banks' branches per 10,000 inhabitants. Commercial Bank Competition (columns (9)–(12)) is the weighted average number of commercial banks per 10,000 inhabitants. Control variables are similar to those in Table 4. Refer to the Data Appendix for remaining variable definitions. LR-test 1 is a Likelihood Ratio test of the joint significance of $\mathbf{x_{ij}}$. LR-test 2 is a Likelihood Ratio test of the joint significance of $\log(j)$ and $\log(j)^2$. The sample is 1987–2005. Standard errors are corrected for clustering at the bank level, and p-values are reported in parentheses.

Table 7 Effect of Social Capital on Savings Banks' Probability of Exit: Robustness to Timing of Capital Injections During The Norwegian Banking Crisis

	Continuous Social Capital				Dichotomous Social Capital			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Trust	-4.37	–	–	–	-0.66	–	–	–
	(0.01)	–	–	–	(0.01)	–	–	–
Newspaper Subscriptions	–	-1.43	–	–	–	-0.83	–	–
	–	(0.00)	–	–	–	(0.00)	–	–
Donation Ratio	–	–	-7.11	–	–	–	-0.69	–
	–	–	(0.04)	–	–	–	(0.06)	–
Principal Component	–	–	–	-2.73	–	–	–	-0.79
	–	–	–	(0.00)	–	–	–	(0.00)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2,391	2,391	2,391	2,391	2,391	2,391	2,391	2,391
Pseudo-R^2	0.15	0.15	0.14	0.15	0.15	0.15	0.14	0.15
LR-Test 1 (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LR-Test 2 (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Results are from bank level logit regressions of y_{ij} on H_{0j} and x_{ij}, where y_{ij} equals one if bank i exits in year j and zero otherwise, and H_{0j} is a baseline hazard function. The year of exit for troubled banks is redefined as the first year in which they receive capital from the savings banks guarantee fund. The baseline hazard function takes the form $\text{H}_{0j} = \alpha_0 + \alpha_1 \log(\text{J}) + \alpha_2 \left[\log(\text{J})\right]^2$. Trust is an index of the level of trust based on the World Values Survey in 1990 measured at the county-level. Newspaper Subscriptions is the average number of subscriptions per household measured at the municipality level. Donation Ratio is the door-collected contribution to charity per capita, divided by average municipality income and multiplied by 1000 for scaling, measured at the municipality level. Principal Component is the first principal component for the variables Trust, Newspaper Subscriptions, and Donation Ratio. In Models (1)–(4), the social capital variables are continuous, in Models (5)–(8) the variables are dummies indicating an above-average level of social capital. Control variables are similar to those in Table 4. Refer to the Data Appendix for remaining variable definitions. LR-test 1 is a Likelihood Ratio test of the joint significance of $\mathbf{x_{ij}}$. LR-test 2 is a Likelihood Ratio test of the joint significance of $\log(j)$ and $\log(j)^2$. The sample is 1987–2005. Standard errors are corrected for clustering at the bank level and p-values are reported in parentheses.

Table 8 Effect of Social Capital on Savings Banks' Probability of Exit: Robustness to Time-Varying Bank Performance Measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Trust	-3.37	–	–	–	-5.65	–	–	–
	(0.11)	–	–	–	(0.27)	–	–	–
Newspaper Subscriptions	–	-2.39	–	–	–	-3.64	–	–
	–	(0.00)	–	–	–	(0.02)	–	–
Donation Ratio	–	–	-16.20	–	–	–	-25.54	–
	–	–	(0.01)	–	–	–	(0.03)	–
Principal Component	–	–	–	-4.30	–	–	–	-6.90
	–	–	–	(0.00)	–	–	–	(0.01)
Equity Ratio (lagged)	-22.00	-24.11	-25.52	-24.57	-34.66	-37.21	-39.38	-37.01
	(0.09)	(0.05)	(0.07)	(0.04)	(0.00)	(0.00)	(0.00)	(0.00)
Return on Assets (lagged)	-0.80	-0.79	-0.76	-0.79	-1.01	-1.03	-1.00	-1.03
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Past Due Loans (lagged)	–	–	–	–	-15.65	-13.46	-14.67	-14.84
	–	–	–	–	(0.22)	(0.33)	(0.26)	(0.30)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2,048	2,048	2,048	2,048	1,524	1,524	1,524	1,524
Pseudo-R^2	0.30	0.31	0.31	0.32	0.32	0.33	0.33	0.35
LR-Test 1 (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LR-Test 2 (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Results are from bank level logit regressions of y_{ij} on H_{0j} and x_{ij}, where y_{ij} equals one if bank i exits in year j and zero otherwise, and H_{0j} is a baseline hazard function of the form $\mathrm{H}_{0j} = \alpha_0 + \alpha_1 \log(\mathrm{J}) + \alpha_2 \left[\log(\mathrm{J})\right]^2$. Trust is an index of the level of trust based on the World Values Survey in 1990 measured at the county-level. Newspaper Subscriptions is the average number of subscriptions per household measured at the municipality level. Donation Ratio is the door-collected contribution to charity per capita, divided by average municipality income and multiplied by 1000 for scaling, measured at the municipality level. Principal Component is the first principal component for the variables Trust, Newspaper Subscriptions, and Donation Ratio. All social capital variables are continuous. Control variables are similar to those in Table 4. Refer to the Data Appendix for remaining variable definitions. The coefficients on "Return-on-Assets (lagged)" are multiplied by 100 for expositional reasons. LR-test 1 is a Likelihood Ratio test of the joint significance of $\mathbf{x_{ij}}$. LR-test 2 is a Likelihood Ratio test of the joint significance of $\log(j)$ and $\log(j)^2$. The sample is 1987–2005. Standard errors are corrected for clustering at the bank level and p-values are reported in parentheses.

Table 9 Empirical Survival and Hazard Functions: Commercial Banks, 1987-2005

Year	Number of commercial banks present beg. of year	Number of commercial banks that exit during year	Survival function	Interval hazard function
1987	22	3	87%	14%
1990	19	6	59%	32%
1991	13	1	55%	8%
1993	12	2	45%	17%
1998	10	2	36%	20%
1999	8	1	32%	12%
2000	7	2	23%	29%
2002	5	2	14%	40%
2005	3	0	14%	0%

Summary statistics of commercial banks' survival and hazard rates. The first column indicates each year (interval) in the sample. The second column gives the number of commercial banks left in the sample at the beginning of each year. The third column shows the number of exits during each year. The fourth column shows the Kaplan-Meier survival function estimate for year j, which equals the proportion of commercial banks that survive until the end of year j. The fifth column shows the estimated interval hazard function for year j, which equals the number of commercial banks that exit in year j, divided by the number of commercial banks in the sample at the beginning of year j.

Table 10 Parsimonious Survival Models for Savings Banks and Commercial Banks

	Savings Banks				Commercial Banks			
Level of social capital	Number of banks in 1987	Fraction of banks	Estimated parameter on social capital	Fitted hazard	Number of banks in 1987	Fraction of banks	Estimated parameter on social capital	Fitted hazard
High	62	0.3	-2.64 (0.00)	0.07	1	0.0	–	–
Middle-High	52	0.3	-2.27 (0.00)	0.09	4	0.2	-1.73 (0.06)	0.15
Middle-Low	43	0.2	-1.83 (0.00)	0.14	8	0.4	-2.12 (0.02)	0.11
Low	34	0.2	-1.76 (0.00)	0.15	9	0.4	-2.41 (0.00)	0.08
Total banks	191				22			

Results are from bank level logit regressions of y_{ij} on $\text{D}_{k,ij}$, $\log(j)$, and $\left[\log(j)\right]^2$, where y_{ij} equals one if bank i exits in year j and zero otherwise, and the first term estimates constant rates of exit that differ according to four levels of social capital ("Low", "Middle-Low", "Middle-High", and "High") corresponding to the quartiles of the distribution of social capital over all municipalities. D_k is an indicator variable equal to one if the social capital of bank i in year j belongs to level k. The last two terms capture time variation in the rate of exit. Social capital is measured as the first principal component for the variables Trust, Newspaper Subscriptions, and Donation Ratio. Regressions with savings banks contain 2,412 observations and regressions with commercial banks contain 184 observations. The sample is 1987–2005. Standard errors are corrected for clustering at the bank level and p-values are reported in parentheses.

Table 11 Effect of Social Capital on the Probability of Exit: Savings Banks vs. Commercial Banks

	(1)	(2)	(3)	(4)
Trust	-0.60	–	–	–
	(0.01)	–	–	–
Trust × Commercial Bank Dummy	1.15	–	–	–
	(0.13)	–	–	–
Newspaper Subscriptions	–	-0.75	–	–
	–	(0.00)	–	–
Newspaper Subscriptions × Commercial Bank Dummy	–	1.05	–	–
	–	(0.22)	–	–
Donation Ratio	–	–	-0.52	–
	–	–	(0.12)	–
Donation Ratio × Commercial Bank Dummy	–	–	0.86	–
	–	–	(0.20)	–
Principal Component	–	–	–	-0.71
	–	–	–	(0.01)
Principal Component × Commercial Bank Dummy	–	–	–	0.88
	–	–	–	(0.28)
α_0	-0.25	2.55	2.01	3.90
	(0.96)	(0.65)	(0.74)	(0.50)
Commercial Bank Dummy	-0.73	-0.49	-0.57	-0.45
	(0.20)	(0.27)	(0.28)	(0.36)
Control Variables	Yes	Yes	Yes	Yes
Number of Observations	2,612	2,612	2,612	2,612
Pseudo-R^2	0.11	0.11	0.10	0.11
Rate of exit equal for commercial banks in high and low social capital areas (p-value)	0.39	0.70	0.63	0.82

Results are from bank level logit regressions of y_{ij} on H_{0j} and x_{ij}, where y_{ij} equals one if bank i exits in year j and zero otherwise. H_{0j} is a baseline hazard function of the form $\text{H}_{0j} = \alpha_0 + \alpha_1 \log(\text{J}) + \alpha_2 \left[\log(\text{J})\right]^2$ (only α_0 reported) and the vector x_{ij} consists of D_i^{CB}, a dummy variable equal to one if bank i is a commercial bank; SC_{ij}^{high}, a dummy variable equal to one if bank i resides in areas with above-average social capital in period j; $D_i^{CB} \cdot SC_{ij}^{high}$, the interaction of the two, and a vector of control variables similar to those in Table 4. Trust is an index of the level of trust based on the World Values Survey in 1990 measured at the county-level. Newspaper Subscriptions is the average number of subscriptions per household measured at the municipality level. Donation Ratio is the door-collected contribution to charity per capita, divided by average municipality income and multiplied by 1,000 for scaling, measured at the municipality level. Principal Component is the first principal component for the variables Trust, Newspaper Subscriptions, and Donation Ratio. Reported p-value is from a Likelihood Ratio test of the null hypothesis that commercial banks in high and low social capital areas have the same probability of exit. The sample is 1987–2005. Standard errors are corrected for clustering at the bank level and p-values are reported in parentheses.

Table 12 Effect of Social Capital on Measures of Efficient Stakeholder Governance

	Deposits in Home Region			Gift Payments			Geographical Presence		
Principal Component	21.38	25.98	31.88	0.23	0.30	0.40	-1.42	-1.62	-1.68
	(0.00)	(0.00)	(0.00)	(0.03)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Equity Ratio (lagged)		74.89	67.93		5.66	4.25		-12.96	-19.21
		(0.05)	(0.11)		(0.00)	(0.00)		(0.00)	(0.00)
Return on Assets (lagged)		-66.50	-63.13		0.08	0.01		-16.80	-3.03
		(0.47)	(0.64)		(0.01)	(0.83)		(0.03)	(0.71)
Past Due Loans (lagged)			249.23			-5.35			2.59
			(0.00)			(0.00)			(0.48)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2,368	2,027	1,509	2,055	1,772	1,364	2,412	2,048	1,524
Pseudo-R^2	0.58	0.58	0.57	0.98	0.98	0.98	0.64	0.62	0.71

Results are from panel regressions of savings bank characteristics on bank-level (continuous) social capital, measured as the first principal component of Trust, Donation Ratio, and Newspaper Subscriptions. Deposits in Home Region is the fraction of domestic bank deposits raised in the region of the bank's headquarter. Gift Payments is the log of the ratio of annual surplus paid out as charity distribution or injected into the bank's gift fund for future distribution. Geographical Presence is the number of municipalities in which the bank has branches. The coefficients on Return-on-Assets (lagged) are multiplied by 100 for expositional reasons. All regressions include time (year) fixed effects. Control variables are similar to those in Table 4. Refer to the Data Appendix for remaining variable definitions. The sample is 1987-2005. Standard errors are corrected for clustering at the bank level and p-values are reported in parentheses.

Table 13 Banking Crisis and Savings Banks' Funding by Local Deposits

	All banks		Troubled banks omitted	
	Entire crisis period	Peak crisis period	Entire crisis period	Peak crisis period
High Social Capital Bank	80.32	76.32	96.79	92.23
	(0.05)	(0.06)	(0.02)	(0.03)
Low Social Capital Bank	78.99	74.55	95.34	90.53
	(0.06)	(0.07)	(0.03)	(0.03)
High Social Capital Bank × Crisis Dummy	-1.72	-2.82	-2.03	-2.86
	(0.44)	(0.26)	(0.37)	(0.26)
Low Social Capital Bank × Crisis Dummy	-5.40	-7.33	-6.10	-8.61
	(0.04)	(0.02)	(0.03)	(0.01)
Control Variables	Yes	Yes	Yes	Yes
Number of Observations	2,368	2,368	2,277	2,277
Pseudo-R^2	0.57	0.57	0.58	0.58
Equal level of local deposits for high and low-social capital banks in crisis years (p-value)	0.08	0.07	0.06	0.04

Results are from OLS regressions of Deposits in Home Region on bank-level (dichotomous) social capital, a bank crisis dummy, the interaction of bank crisis and social capital, and control variables. Deposits in Home Region is the fraction of domestic bank deposits raised in the region of the bank's headquarter. Social Capital is measured as the first principal component of Trust, Donation Ratio, and Newspaper Subscriptions, and is split into "High" and "Low" levels relative to the sample average. Bank Crisis Dummy equals one in the years 1988-2003 in columns entitled "Entire crisis period" and one in the years 1990-2003 in the columns entitled "Peak crisis period." Columns entitled "Troubled banks omitted" excludes banks that received financial aid from the savings banks guarantee fund from the regression. Control variables are similar to those in Table 4. Refer to the Data Appendix for remaining variable definitions. Reported p-value is from a Likelihood Ratio test of the null hypothesis that the level of deposits in in home region in the bank crisis years is similar for banks in high and low social capital areas. The sample is 1987-2005. Standard errors are corrected for clustering at the bank level and p-values are reported in parentheses.

Table 14 Effect of Social Capital on Bank Financial Accounting Ratios

	Return on Assets	Interest Rate Margin	Deposit Rate Margin	Loan Rate Margin	Specified Loss Provisions	Past Due Loans	Recovered Loans
Principal Component	-0.447	-0.765	-0.624	-0.126	-0.107	-0.328	0.285
	(0.00)	(0.00)	(0.00)	(0.28)	(0.10)	(0.32)	(0.12)
Equity Ratio (lagged)	0.028	-0.057	-0.024	-0.039	-0.015	-0.063	0.017
	(0.01)	(0.00)	(0.02)	(0.00)	(0.00)	(0.00)	(0.01)
Log(Total Assets) (lagged)	-0.021	0.069	0.093	-0.017	0.053	0.107	-0.099
	(0.52)	(0.18)	(0.01)	(0.48)	(0.04)	(0.14)	(0.00)
Fraction of C&I Loans (lagged)	0.000	0.001	-0.002	0.001	0.006	0.036	-0.002
	(0.92)	(0.85)	(0.44)	(0.49)	(0.00)	(0.00)	(0.45)
Loan Growth	0.018	-0.004	-0.004	-0.002	-0.013	-0.026	0.008
	(0.00)	(0.23)	(0.13)	(0.37)	(0.00)	(0.00)	(0.01)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2014	2050	2053	2059	1927	1776	1075
Number of Banks	149	150	150	150	148	134	121
R-squared	0.99	0.98	0.96	0.96	0.62	0.69	0.59

Results are from panel regressions of financial accounting ratios on bank-level (continuous) social capital, time-varying bank performance measures, and control variables similar to those in Table 4. Social Capital is the first principal component for the three social capital proxies Trust, Newspaper Subscriptions, and Donation Ratio. Please refer to the Data Appendix for remaining variable definitions. All coefficient estimates, except Equity Ratio and Lagged Loan Growth, have been multiplied by 100. All regressions contain time fixed effects. The sample is 1990–2005 for past due loans, 1995–2005 for recovered loans, and 1987–2005 otherwise. GLS standard errors are corrected for clustering at the bank level, and p-values are in parentheses.

1. Appendix

1.1 Variable definitions and data sources

Below we provide definitions of the variables used in the analysis. The regressions are performed with bank-level variables that come from two sources.

(1) Municipality characteristic variables are constructed from municipality-level data which is mapped into bank-level variables by computing the weighted average of the variable over the municipalities in which a given bank has branches. The weights are the fractions of the bank's branches in each municipality of operation, cf. Equation (5). Information on the location of bank branches is from the annual publication *Bankplass-registeret* by the Norwegian Financial Services Association (www.fnh.no). Municipality level data are measured annually from 1987 to 2005 unless otherwise mentioned. For several variables, however, statistics are not available in all years of the sample. In these cases, we construct a step-wise variable in accordance with the years of information that are available (explained below for each variable) in order to avoid having to drop years of the sample from a regression. We use variables defined according to the 2005 municipality borders (mergers between municipalities occur during our sample period). Data on all municipality variables are from Statistics Norway (www.ssb.no), unless otherwise indicated. Nominal value variables used in the regressions are deflated with the consumer price index (1998 is base year).

(2) Bank characteristic variables are from banks' balance sheet, income, and cost statements, and are already defined at the individual bank level. Data are from the banking statistics database (ORBOF) at Statistics Norway. ORBOF data are in general not publicly available, due to confidentiality clauses in banks' reports. All bank accounting variables are corrected for bank mergers and acquisitions by constructing a synthetic bank in year $t-1$ comprised of the banks involved in the merger. Nominal value variables used in the regressions are deflated with the consumer price index (1998 is base year).

Municipality-level variables:

Trust: The variable measures the level of trust among Norwegians on a scale from 1 to 5, with 5 indicating "high trust" and 1 indicating "high distrust". The variable comes from the 1990 World Values Survey (WVS) and is available at the county level.

Newspaper Subscriptions: The variable is the average number of newspaper subscriptions per household, not including freely distributed newspapers or tabloid papers. Figures of subscription levels are provided by Sigurd Høst (Høst, 2005) for the years 1984, 1996, and 2002. We construct a step-wise variable that equals respectively the 1984-level subscriptions in the years of 1987-1995, the 1996-level subscriptions in the years 1996-2001, and the 2002-level subscriptions in the years 2002-2005.

Donation Ratio: The variable is the amount of donations raised from door-to-door-collections per capita divided by average municipality income, multiplied by 1,000 for scaling Amounts donated are available from the national annual TV charity show *TV-aksjonen* in the years of 1990 and 2000-2005. We construct a step-wise variable that equals, respectively, the 1990 Donation Ratio in the years 1987-1995, the 2000 Donation Ratio in the years 1996-2000, and the annual Donation Ratio in the years 2001-2005. Data for 1990 is provided by Redd Barna. Data for 2000-2005 is provided by DnB NOR (the bank in charge of the administration of the event).

Median Income: The variable is the median gross personal income of persons above 17 years of age and is available from 1993. We adjust the variable for changes in the consumer price index and set its value in years prior to 1993 equal to the 1993-value.

Median Wealth: The variable is the median taxable gross wealth of persons above 17 years of age and is available from 1993. We adjust the variable for changes in the consumer price index and set its value in years prior to 1993 equal to the 1993-value.

Log(Population): The variable equals the log of the number of inhabitants.

Population in Work Force: The variable is defined as the fraction of inhabitants between 16 and 66 years of age, multiplied by 100 for scaling.

Population Over 67 Years: The variable is defined as the fraction of inhabitants of at least 67 years of age, multiplied by 100 for scaling.

Population with High education: The variable is the fraction of municipality population with a university-level (or equivalent) degree obtained in a program of at least four years of education, multiplied by 100 for scaling.

Unemployment (lagged): The variable is the fraction of municipality population that is unemployed in a given year. Data are available from 1988, hence 1987 employment values are set equal to the 1988 values. The variable is lagged by one period.

Reported Breaches of Law: The variable is the number of reported breaches of law scaled by municipality population in a given year. The data is available from 1994 and the values in earlier years are set equal to the 1994 figures.

State Owned Enterprises: The variable is the number of state and municipality owned non-financial enterprises scaled by municipality population. The variable is constant and set equal to its 1999 values (available from 1999 only).

Urban Population: The variable is the fraction of municipality population living in urban settlements. The data are available from 1990 and values for earlier sample years are set equal to the 1990 figures.

Bank-level variables:

Bank Asset Competition: The variable measures the market share of competing banks in terms of bank assets and equals the (weighted) average share of total bank assets that are held by competing banks in the municipalities where a given bank has branches. The weights are the fraction of the bank's branches in each municipality where it operates.

Number of Competing Banks: The variable equals the (weighted) average number of competing banks per 10,000 inhabitants in the municipalities where a given bank has branches. The weights are the fraction of the bank's branches in each municipality where it operates.

Branch Competition: The variable measures the market share of competing banks in terms of branches and equals the (weighted) average share of the total number of branches that are owned by competing banks in the municipalities where a given bank has branches. The weights are the fraction of the bank's branches in each municipality where it operates.

Commercial Bank Competition: The variable measures the market share of competing commercial banks in terms of branches and equals the (weighted) average share of the number of branches that are owned by commercial banks in the municipalities where a given bank has branches. The weights are the fraction of the bank's branches in each municipality where it operates.

Only Bank in Home Municipality: A dummy variable equal to one in years where Bank Asset Competition equals zero, that is, when the bank faces no competition from other banks in the municipalities where it operates.

Equity Ratio (lagged): The variable is the level of total equity divided by total assets, multiplied by 100 for scaling. The variable is lagged by one period.

Log(Total Assets) (lagged): The variable is the log of total assets, lagged by one period.

Return on Assets: The variable is computed as interest and non-interest income minus interest and non-interest expenses, divided by the mean value of total assets at the end of the current and previous year.

Gift Payments: The variable is the fraction of annual surplus that is paid out as gifts or set aside for future gift payments in the bank's gift fund.

Past Due Loans: The variable equals the outstanding gross value of delinquent engagements (net of specified loan loss reserves) scaled by net loans. If a loan or a guarantee of a particular customer is in delinquency, the value of all engagements of the customer are reported under this item. Delinquencies must be reported within 3 months. Data are available from 1990.

Loan Loss Provisions: The variable measures changes in specified reserves on loans, leases, and guarantees during the sample period, scaled by the mean value of total assets measured at the end of the current and previous year.

Recovered Loans: The variable is the gross value of reported delinquent engagements (loans and guarantees) at the beginning of the year, that are no longer in delinquency at the end of the year, scaled by the gross value of delinquent engagements at the beginning of the year. Data are available from 1995.

Deposit Rate Margin: The variable is the money market rate minus the individual bank's average deposit rate. Banks report their interest rates as by year-end on various types of deposits accounts. For each bank we calculate the weighted average of the reported interest rates, where the weights are the relative amounts of each type of account. From 1987 till 2000 we use the ordinary deposit rate, i.e., deposits received from the non-bank public, excluding deposits on negotiated terms. From 2001 on, the definitions of deposit categories in the official statistics change and from this date we use transaction deposits which is the category most similar to ordinary deposits. As the money market rate we use the effective 3 months NIBOR (Norwegian Interbank Offered Rate).

Loan Rate Margin: The variable is the interest rate on loans to non-bank-borrowers minus the money market rate. Banks report their interest rates as by year-end on various types of loans. For each bank we calculate the weighted average of the reported interest rates, where the weights are the relative amounts of each loan type. As the money market rate we use the effective 3 months NIBOR (Norwegian Interbank Offered Rate). To the lend-

ing rates we add up-front fees converted to an annualized rate. These are fees that banks charge on some loans to cover administrative costs etc.

Interest Rate Margin: The variable equals the difference between the Loan Rate Margin and the Deposit Rate Margin.

Loan Growth: The variable is the growth rate of net loans and leases, computed as the nominal value of loans and leases minus allowances for loan losses. Nominal values are converted to real with the consumer price index prior to computing the growth rate.

Fraction of C&I Loans (lagged): The variable equals to the fraction of commercial and industrial loans scaled by net loans. Businesses that are fully or partly owned by municipalities are excluded. The variable is lagged by one period.

1.2 Basic descriptive statistics

In this section we present and comment on basic descriptive statistics for the municipality and bank-level variables.

Table A1 shows the level of correlation between pairs of variables used in the regressions. Pair-wise correlations between the social capital measures are low. As expected, Donation Ratio is quite highly (negatively) correlated with Median Income. It is also negatively correlated with Population in Work Force and Urban Population, these two measures are presumably both picking up that individuals in large cities donate less. The other two social capital variables do not display particularly high correlation with any of the control variables. In general, the correlation table shows no sign of multicollinearity between any of pairs of variables.

Table A3 displays statistics for the municipality-level control variables used in the regressions. We observe that the municipalities vary considerably in size. The, by far, largest municipality is Oslo, the Norwegian capital, with more than half a million inhabitants, whereas the smallest municipality has less than 300. Importantly, there are no bank branches in these small municipalities which therefore do not influence the regressions because they receive a zero weight in the construction of the bank-level variables. Municipalities display variation in several other population characteristics such as education and the proportion of people living in urban settlements. While Median Income and Median Wealth show little variation, the number of Reported Breaches of Law and State Owned Enterprises also differ substantially across the municipalities.

Table A4 displays statistics for low and high social capital banks as well as tests of differences in the means between the groups. We calculate each bank's average level of social capital over its lifetime and subsequently split banks into groups using the 33 and 67 percentiles. The column values are the average level of the variables over banks and years in the low and high social capital subgroups.

Trust and Newspaper Subscriptions both indicate that a larger fraction of banks survive in the high social capital group, but none of the differences are statistically significant. In contrast, the Donation Ratio measure has a lower fraction of banks surviving in high social capital group. Between 8 and 21 percent of the high-social capital banks are classified as Only Bank in Home Municipality in *all* years of their lifetime, whereas the same is true for 4–8 percent of the low-social capital banks ("all" years because the table displays time-averaged values). These figures reflect that the Norwegian banking industry has many small banks with a distinct local orientation where many banks have offices in only one municipality and are "alone"

in that municipality if no other bank opens offices. This fact may at first appear surprising given that regulatory barriers to entry have been absent for two decades at the end of the sample, but it is likely an artifact of the small size of many municipalities. The Donation Ratio measure appears to pick up many such single banks, but fewer of them survive, suggesting that being the only bank in a local area does not automatically cause survival. In any case, as a precaution, we control explicitly for such single banks in our regressions.

The bank competition measures, however, indicate that high-social capital banks do not operate without competition. The three competition measures, Bank Asset Competition, Branch Competition, and Commercial Bank Competition, capture the market share of competing banks in terms of assets, branches, and commercial bank branches respectively. Measured in terms of assets, competing banks' market share is lower for high-social capital banks, and significantly so for Newspaper Subscriptions and Donations. In contrast, measured in terms of branches, competing banks' market share is higher for high-social capital banks, for all three social capital measures, but the difference between the high and low social capital groups is significant only according to the Donation Ratio measure. The third competition measure shows that more of the competing branches faced by high-social capital banks belong to other savings banks. Competition measured in terms of commercial banks' branches is lower for high social capital banks, for all of the three social capital measures, but significant only for Donation Ratio. Overall, a picture emerges of an industry where the average small and medium-sized savings banks compete against each other's branch networks in the local markets, and, in addition, around 10 percent of the banks operate in areas with no other bank. High social capital banks are well represented in both groups.

As for the remaining variables, significant differences in characteristics common to all three measures of social capital are that high social capital areas have smaller populations, have less people in the work force, have lower median income, lower reported number of breaches of law, and a lower fraction the population resides in urban settlements.

Considering the bank financial variables, there is little difference across the social capital groups. Return on Assets, Gift Payments, Deposit and Loan Rate Margins, or Loan Loss Provisions show large variation across the two groups. The average proportion of Past Due Loans is marginally lower for high social capital banks, and the proportion of Recovered Loans is higher. Loan Growth is higher for low social capital banks suggesting that it is especially this group of banks that have expanded during the sample.

The fraction of commercial and industrial loans in the banks' portfolios is around 30 percent for both groups.

Table A1 Correlation Table

	Newspaper Subscriptions	Donation Ratio	Trust	Equity Ratio (lagged)	Log (Total A (lagged)	Fraction of C&I Loan (lagged)	Bank Asset Competition	Only Bank in Home Municipality	Log (Population)
Newspaper Subscriptions	1								
Donation Ratio	0.32*	1							
Trust	0.20*	0.15*	1						
Equity Ratio (lagged)	0.06*	−0.04	0	1					
Log(Total Assets) (lagged)	−0.20*	−0.31*	−0.12*	−0.18*	1				
Fraction of C&I Loans (lagged)	0.07*	0.19*	0.04*	0.07*	−0.08*	1			
Bank Asset Competition	−0.18*	−0.31*	−0.13*	−0.13*	−0.02*	−0.08*	1		
Only Bank in Home Municipality	0.11*	0.21*	0.08*	0.15*	−0.22*	−0.01*	−0.78*	1	
Log(Population)	−0.35*	−0.51*	−0.25*	−0.17*	0.38*	−0.18*	0.65*	−0.46*	1
Population with High Education	−0.25*	−0.48*	−0.18*	−0.05*	0.32*	−0.19*	0.38*	−0.25*	0.67*
Population over 67 Years	0.18*	0.47*	0.04*	0.22*	−0.29*	0.01*	−0.35*	0.29*	−0.44*
Population in Work Force	−0.31*	−0.58*	−0.19*	−0.14*	0.28*	−0.12*	0.35*	−0.27*	0.61*
Median Income	−0.31*	−0.64*	−0.16*	−0.07*	0.40*	−0.18*	0.27*	−0.19*	0.45*
Median Wealth	−0.02*	−0.23*	−0.06*	0.18*	0.20*	0.01	−0.22*	0.19*	−0.18*
Unemployment (lagged)	−0.02	0.06*	0.02	−0.27*	−0.57*	−0.09*	−0.22*	0.18*	−0.14*
Reported Breaches of Law	−0.19*	−0.35*	−0.33*	0	0.25*	−0.14*	0.28*	0.18*	−0.14*
State Owned Enterprises	0.22*	0.15*	0.08*	0.010*	−0.04	−0.12*	−0.18*	0.14*	−0.25*
Urban Population	−0.31*	−0.57*	−0.25*	0.15*	0.37*	−0.22*	0.52*	−0.40*	0.79*
Loan Growth	−0.01*	−0.15*	0.03	0.20*	−0.07*	−0.12*	0.09*	−0.03*	0.05*

(continued on next page)

Table A2 Correlation Table (continued)

	Population in High Education	Population in Work Force	Median Income	Median Wealth	Unemployment (lagged)	Reported Breaches of Law	State Owned Enterprises	Urban Population	Loan Growth
Population over 67 Years	1								
Population in Work Force	0.49*	1							
Median Income	0.64*	0.47*	1						
Median Wealth	0.19*	−0.09*	0.54*	1					
Unemployment (lagged)	−0.03	0.05*	−0.26*	−0.47*	1				
Reported Breaches of Law	0.58*	0.46*	0.40*	0.09*	−0.04	1			
State Owned Enterprises	0.01	−0.16*	−0.08*	0.11*	−0.05*	−0.03	1		
Urban Population	0.58*	0.67*	0.51*	−0.11*	0.11*	0.52*	−0.16*	1	
Loan Growth	0.09*	0.07*	0.14*	0.10*	−0.16*	0.08*	0.03	0.92*	1

The table displays correlations between pairs of variables used in the survival regressions. Correlations are computed at the bank-level of the variables. * indicates significance at the 5% level. Please refer to the Appendix for variable definitions. The sample period is 1987–2005.

Table A3 Descriptive Statistics of Municipality-Level Variables

	Unit	**Median**	**Mean**	**Std.dev.**	**Min.**	**Max.**
Trust	-	4.07	4.06	0.09	3.92	4.33
Newspaper Subscriptions	-	1.10	1.13	0.28	0.39	2.17
Donation Ratio	-	0.15	0.17	0.09	0	1.14
Population	-	4,364	10,112	28,522	212	529,846
Population with High Education	%	1.27	1.57	1.16	0	11.30
Population over 67 Years	%	15.80	15.60	3.67	5.68	31.30
Population in Work Force	%	64.71	64.32	2.81	49.33	72.22
Urban Population	%	71.01	66.77	26.27	0.06	99.80
Median Income	'000 NOK	169.9	176.0	30.5	119.0	431.4
Median Wealth	'000 NOK	124.7	130.8	31.8	54.2	356.9
Unemployment (lagged)	%	2.59	2.79	1.32	0	12.00
Reported Breaches of Law	-	6.31	7.85	17.81	0.08	947.91
State Owned Enterprises	-	4.77	5.51	4.08	0.70	81.30

The table displays municipality-level descriptive statistics for the main variables used in the regressions. Statistics are based on all 433 municipalities, including municipalities that do not have any bank branches. The sample period is 1987–2005.

Table A4 Descriptive Statistics of Bank-Level Variables Split by Social Capital

	Trust			Newspaper Subscriptions			Donation Ratio		
	Low	High	Difference	Low	High	Difference	Low	High	Difference
Mean	3.97	4.14	−0.11	0.93	1.47	−0.54	0.11	0.22	−0.11
Fraction of Surviving Banks	0.56	0.69	−0.13	0.46	0.71	−0.17	0.67	0.42	0.25
Equity Ratio	0.103	0.100	0.003	0.092	0.114	−0.022***	0.092	0.111	−0.19**
	(0.034)	(0.034)		(0.032)	(0.040)		(0.024)	(0.048)	
Equity Ratio (1987)	0.102	0.098	0.004	0.092	0.107	0.015***	0.096	0.097	−0.001
	(0.030)	(0.024)		(0.022)	(0.028)		(0.022)	(0.026)	
Total Assets	2,617	1,666	951	3,179	615	2,564**	2,642	2,053	408
	(8,575)	(3,318)		(8,766)	(421)		(9,566)	(4,388)	
Total Assets (1987)	4,088	2,886	1,201	4,967	748	4,218**	3,571	3,546	25
	(14,822)	(6,913)		(15,123)	(556)		(16,486)	(7,986)	
Only Bank in Home Municipality	0.08	0.08	0	0.08	0.15	−0.07	0.04	0.21	−0.17
Number of Competing Banks	1.579	2.010	−0.431	1.461	1.821	−0.356	1.227	1.900	−0.673**
	(1.828)	(1.602)		(1.768)	(1.461)		(0.650)	(2.173)	
Bank Asset Competition	0.536	0.470	0.066	0.571	0.458	0.109**	0.651	0.362	0.289**
	(0.035)	(0.041)		(0.286)	(0.296)		(0.270)	(0.273)	
Branch Competition	0.557	0.760	−0.202	0.492	0.700	−0.207	0.301	0.781	−0.479***
	(0.949)	(0.705)		(0.912)	(0.684)		(0.214)	(1.051)	
Commercial Bank Competition	0.214	0.171	0.042	0.238	0.184	0.054	0.283	0.109	0.174**
	(0.184)	(0.158)		(0.184)	(0.184)		(0.182)	(0.125)	
Log(Population)	9.202	8.590	0.611***	9.436	8.543	0.893***	9.869	8.210	1.659***
	(1.263)	(0.863)		(1.281)	(0.744)		(1.065)	(0.654)	
Population in Work Force	63.62	62.44	1.18***	64.33	62.33	2.01***	65.41	61.41	4.00***
	(2.36)	(2.32)		(2.46)	(2.48)		(1.47)	(2.37)	
Population over 67 Years	15.7	16.2	−0.523	15.20	16.32	−1.12*	13.84	17.37	−3.53***
	(2.93)	(3.16)		(3.08)	(3.33)		(2.64)	(2.73)	
Population with High Education	1.83	1.49	0.34**	1.90	1.62	0.28	2.21	1.28	0.93***
	(1.06)	(0.71)		(1.17)	(0.67)		(1.18)	(0.57)	
Median Income	176.9	165.8	11.1***	177.3	168.6	8.55***	187.3	163.5	23.8***
	(17.6)	(12.5)		(19.4)	(14.9)		(16.3)	(11.2)	
Median Wealth	135.7	126.7	8.9**	125.7	138.5	−12.8***	128.7	133.4	−4.7
	(20.0)	(20.4)		(20.8)	(17.6)		(18.0)	(25.9)	
Unemployment (lagged)	2.33	2.79	−0.45***	2.61	2.36	0.25	2.57	2.27	0.30*
	(0.80)	(0.69)		(0.84)	(0.82)		(0.76)	(0.90)	

(continued on next page)

Table A5 Descriptive Statistics of Bank-Level Variables Split by Social Capital

	Trust			Newspaper Subscriptions			Donation Ratio		
	Low	High	Difference	Low	High	Difference	Low	High	Difference
Reported Breaches of Law	7.71	4.94	2.76***	7.21	5.34	1.86***	8.12	5.02	3.10***
	(3.62)	(1.72)		(3.52)	(2.11)		(3.59)	(2.54)	
State Owned Enterprises	0.051	0.057	−0.005	0.046	0.061	−0.018**	0.039	0.054	−0.15***
	(0.031)	(0.049)		(0.025)	(0.051)		(0.018)	(0.041)	
Urban Population	56.65	42.75	13.90***	63.12	44.16	−18.95***	73.78	35.29	38.49***
	(26.29)	(22.1)		(24.56)	(23.39)		(17.29)	(19.55)	
Return on Assets	0.047	0.048	−0.001	0.049	0.047	0.002***	0.048	0.049	−0.001
	(0.006)	(0.005)		(0.005)	(0.005)		(0.005)	(0.006)	
Gift Payments	0.007	0.008	−0.001	0.006	0.009	0.003*	0.007	0.009	−0.002
	(0.005)	(0.007)		(0.009)	(0.006)		(0.005)	(0.010)	
Deposit Rate Margin	0.040	0.038	0.020	0.042	0.038	−0.004**	0.038	0.042	0.004**
	(0.008)	(0.006)		(0.007)	(0.008)		(0.008)	(0.008)	
Loan Rate Margin	0.019	0.021	−0.003***	0.019	0.018	0.017	0.021	0.016	0.05***
	(0.007)	(0.007)		(0.006)	(0.010)		(0.005)	(0.011)	
Past Due Loans	0.021	0.023	−0.002	0.028	0.018	0.010	0.019	0.027	−0.008
	(0.016)	(0.052)		(0.051)	(0.016)		(0.016)	(0.052)	
Recovered Loans	0.804	0.971	−0.167	0.808	0.924	−0.106	0.864	0.899	−0.035
	(0.398)	(0.454)		(0.447)	(0.480)		(0.447)	(0.474)	
Loan Loss Provisions	0.008	0.008	0	0.010	0.005	0.005*	0.004	0.013	−0.008**
	(0.018)	(0.015)		(0.015)	(0.010)		(0.005)	(0.023)	
Loan Growth (lagged)	0.10	0.09	0.01	0.09	0.10	−0.01	0.11	0.08	0.03**
	(0.15)	(0.16)		(0.06)	(0.04)		(0.04)	(0.05)	
Fraction of C&I Loans (lagged)	0.27	0.29	−0.02	0.24	0.28	0.04	0.23	0.31	−0.07***
	(0.10)	(0.13)		(0.09)	(0.10)		(0.07)	(0.13)	
Number of Observations	923	842	–	842	822	–	842	833	–
Number of Banks	73	71	–	71	55	–	55	76	–

The table displays mean values and standard deviations (in parentheses) of key bank level variables according to social capital subgroups. Bank level variables are constructed from municipality level variables as weighted averages of the municipalities in which a given bank has branches, where the weights equal the fraction of the bank's branches in each municipality, cf. Equation (5). Trust, Newspaper Subscriptions and Donation Ratio have been time-averaged for each bank and subsequently split into three groups according to 0.333 and 0.667 percentiles. For ease of exposition, we present the statistics for the low and high social capital groups (medium group being left out). All other variables are averaged over time and banks in the respective subgroup. Newspaper Subscriptions is the average number of subscriptions per household measured at the municipality level. Donation Ratio is the door-collected contribution to charity per capita, divided by average municipality income and multiplied by 1000 for scaling, measured at the municipality level. Refer to the Appendix for variable definitions. Nominal value variables are measured in real terms (1998-kroner). * indicates differences between low and high social capital groups significant at the 5% level. The sample period is 1987–2005.

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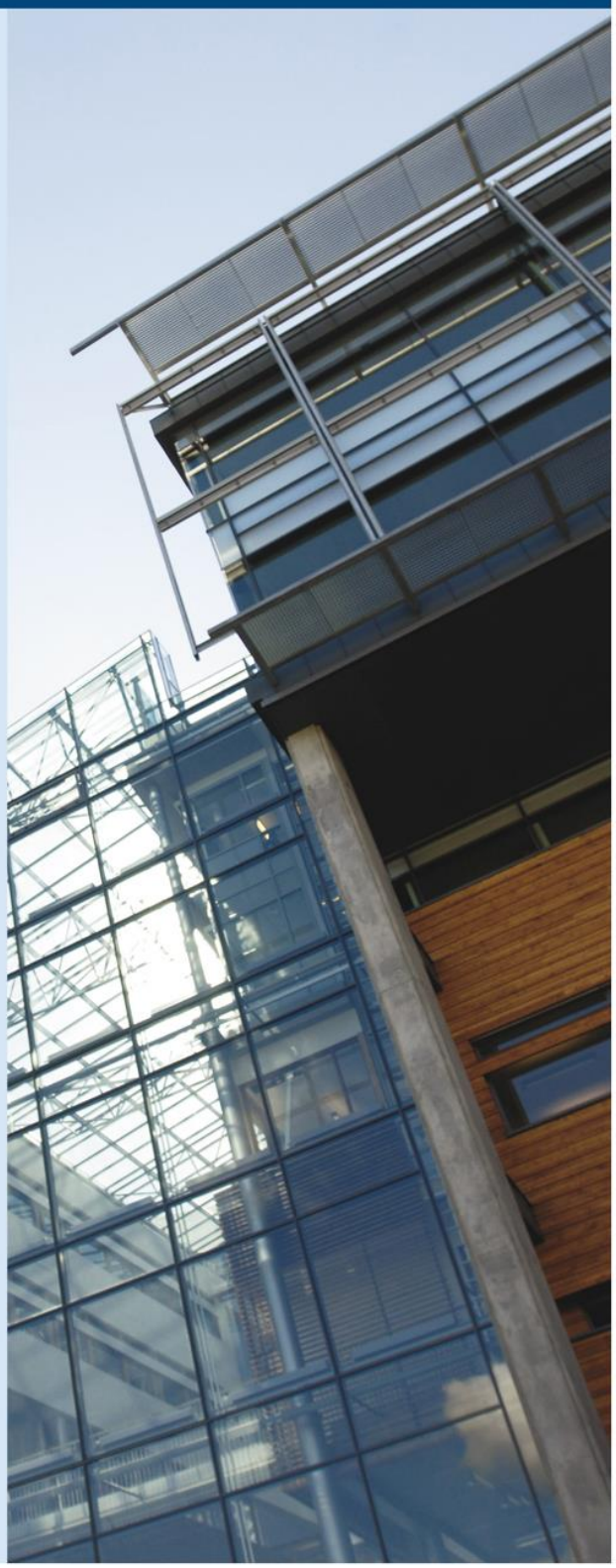

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