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Michael Koetter and
Felix Noth

Bank bailouts and competition

Did TARP distort competition among sound banks?

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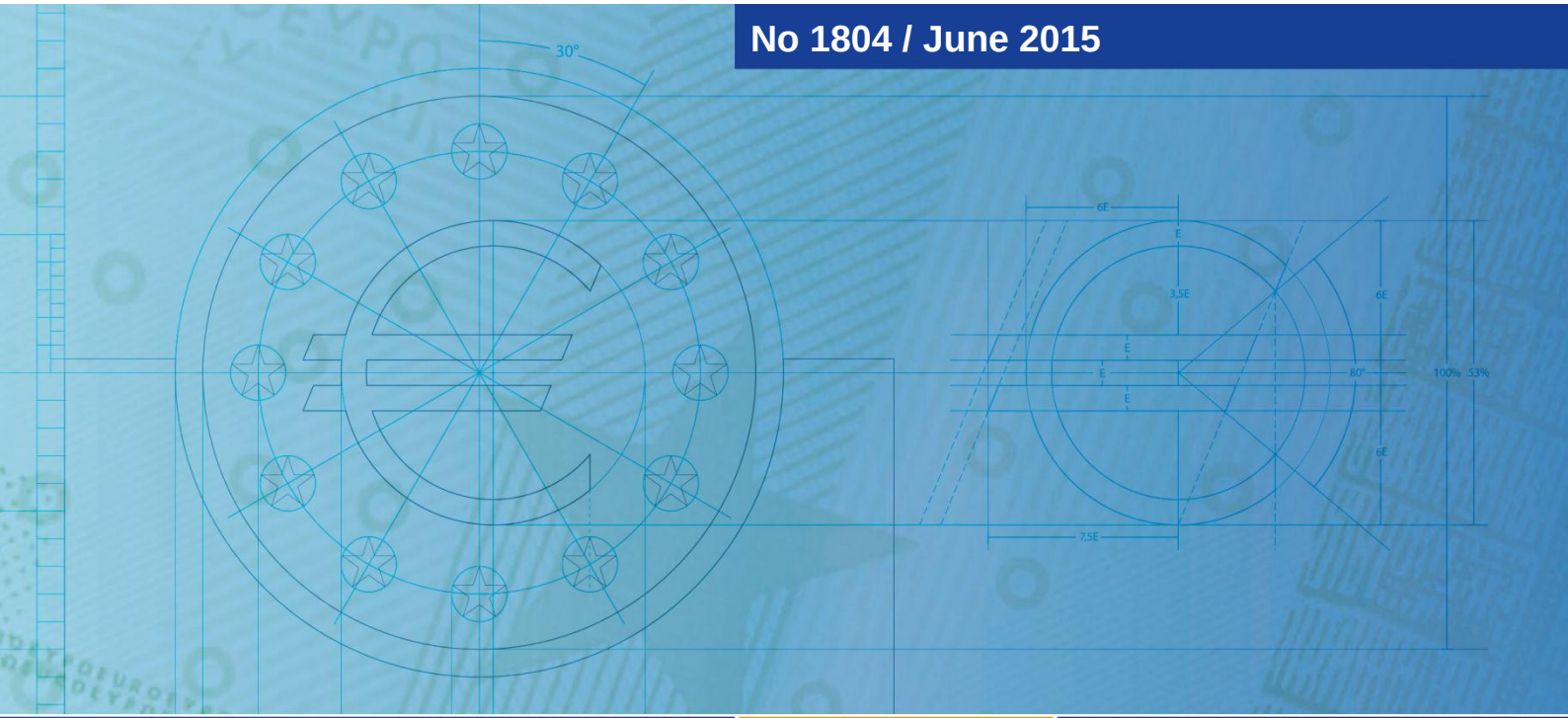

Abstract

This study investigates if the Troubled Asset Relief Program (TARP) distorted price competition in U.S. banking. Political indicators reveal bailout expectations after 2009, manifested as beliefs about the predicted probability of receiving equity support relative to failing during the TARP disbursement period. In addition, the TARP affected the competitive conduct of unsupported banks after the program stopped in the fourth quarter of 2009. The risk premium required by depositors was lower, and loan rates were higher for banks with higher bailout expectations. The interest margins of unsupported banks increased in the immediate aftermath of the TARP disbursement but not after 2010. These effects are economically very small though. No effects emerged for loan or deposit growth, which suggests that protected banks did not increase their market shares at the expense of less protected banks.

Keywords: Banking, TARP, bailout expectations, competition
JEL: C30, C78, G21, G28, L51

Non-technical summary

We test empirically whether equity support of U.S. banks under the Capital Purchase Program (CPP) affected banking market competition as reflected by asset and liability interest rates after the program stopped at the end of 2009. We seek to shed light on the broader question, if and how unorthodox policy measures in response to financial crises have implications for competition.

Specifically, we provide empirical evidence on the theoretical notion that any bank bailout scheme represents a subsidy to the refinancing cost of supported banks. Such subsidies should increase interest margins and/or market shares of supported banks, thereby potentially distorting competition. A number of studies investigate the effects of the recent financial turmoil and corresponding policy responses on the competitive conduct of supported banks relative to non-supported banks. As such, existing literature focuses on the direct effects of bailout policies.

We identify in contrast the *indirect* effect of bailouts on interest margins by changing bailout *expectations* of agents about non-supported banks as well. Our focus is thus on competitive distortions within the group of sound banks rather than pricing differences between supported and non-supported banks. For example, higher bailout expectations should reduce required risk premiums by depositors also among sound banks. Quantifying the price competition effects of the TARP program on *sound* banks *after* this emergency policy stopped is important for at least two reasons. First, non-supported banks accounted for approximately 40% of total assets under management in the U.S. banking industry since the first quarter of 2010. Second, after a series of deregulation since the mid-1990 that aimed at creating a level playing field in the U.S. financial industry, emergency support programs may have reversed the development towards increasingly competitive banking markets.

We exploit the unique setting during the Troubled Asset Relief Program (TARP) between the fourth quarter of 2008 and the fourth quarter of 2009 to identify conventionally unobservable bailout expectations. Out of all 707 U.S. commercial banks that received TARP funds, we identify 548 banks that survived until the first quarter of 2010 and 136 ones that failed. We use indicators gauging the connections between banks and politics next to bank- and region-specific information to generate bailout expectations as the conditional likelihood to receive TARP funds if in distress. Based on estimated parameters, we extrapolate the bailout expectations of non-supported banks after the TARP program stopped. Controlling for bank-specific risk, size, and other observable traits, we use these generated bailout expectations among sound banks to explain observed pricing behavior on loans and deposits.

In line with theory, the results show that larger bailout expectations increase banks interest margins: loan rates increase and deposit rates decrease. However, these effects are economically small. An increase of bailout expectations by one standard deviation would increase loan interest rates by 2.65 basis points. In light of an average loan yield of about 6% between q1/10 and q4/13, this reflects an increase of loan rates of about 4%.

These results indicate that competitive distortions of TARP in terms of loan and deposit rates were very limited. Our results for the US indicate that these effects are most pronounced in the immediate aftermath of TARP in 2010. Banks that are perceived more likely to be rescued when in distress were not able to expand lending and deposit markets shares significantly.

To assess the generalizability of these results pertaining to the competitive effects of the TARP/CPP program on U.S. banks, further research on other support programs of financial institutions and markets in response to financial crises in regions other than the U.S. is warranted.

1. Introduction

Did the financial support of distressed U.S. banks by the Capital Purchase Program (CPP) affect loan and funding rates, as measures of price competition? The CPP, the largest single element of the Troubled Asset Relief Program (TARP), dispersed around $204.9 billion to 707 U.S. banks between q4/08 and q4/09. As of July 31, 2014, the Treasury recovered $225.9 billion of this CPP support in the form of repayments, dividends, and interest, turning the program into a positive return for taxpayers. Timothy Masad, deputy Secretary of the Treasury in charge, accordingly called TARP a success in the final hearing of the Congressional Oversight Panel (COP) on March 4, 2011 (see http://cop.senate.gov), and Liu et al. (2013) agreed in their analysis of the substantial financial and return recovery of banks that received CCP funds. However, on an economic cost-benefit basis it is not clear whether taxpayers had a net positive return (Calomiris and Khan, 2014). Yet in its final assessment, the COP (2011) paints a more nuanced picture: Although the cost of TARP was much lower than anticipated, it also might have induced distortions of market mechanisms, in the form of increased risk taking and reduced competition. The former issue has received considerable attention in recent studies (Gropp et al., 2011; Dam and Koetter, 2012; Black and Hazelwood, 2013; Duchin and Sosyura, 2014) whereas evidence about competitive distortions due to TARP is rare.

Bailout schemes can distort competition in two ways: directly, by subsidizing rescued banks, and indirectly, by inducing undesirable market conduct by unsupported banks. Specifically, government bailouts directly distort banking competition because insurance schemes treat banks differently depending on the size of the subsidy (Beck et al., 2010), which upsets any existing level playing field. Empirical evidence about the direct effect of bailouts on competition is mixed. Calderon and Schaeck (2012) show, with a sample of 46 banking crises

in 138 countries, that government support of troubled banks led to more banking competition and lower interest margins after a crisis. The main benefits accrue to borrowers in already financially well-provided segments. In contrast, Berger and Roman (2014) show that TARP-supported U.S. banks exhibited higher Lerner margins and market shares compared with unsupported banks in the period after q4/09, driven by banks that repaid early. Whereas suppliers of funds require lower risk premiums, TARP capital infusions required a dividend yield of 5% in the first five years of support, increasing to 9% thereafter. In addition, TARP infusions were tied to executive compensation caps (Bayazitova and Shivdasani, 2012). Berger and Roman (2014) conclude that the safety net benefits of TARP outweighed the cost disadvantages. Even if bailouts are allocated on perfectly equal terms to all banks, the provided insurance creates socially undesirable, additional risk taking (Keeley, 1990). Consistent with this view, the Congressional Oversight Panel (2011) voiced concerns that TARP equity provisions provided supported banks with a competitive advantage that could lead to consolidation and further concentration, to the detriment of small or local community banks in particular. In turn, these subsidized survivors, with their increased market power, could invoke additional welfare losses by charging higher interest rates to borrowers that represent poor credit risks.

Theoretically Hakenes and Schnabel (2010) emphasize the importance of indirect effects of government bailouts on unsupported peers too. The increased protection of banks that anticipate bailouts reduces the margins and charter values of competing, unsupported banks. Prospective bailouts also induce depositors to require lower default premiums, such that the reduced funding costs imply more lending by protected banks, which translates into increased competitive pressure on unsupported incumbents. Depositors instead require higher risk premiums from unprotected banks, which reduces margins at given loan rates

or could encourage higher risk taking by the banks in an attempt to increase expected returns and thus margins.

We focus on the latter effect and use political indicators in the banks' home markets and Congressional voting behavior on TARP to identify bailout expectations. In turn, we assess how unsupported banks responded, in terms of market power, to the bailout scheme. To our knowledge, this study is the first to analyze these indirect effects of prospective bailouts, or bailout expectations, among unsupported banks. They accounted, on average, for 40% of cumulative banking assets during the TARP disbursement period (q4/08-q4/09). We test whether the expectation of capital support affects unsupported banks' interest margins, loan and deposit growth, regional market shares and Lerner indices, as measures of price competition. This approach complements the focus by Berger and Roman (2014) and Li (2013) on differences between TARP and non-TARP banks in terms of markups and loan supply, respectively such that we identify *within* the group of *unsupported* banks the presence and magnitude of competitive distortions.

The empirical challenge is that bailout expectations usually are not observable. The joint occurrence of bank support during the TARP disbursement period and bank failures is an important exception that enables us to estimate the likelihood that a distressed bank will be rescued, relative to the probability it will fail, according to banks' risk and size traits. To identify accurate bailout expectations, we thus need factors that can discern between failing and supported banks but that are uncorrelated with the interest margins of unsupported banks. Similar to Duchin and Sosyura (2014) and Li (2013), we consider information of whether Congressional representatives of the banks' counties were on the subcommittee of financial services, their voting behavior in Congress about TARP, and their party membership. On the basis of these parameter estimates, we

extrapolate the bailout expectations for sound banks. Controlling for risk taking, we regress the generated bailout expectations revealed during the TARP disbursement period on the loan rates charged, deposit rates incurred, and corresponding volume changes after the end of the subsidy program (q1/10-q4/13). These measures match the main channels Hakenes and Schnabel (2010) cite to describe, how bank bailouts distort competition among unsupported peers.

Our results show that higher bailout expectations increase loan rates and reduce deposit rates in the post-TARP period q1/10-q4/13. This increase of interest rate margins is consistent with theory and robust to matched sampling tests that seek to ensure comparability across the TARP recipients we used to generate bailout expectations. These price effects are most pronounced in the immediate aftermath of the TARP disbursement, then turn insignificant after 2010. Any price distortions dues to changed bailout expectations among unsupported banks thus appears to have been short lived. We find no evidence that banks that are perceived as particularly likely to receive a bailout exhibit significantly larger loan or deposit growth. This result mitigates concerns by the COP that small, unsupported banks were particular at risk to lose market share. Overall, the increasing (decreasing) effect on loan (deposit) rates is amplified in states where competitive restrictions were more pronounced.

The remainder of this article is organized as follows: Section 2 outlines the empirical strategy, presents the data, and explains the identification methods we used to estimate bailout expectations due to government intervention via TARP. In Section 3, we present the estimation results for the bailout expectation effects after 2009 before we conclude in Section 4.

2. Empirical strategy and data

2.1. Sampling

Following Hakenes and Schnabel (2010), we test the hypothesis that higher bailout expectations increase interest margins and possibly loan and deposit growth. But the likelihood of receiving a bailout, that is, bailout expectations are usually not observable. The simultaneous occurrence of both TARP support and bank failures between q4/08 and q4/09 is exceptional, because regulators revealed which banks they considered important enough to rescue. Selected banks received equity support, while many banks that did not receive TARP support failed. To test the indirect channel of competitive distortions due to bailout expectations, we use observed failures and TARP bailouts during q4/08 and q4/09 (t=1) to generate bailout expectations for sound banks during q1/10 and q4/13 (t=2). Figure A.1 illustrates the empirical strategy and sampling.

– Figure A.1 around here –

In the upper part of Figure A.1, we find that at the end of q3/08, banks were either distressed and in need of support or sound. The latter, sound banks should have no incentives to apply for TARP funds, for three reasons: The funds were expensive, receiving support meant limiting the compensation of managers, and TARP carried a potential stigma cost (Wall Street Journal, 2009; Bayazitova and Shivdasani, 2012; DeYoung et al., 2013). The regulator decides in period t=1 which distressed banks to rescue. Sound banks are sampled as all other commercial banks that survived at least until q4/09, the end of the TARP disbursement period. Table A.1 shows the frequency distribution of supported, failed, and sound banks per quarter during the crisis period q4/08-q4/09 and for the period q1/10-q4/12.

– Table A.1 around here –

Corresponding with the columns in Table A.1, we sampled 548 of the 707 banks that received TARP and observed 136 failures as reported by the FDIC. In 9 cases, banks failed even after the holding company received TARP funds. We excluded these cases from our analysis, leaving 127 failures and a failure rate conditional on distress of around 22% during t=1. Conditional on distress, as revealed by the observable outcomes of bailout versus failure, banks had to apply for TARP funds, though with only light formal requirements.

The indirect competitive distortions of Hakenes and Schnabel (2010) hinge on depositors' expectations that an unsupported bank they supply with funds will be protected by a prospective bailout.[2] We assume that agents form expectations about the likelihood of a bailout relative to failure during t=1 and extrapolate expectations to non-treated banks after the TARP-disbursement period ended, that is, to t=2.

– Table A.2 around here –

Table A.2 shows that the relatively small number of rescued banks accounted for an average of 60% of aggregate (commercial) banking assets in the United States, relative to the approximately 5,800 sound banks in t=1. More than half of the aggregate assets among TARP recipients accrued to what Li (2013) calls the eight mega-banks (Citigroup, JP Morgan, Bank of America [including Merrill Lynch], Goldman Sachs, Morgan Stanley, State Street, Bank of New York Mellon, and Wells Fargo [including Wachovia]), which neither the government nor the Fed would let fail, such that they were forced to take TARP funds. The columns labeled "Forced" in Table A.1 show that the mean size difference be-

[2]Note that this mechanism also holds in the presence of deposit insurance, given insurance caps of $ 250,000 for deposits that apply to all banks equally (Lambert et al., 2014) since October 2008 and $100,000 before that date. During the period when we extract bailout expectations, only around 60% of deposits are insured in our sample, thus leaving a substantial uninsured portion of retail funding. Moroever, Huang and Ratnovski (2011) show that the share of generally uninsured wholesale funding dominated retail borrowing in recent years.

tween supported and unsupported sound banks was driven by this group, such that the mean bank size of supported sound banks was $11 billion, whereas that for the unsupported sound banks was $0.5 billion. The COP's concern that smaller, unsupported banks would suffer from distortions thus seemed justified. Furthermore, the 40% share of total assets managed by sound banks warrants an analysis of potential competitive distortions within this group.

The lower panel in Figure A.1 shows the four possible scenarios that banks faced in t=2 (q1/10–q4/13). First, TARP recipients could fail or survive in t=2. Only one TARP recipient failed. The remaining 547 TARP banks survived until q4/13, representing the distressed sample, as depicted by the branches inside the dashed box in Figure A.1. Second, sound banks from t=1 either failed or survived in t=2, as noted in the solid box in Figure A.1. Of the 5,900 sound banks in q4/09, 275 failed during t=2, and 5,177 non-TARP recipients survived through q4/13.

A test of direct distortion effects (e.g., Berger and Roman, 2014; Li, 2013; Calderon and Schaeck, 2012), would seek to identify the differential effect of bailout support in the full sample, as indicated in Figure A.1 by the dotted box between TARP and non-TARP banks (dashed versus solid boxes). We test the effect that heterogeneous bailout expectations have on unsupported banks only, sampled in the solid box in Figure A.1. With this setup, we can determine whether government rescue schemes exert obvious effects on rescued banks relative to non-rescued ones but also affect the group of supposedly sound banks.

2.2. Specification

In the first stage, we approximate bailout expectations at t=1 by using a probit model to estimate the probability of receiving TARP relative to failing, while controlling for bank traits X that gauge risk and importance, as well

as regional economic conditions (see Dam and Koetter, 2012). The dependent variable TARP is an indicator variable equal to 1 if a bank i received equity in a quarter t between q4/08 and q4/09 or 0 if the bank failed:

$$E[\text{TARP} = 1]_{it} = \alpha_0 + \sum_{c=1}^{C} \alpha_c X_{cit-1} + \sum_{l=1}^{L} \eta_l P_{ldt-1} + u_{it}. \tag{1}$$

Control variables capturing the bank characteristics and regional control variables X are lagged by one quarter. However, the decision to bailout a bank is unlikely to be independent of the bank's market power, as reflected by its ability to set prices. Therefore, we need to deal with a potentially endogenous relationship between generated bailout expectations, loan rates R^L, and deposit rates R^D. To identify the effect of bailout expectations on interest rates, we specify exclusion restrictions P that are uncorrelated with rates but that effectively distinguish between failing and rescued banks.

We follow Duchin and Sosyura (2014) and Li (2013) when specifying P and use four political variables, reflecting our allocation of each bank i to Congresspeople representing the region d where the bank resides. First, we define two dummy variables (*SC0709* and *SC0911*) if a Congressperson was on the subcommittee of financial services during 2007–2009 and 2009–2011. As Li (2013) argues, members of this subcommittee should possess expert knowledge and qualifications that enhance their ability to judge the rescue program and the decision to provide funds to certain banks. Second, we use a dummy variable (*2nd Vote*) that shows whether a Congressperson voted yes (1) or no (0) for the second vote on TARP.[3] The idea behind this variable is that representatives' opinions might have shifted between the two votes if his or her region had been granted specific concessions, such as financial support in the form of govern-

[3]The results do not change if we specify the first vote on TARP or use both simultaneously.

ment projects. Third, we identify the party of each Congressperson (*Party0709* and *Party0911*) for the respective session, equal to 1 if the representative was a Democrat and 0 otherwise. This variable acknowledges that ideology differs systematically, such that conservative Republicans tend to oppose government interventions more categorically than Democrats (Li, 2013). We provide the descriptive statistics in the top panel of Table A.3.

In the second stage, we assess the effect of bailout expectations $E[\text{TARP} = 1]_{it}$ on price competition, as reflected by the interest rates that banks received on loans R^L and paid for (deposit) funding R^D. Note that we estimate parameters to predict bailouts in Equation (1) only for those banks that are distressed and applied (successfully) for TARP funding or failed during t=1. To predict bailout expectations for sound banks in each quarter of t=2, we use the estimated parameters of Equation (1), $\hat{\alpha}$ and $\hat{\eta}$. That is, we extrapolate bailout expectations to sound banks (Dam and Koetter, 2012). These descriptive statistics appear in the third panel of Table A.3.

We estimate a fixed effects regression for t=2, q1/10 to q4/13. With our interest in the indirect effects of government bailouts, we estimate the relationship for sound banks only, that is, the sample indicated by the solid box in Figure A.1. Formally,

$$R_{it} = b_0 + b_1 E[\text{TARP} = 1]_{it} + \sum_{r=2}^{R} b_r X_{rit-1} + \tau_t + \mu_i + \gamma_{year} \times \theta_{state} + e_{it}. \tag{2}$$

With this approach, we derive results for five dependent variables: interest rates on total loans (R^{TL}), real estate loans (R^{RE}), commercial and industrial lending (R^{CI}), deposit rates (R^{DI}), and total funding (R^{TF}). All interest rates reflect the annualized quarterly yield a banks receives on loans or pays on funding (for the descriptive statistics, see the second panel of Table A.3). In addition to

the identical vector of control variables X in Equation (1), we specify quarterly dummies τ_t, bank-fixed effects μ_i, and cluster standard errors at the bank level. The term $\gamma_{year} \times \theta_{state}$ reflects interacted year and state effects that capture additional time-varying differences on the state level.

The variable *Bailout expectation* in Table A.3 describes $E[\text{TARP} = 1]_{it}$ during and after TARP. During the TARP disbursement period, bailout expectations are significantly higher for banks that received TARP compared with the (extrapolated) bailout expectations of sound banks. This difference is statistically insignificant for the post-disbursement period. However, especially in the post-TARP period, the dispersion of bailout expectations is highest within the group of sound banks. This heterogeneity in agents' expectations about prospective bailouts should affect required risk premiums, and thus prices (Hakenes and Schnabel, 2010), for both supported and especially unsupported banks.

2.3. Data sources

We obtained data from five different sources. First, we used financial accounts and failed bank data from the Federal Deposit Insurance Corporation (FDIC). Second, we obtained TARP recipient identities from the Department of the U.S. Treasury. Third, we gathered data to measure the voting behavior of Congressional representatives and their party affiliations from the website of the U.S. House of Representatives. Fourth, county-level unemployment rates came from the Bureau of Labor Statistics, and the state-level Case Shiller indices came from the Fed of St. Louis website. Fifth, we used data on loan and funding interest rates for U.S. banks obtained from the Uniform Bank Performance Reports of the Federal Financial Institution Examination office.

We started with 8,231 banks for the period q4/08-q4/13 but cleaned these data. First, we restricted the sample to commercial banks, leaving 7,191 banks. Second, we dropped all banks with headquarters outside the U.S. mainland

and the District of Columbia, resulting in a sample of 7,177 banks. Third, by requiring complete observations for all variables used in the analysis, we reduced the sample to 7,165 banks.[4] Fourth, to exclude mergers and voluntary exits, we followed Kashyap and Stein (2000) and required that all banks not recorded as failures by the FDIC survived until q4/13. This culling left 6,172 banks. Fifth, we required that the remaining banks have consecutive years, so the final sample included 6,135 banks.

We followed Wheelock and Wilson (2000) and Cole and White (2012) in our choice of control variables; the descriptive statistics for TARP, failed, and sound banks during and after the crisis period appear in Table A.3.

– Table A.3 around here –

To control for risk buffers, we used the equity-to-asset ratio (EQ). The variable *Loans* reflected the ratio of total loans to total assets, so as to control for the relative importance of credit business to the bank. The *Cash* variable indicated banks' cash, standardized by total assets. We control for profitability using the pre-tax return on assets, RoA. The share of non-performing assets over assets (NPA) also controlled for asset risk. To address the differences between small and large banks, we used *Size*, the natural logarithm of total assets. In addition, to capture differences in funding structure, we specified *Deposits* as the share of total deposits to total assets. For the local economic conditions, we specified the county-level rate of unemployment UR. For each bank and quarter, this variable equaled the mean of county unemployment rates from the bank's business regions, as indicated by the summary of deposits weighted by the bank's deposits in each county. The variable *CS index* was the state-level Case-Shiller index. The bottom panel of Table A.3 provides descriptive statistics.

[4] We winsorize all bank variables at the 0.05% and 99.5% levels.

3. Results

3.1. Identification of bailout expectations

To assess the effect of prospective bank bailouts on price competition, we must identify bailout expectations accurately. Valid exclusion restrictions must explain bailout expectations as well as be weakly correlated with the endogenous variables, asset and liability interest rates. Table A.4 shows the estimated marginal effects of Equation (1) for each instrument, specified both individually and jointly.

The joint specification in column (1) show that the instruments correlate significantly with bailout expectations and thereby confirms the relevance of political factors as means to discern between rescued and failed banks: Banks in districts with a Congressperson who voted "yes" on the second TARP vote were more likely to receive bailout funds. Banks in districts with a representative who also sat on the subcommittee of financial services were more likely to be bailed out during the 2007–2009 period. Banks in districts whose representatives were members of the subcommittee during 2009–2011 were less likely to receive TARP support. Party membership in both periods significantly predicted whether a bank would be bailed out or fail too. For example, banks operating in a region represented by a Democrat in the first session (2007–2009) were more likely to receive TARP funding, whereas this relation flips in the second session (2009–2011), indicating a shift in the assessment of Democratic Congresspersons about which banks were eligible for TARP. All instruments in column (1) differed individually significantly from 0. An F-test statistic larger than 15 corroborated the joint significance of all five variables, in support of the instruments' validity. The specifications in columns (2) through (6) show that most instruments also correlate significantly with bailout expectations on an individual basis. The coefficients for the subcommittee dummy of 2007-2009 and party membership

of 2009–2011 change signs in columns (3) and (6) compared to column (1) but are insignificant in the individual specifications.

– Table A.4 around here –

The average marginal effects of bank characteristics and the regional unemployment rate in Table A.4 show that banks with larger equity buffers, banks acting in states with a higher Case Shiller index, and more profitable banks were more likely to be bailed out. This result is broadly in line with the intention of the U.S. Treasury to rescue only those banks that had the potential to repay their TARP support (Duchin and Sosyura, 2014; Li, 2013). In contrast, banks with high loan ratios, lots of troubled assets, and with high cash ratios were less likely to receive TARP funds.

Regarding the orthogonality requirement between instruments and interest rates, we cannot use conventional tests, because we use extrapolated bailout expectations from t=1 to explain the price-setting behavior of sound banks during t=2. This instrumental variable setting is non-standard, in that the first and second stages pertain to different samples at different time horizons. To test whether political indicators P are only weakly correlated with the interest rate outcome variables, we instead regressed the full set of controls X together with the instruments P on our main dependent variables, after the disbursement of TARP funds, for the sample of sound banks only (Table A.5). Thus we can test if bailout expectations revealed during q4/08 and q4/09 affected asset and liability interest rates after the TARP disbursement period for the group of sound banks. Valid instruments should exhibit very weak correlations with the dependent variables during the disbursement period, but also after 2009.

– Table A.5 around here –

Each column in Table A.5 confirms that for each dependent variable, most of the instruments exhibited no correlation after the TARP disbursement period.

Only party membership and sitting on the financial services subcommittee were significant and only in some cases. The F-tests in the bottom panel also indicate the joint insignificance for all interest rates except commercial and industrial lending after TARP stopped. In summary, these results supported the validity of the exclusion restrictions to identify bailout expectations.

3.2. Bailout expectation effects on interest rates

Table A.6 reports the estimation results for the baseline specification of Equation (2), designed to explain the impact of bailout expectations on interest rates as a measure of banking market competition. The variable of interest is the contemporaneous bailout expectation calculated from the estimates of Equation (1). We also specify the same control variables as in Equation (1) to account for bank characteristics, and risk in particular, and regional economic factors. These variables are lagged by one quarter, as indicated by the prefix L. Finally, we control for bank, quarter, and interacted year-state fixed effects.

The five columns in Table A.6 reflect each of the five asset and liability interest rates. For column (1), which shows the results for interest rates on total loans, recall that the sample comprises banks that never received TARP support after the program stopped in q4/09, or the solid box in Figure A.1. Sound banks that were considered more likely to receive a bailout, should they face distress, realized significantly higher yields. An increase of bailout expectations by 1 percentage point increased yields by 0.0014 basis points. This is minuscule and shows that despite being significant, the economic effect of higher bailout expectations absent for the sample of sound banks. Put into perspective, an increase of bailout expectations by one standard deviation (0.1899, see Table A.3) would increase loan interest rates by 2.65 basis points. In light of an average loan yield of about 6% between q1/10 and q4/13, this reflects an increase of loan rates of about 4%.

Columns (2) and (3) confirm both the direction and the significance of these results for real estate and commercial and industrial lending, respectively. Banks with higher bailout expectations generated higher yields for real estate loans and commercial and industrial loans. In terms of economic magnitudes, the effects were comparable for real estate loans and total lending. The increase in commercial and industrial loan rates in response to an increase in bailout expectations was approximately around twice as large as the total loan rates.

These positive effects on loan rates, and thus markups as a measure of market power, are in line with the findings by Berger and Roman (2014) and might indicate that loan customers consider a stable credit relationship important. Whereas the failure of a bank for previously conducted credit disbursements to a company may not be disruptive, most companies rely on irrevocable credit commitments and credit lines from these banks as well. Therefore, they may be willing to incur somewhat higher loan interest rates with banks they consider more likely to be rescued in case of distress. However, our setting also differs in important ways from Berger and Roman (2014), who study the contemporaneous effects of TARP support between recipients and non-recipients on (generated) measures of market power. Because we consider solely the reactions of banks that were not directly rescued we explain the within-group variation of interest rates among sound banks. If bailout policies do not alter competitive conditions, as reflected by loan prices, differences in bailout expectations should be uncorrelated. The reported positive significant effect therefore offers important evidence that the dominant safety net effect reported by Berger and Roman (2014) (i.e., rescued banks are considered safer) also extends to banks for which suppliers of funds anticipate bailouts to be more likely.

Positive bank asset interest rates are not the primary channel by which prospective bailouts reduce markups, according to the theoretical model of Hak-

enes and Schnabel (2010) tough. Instead, they propose bank market power, manifested as interest margins, increases because depositors are willing to accept a lower risk premium, which implies lower funding costs for implicitly protected banks. Columns (4) and (5) in Table A.6 show that we cannot reject the null hypothesis of no relationship among bailout expectations, deposits, and total funding interest rates for the whole period, q1/10-q4/13.

3.3. Extrapolation of bailout expectations revisited

Both the absence of reduced required interest rates on the funding side and the positive correlation between lending rates and bailout expectations may be spurious results, due to the extrapolation of bailout expectations after q4/09 from observed bailout behavior between q4/08 and q4/09. We address these concerns with a series of robustness tests and report the results in Table A.7. Out of space considerations, we only provide coefficients for the variable of interest, bailout expectations: we suppress the estimates for the other controls and fixed effects in Equation (2). To begin, in the first panel of Table A.7, we replicate the baseline results from Table A.6 for comparison. Next, in the second panel we provide the results for a sample that excludes banks that were sound in t=1 but failed in t=2 (275, see Figure A.1). According to Hakenes and Schnabel (2010), unsupported banks respond to competition from subsidized peers by taking riskier lending activities to increase their expected returns. We explicitly control for risk taking, but such formerly sound banks may be exactly those in the bold-outlined sample in Figure A.1 that did not experience reduced funding costs and (over)compensated for the competitive pressure from their rescued peers by seeking high yield, high risk projects that eventually led to failure during t=2. Because excluding these failing banks did not reduce the marginal effect significantly though, this test confirmed that our baseline results were not driven by (excessively) risky, unsupported banks.

The third panel of Table A.7 features on the sample indicated by the dotted line in Figure A.1, namely, both TARP and non-TARP banks considered jointly (see also Berger and Roman, 2014; Li, 2013). As Figure A.1 shows, only one TARP bank failed after q4/09. With this robustness test, we still found a positive, significant effect for the interest rates of asset-side yields but no effect on the funding side. It remains unclear whether the lower risk premiums required by banks' financiers reflect a differential effect of TARP or variation in the within-sound bank group of formerly sound, unsupported banks' bailout expectations in the post-TARP period. This ambiguity motivated us to consider asset and liability interest rates in t=2 among only those banks that were sound in t=1.[5]

The specification of Equation (2) for the TARP-only sample in the fourth panel of Table A.7, equivalent to the dashed box in Figure A.1, illustrates that variation in the within-sound bank group drove the positive effect of bailout expectations on bank yields. During q1/10-q4/13, the 548 banks that received TARP funds and operated during period t=2 did not exhibit any significant correlation with yields. The absence of this result affirms the theoretical prediction of Hakenes and Schnabel (2010) that the direct effect of support should be ambiguous and even potentially negative in terms of risk taking. In our study setting, we controlled for the level of risk taking using bank-specific covariates, which exhibited similar magnitudes, significance, and directions across the four samples. The variation of risk-controlled interest rates between TARP and non-TARP banks thus appeared to hinge on the relationship between bailout expectations and loan and funding rates.

Our approach also allows for the extrapolation of bailout expectations from

[5]In unreported tests, we confirmed that our results did not reflect only those banks regarded as "too big to fail," by estimating Equation (2) without the very big banks (Duchin and Sosyura, 2014).

the TARP disbursement period to sound banks to the subsequent period, with the crucial assumption that distressed banks during q4/08-q4/09 are comparable to sound banks as of q1/10. We challenge this assumption though by presenting, in the bottom panel of Table A.7, results based on matched samples between bailed out and sound banks. To ensure that we calculated bailout expectations for sound banks that shared similar characteristics with banks that received TARP funds, we ran propensity score matching. The matching process relied on the vector of bank characteristics and regional control variables X from Equation (1). We specified a 1:1 matching, such that for each distressed bank, we linked one sound bank with the highest propensity score between q4/08 and q4/09. Formally, our propensity score matching method used a logit regression, $E[\text{DIS} = 1]_i = \lambda_0 + \sum_{c=1}^{C} \lambda_c X_{ci} + \varphi_{it}$, to differentiate between TARP recipients from failing banks, whether distressed banks ($DIS = 1$) or sound ones ($DIS = 0$), during the crisis period of q4/08-q4/09. Using a nearest neighbor matching without replacement, we required that each pair was not different at a 1% level, according to the matrix of bank and regional variables X. We present the effect of the matching process and the resulting size of the treatment and control groups in Table A.8, revealing both bias before and a significant reduction in bias after matching.

– Table A.8 around here –

A comparison of distressed and sound banks that were matched (M) and unmatched (U) revealed the importance of an appropriate counterfactual sample when extrapolating bailout expectations. Specifically, unmatched sound banks were significantly better capitalized, more profitable, riskier, larger, more liquid, more retail-funding oriented, and more loan-based in their asset composition. They tended to operate in regional markets with less unemployment and higher real estate prices. Thus, extrapolation of bailout expectations to any sound

banks would appear overly optimistic.

Using only the sample of matched banks to assess the effect of bailout expectations on interest rates in the bottom panel of Table A.7, we confirmed our baseline results for two of the three loan rates we considered. Specifically, the rows indicated by "M" in Table A.8 show the comparability of these institutions with distressed banks. Higher bailout expectations generated higher yields on total loans and commercial and industrial loans, whereas the effect on real estate loan rates was insignificant for the matched sample. The magnitude of positive interest rate effects due to higher rescue probabilities reached twice as high for total and commercial and industrial loans. These results emphasized the importance of extrapolating bailout prospects only to sufficiently similar, sound banks.

Perhaps more important is the result showing that funding costs and deposit interest rates fell by approximately 1 basis point in response to a one standard deviation increase in bailout expectations. Thus, the reduction in required risk premiums predicted by Hakenes and Schnabel (2010) was statistically significant for this matched sample. Though lower than the effect on loan rates, the effect on deposit rates was economically more pronounced, given the average funding cost of 2% instead of 6% for the average loan rates (see Table A.3).

The effects on interest margin components thus appear driven by within-sound bank differences in bailout prospects, rather than differences between TARP and non-TARP recipients. Generating bailout expectations also requires the careful construction of an appropriate counterfactual sample of sound banks that are sufficiently comparable to distressed banks during the TARP disbursement period. With this sample, we found statistically and economically significant effects of increased bailout expectations, in line with theory, including larger loan interest rates and reduced funding rates for banks.

3.4. Timing differences

Most of the concerns about the potentially distortionary effects of bailouts on banking market competition were voiced shortly after TARP was terminated in q4/09 (Beck et al., 2010; Congressional Oversight Panel, 2011). Beyond this focus, another critical question is whether emergency rescues affected interest rates only in the short run or if any potential distortions exhibited a longer duration.

In Table A.9, we present the results of an interaction of generated bailout expectations with year dummies for the years 2010, 2011, 2012, and 2013 when estimating Equation (2). Given our preceding results in Tables A.7 and A.8, we consider only the matched sample. The baseline results did differ significantly across the years after the TARP period, q4/08-q4/09. Regarding loan rates, we found significantly positive effects on total loan rates for the first two years after TARP stopped. Magnitudes declined from the 6 basis point hike in response to the one standard deviation increase in bailout expectations to 3.6 basis points in 2011. Thereafter, the estimated coefficients remained positive but no longer statistically significant. Contrary to the results across all post-TARP years in Table A.7, both real estate and commercial and industrial loans exhibited significantly larger interest rate effects in 2010. After the initial increases in loan rates though, bailout expectations no longer had any impact on credit costs. The predicted reduction of funding rates similarly was significant only immediately after TARP stopped. After 2010, we found no significantly reduced deposit or total funding rates among the sample of matched, sound U.S. banks.

Our results thus suggest that the effect of TARP on non-rescued banks' loan rates was short lived. More generally, the extraordinary circumstances of widespread bank rescues in the midst of the financial crisis may also imply that beliefs on banks likelihood to be rescued were afterwards based on completely

different fundamentals. Overall, we find no support for the concerns of the COP that competitive distortions, in the sense of more expensive credit, prevailed over a longer period of time.

3.5. Loan and deposit growth

In addition to the predicted effects on loan and deposit rates, Hakenes and Schnabel (2010) anticipate volume effects in response to differences in the likelihood of prospective bailouts. In their model, banks subjected to higher prospective bailouts can use their funding advantages to gain loan and deposit market shares from unprotected competitors. The intuition is that protected banks can afford to attract more deposits at given funding rates, because savers perceive those banks as save havens. On the credit side, protected banks can offer more competitive interest rates on loans and thereby expand their lending faster than unprotected banks at a given risk level.

To test for possible volume effects, we detail quarterly changes in the level of loans and deposits during q1/10 and q4/13 in Table A.10. The first columns show quarterly changes in total loans, real estate loans, and commercial and industrial loans as dependent variable. Increasing bailout expectations exerted no statistically significant effect on loan growth in our sample. Any competitive distortions to credit markets in response to TARP thus appear confined to markup pricing (Berger and Roman, 2014) rather than creating an expansion of inefficient lending (Dell'Ariccia and Marquez, 2004).[6] For deposit growth, we again found no evidence that more protected banks enjoyed stronger inflows of deposits.

One possible explanation for the absence of any volume effects could stem

[6]We also tested whether estimated Lerner indices and regional market shares responded to changes in bailout expectations. The Lerner index results did not differ qualitatively from the results for the interest margins. For the regional market shares, we found no statistical effects, similar to the reported changes in loan and deposit volumes.

from the different timing of bailout expectation effects. In the immediate aftermath of the crisis, savers may have been eager to seek save havens, but then they "forgot" about the real possibility of bank failures when determining their required deposit rates (regarding bounded rationality in the subprime crisis, see Gennaioli and Shleifer, 2011). Table A.11 shows the effects of bailout expectations on loan and deposit growth over time: We find no significant loan growth effects in any of the post-TARP periods and only a very weak immediate reduction in deposits in 2010.

Overall, these results indicated no crowding out of deposit taking or loan granting by banks that were more protected, in terms of higher bailout expectations. Thus, competitive distortions among U.S. banks due to TARP apparently were confined to markup pricing in the immediate aftermath of the support program.

3.6. Branching restrictions

As noted by Beck et al. (2010), a major challenge to any bailout scheme, even one with perfectly equal disbursement terms, is that banks already operate under distinct competitive conditions. For example, competitive conditions vary widely across U.S. states: Rice and Strahan (2010) even offer an index to gauge states' various implementations of the Riegle-Neal Act, permitting inter- and intra-state branching. Differences in the timing of states' regulation choices to ease entry by out-of-state banks affected lending to small and medium enterprises. Koetter et al. (2012) also show that these differences in branching restrictions after Riegle-Neal can explain differences in Lerner indices across U.S. banks from different states. Similarly, TARP interventions may have led to more pronounced price competition effects in regional banking markets that already were less competitive. By distinguishing three groups of regional banking markets by the their values of state-specific branching restrictions, we

derive a model of the interaction of bailout expectations with the three indicator variables for markets with low, medium, and high restriction levels.

Regarding the effects on total loan rates, the results in Table A.12 indicate an increasing effect of larger bailout expectations. A one standard deviation increase in bailout expectations in a comparably competitive state (e.g., Michigan, with zero restrictions according to Rice and Strahan (2010)) prompts a 6.5 basis point hike in mean total loan rates; this increase was 11 basis points in the least competitive states, such as Texas and Iowa. The significance of this pattern varies for real estate and commercial versus industrial lending, but it remains qualitatively intact. Banks that operated in more competitive environments prior to TARP, which presumably already faced thin economic margins, experienced the weakest hikes due to higher bailout expectations. In addition, higher bailout expectations reduced the funding costs in the regional banking markets that were least regulated. Banks operating in increasingly uncompetitive markets instead exhibited no significant reduction in deposit rates.

Overall, the concern that equity support for certain banks could aggravate existing differences in the level of market power seem justified for credit markets. Higher bailout expectations increased loan rates, especially in less competitive markets. With respect to deposit taking, only the least regulated states suffered the negative effect of bailout expectations on interest rates.

4. Conclusion

We have investigated if bank bailouts between q4/08 and q4/09 affected the pricing and growth of loans and deposits among U.S. banks after the program stopped. Specifically, we used political indicators to identify the bailout expectations of U.S. banks through observed TARP equity support, relative to failure, between q4/08 and q4/09. From this revealed assessment of regulators about

which types of banks warrant a bailout, we extrapolate bailout expectations among sound banks after TARP stopped.

This empirical test therefore addresses whether bank rescue schemes affected the competitive behavior of not only rescued but also sound banks. Political indicators of the voting behavior on TARP, party membership, and membership on the financial subcommittee are appropriate exclusion restrictions for explaining the probability that a bank will receive a bailout. After controlling for risk differences across banks and local macro conditions, these covariates effectively explain TARP support, but they remain uncorrelated with key measures of pricing power, namely, interest rates on loans and deposits.

Using our model parameters to explain TARP support, we generate bailout expectations for the group of sound banks after q4/09. The differences in loan and deposit rates can be explained by these expectations, though doing so requires an adequate counterfactual sample of sound banks that is sufficiently similar to distressed banks until q4/09. After matching distressed banks with sound banks, we demonstrate that an increase in bailout expectations by one standard deviation has a statically significant effect on loan rates. However, the economic effect on total loan rates is very small. An increase of bailout expectations by one standard deviation would increase loan interest rates by 2.7 basis points. Deposit rates fall by around 1 basis point, which may reflect lower risk premiums required by savers for protected banks. The small economic effects indicate that TARP, despite of being statistically significantly related to loan and deposit yields after 2009, did not distort loan and deposit rates of sound banks economically.

Further tests indicate that the interest rate effects of bailout expectations pertain primarily to the immediate aftermath of TARP but become insignificant after 2010. Likewise, we find little indication that protected banks expanded

either their lending or deposit taking at the expense of less protected banks. The concerns of the Congressional Oversight Panel (2011), about creating sustained differences in regional banking market competition, to the detriment of smaller banks, thus appear unfounded. However, loan rate increases were largest in states that had been most restrictive in the implementation of interstate branching. Thus, TARP might have aggravated differences in banking competition that existed prior to the rescue period.

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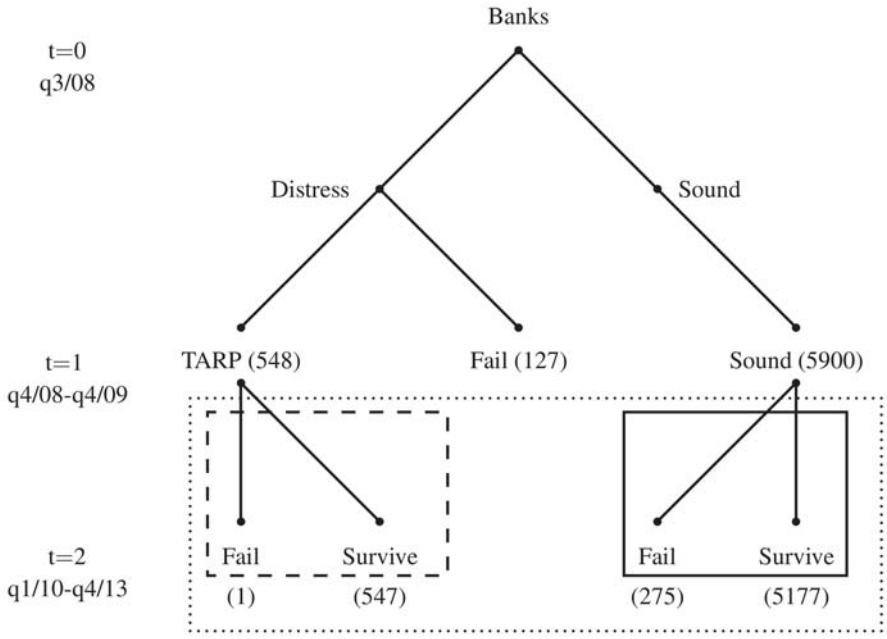
Appendix A. Figures and Tables

Figure A.1: Empirical strategy



Notes: This figure shows the different events and bank types for the two periods in our analysis. We start with all banks commercial banks in $t = 0$, before the crisis. During the crisis period t=1, some banks became distressed (left branch) and either received government support through TARP or failed. The right branch in t=1 highlights the sound banks that survived without TARP until at least the end of q4/09. For both types, the number of banks are indicated in parentheses. Then t=2 shows the possible event for the period q1/10-q4/13, when TARP banks either survive until the end of q4/13 or fail during the after-crisis period, as depicted on the left side of t=2. The same possibilities apply for the sound banks and are depicted on the right side of t=2. A solid box surrounds sound banks in t=2, whereas the dashed box indicates the TARP banks in t=2. The dotted box includes all banks after q4/09. We exclude 9 banks that failed on an individual level while their holding company was receiving TARP.

Table A.1: Distressed and sound banks

	TARP	Fail	Entry	Sound	Survivor
q4/08	171	12	0	5837	6008
q1/09	239	24	1	5745	5985
q2/09	81	21	33	5883	5997
q3/09	30	42	9	5925	5964
q4/09	27	37	0	5900	5927
q1/10	0	35	0	5892	5892
q2/10	0	36	6	5856	5862
q3/10	0	31	1	5831	5832
q4/10	0	27	0	5805	5805
q1/11	0	24	2	5781	5783
q2/11	0	19	10	5764	5774
q3/11	0	24	7	5750	5757
q4/11	0	17	4	5740	5744
q1/12	0	13	8	5731	5739
q2/12	0	11	14	5728	5742
q3/12	0	10	2	5732	5734
q4/12	0	6	6	5728	5734
q1/13	0	3	7	5731	5738
q2/13	0	11	2	5727	5729
q3/13	0	6	3	5723	5726
q4/13	0	2	0	5724	5724

Notes: The columns of Table A.1 lists the number of banks that received assistance from the trouble asset relief program (TARP), failed (Fail), entered the sample (Entry), or were sound, not in distress at a particular point in time. The last column shows the number of banks that survived at the end of a quarter between q4/08 and q4/13. In this table we include the 9 banks that failed during the crisis period while their holding company received TARP, though we exclude these cases in our regression analysis.

Table A.2: Size of TARP banks

		TARP		Sound		TARP		Sound
	All	Forced	Other		All	Forced	Other	
q4/08	4023.59	2532.19	1491.39	2940.18	23.53	422.03	9.04	0.54
q1/09	4118.00	2466.66	1651.35	2727.04	10.04	411.11	4.09	0.52
q2/09	4122.16	2443.76	1678.40	2687.32	8.40	407.29	3.46	0.52
q3/09	4253.08	2468.62	1784.46	2742.65	8.16	411.44	3.46	0.53
q4/09	4425.83	2479.84	1946.00	2813.40	8.08	413.31	3.59	0.55
q1/10	4913.99	2987.70	1926.29	2844.03	8.97	497.95	3.55	0.56
q2/10	4823.35	2890.65	1932.70	2892.47	8.80	481.78	3.57	0.57
q3/10	4933.49	2973.26	1960.23	2965.70	9.00	495.54	3.62	0.58
q4/10	4937.41	2980.60	1956.81	2999.74	9.01	496.77	3.61	0.59
q1/11	5063.04	3075.87	1987.17	3054.09	9.24	512.64	3.67	0.60
q2/11	5218.12	3176.24	2041.87	3155.46	9.52	529.37	3.77	0.62
q3/11	5356.53	3264.77	2091.76	3292.33	9.77	544.13	3.86	0.64
q4/11	5425.53	3210.25	2215.28	3354.31	9.90	642.05	4.08	0.65
q1/12	5451.84	3233.67	2218.17	3414.61	9.95	646.73	4.09	0.66
q2/12	5508.04	3216.00	2292.04	3534.33	10.05	643.20	4.22	0.69
q3/12	5614.10	3370.17	2243.92	3588.58	10.24	561.70	4.14	0.70
q4/12	5880.63	3491.13	2389.50	3681.31	10.73	581.85	4.41	0.71
q1/13	5904.50	3540.57	2363.92	3691.49	10.77	590.10	4.36	0.71
q2/13	5961.98	3567.85	2394.13	3693.76	10.90	594.64	4.43	0.71
q3/13	6084.01	3659.43	2424.58	3752.08	11.12	609.90	4.48	0.72
q4/13	6185.00	3689.88	2495.12	3822.83	11.31	614.98	4.61	0.74

Notes: The columns of Table A.2 show the sum (average) of total assets in $billion per quarter between q4/08-q4/13 for the groups of TARP and sound banks. We further split the sample of TARP banks according to those that were forced to accept TARP: Citigroup, JP Morgan, Bank of America (including Merrill Lynch), Goldman Sachs, Morgan Stanley, State Street, Bank of New York Mellon, and Wells Fargo (including Wachovia).

Table A.3: Descriptive statistics

	q4/08-q4/09						q1/10-q4/13					
	TARP		Fail		Sound		TARP		Fail		Sound	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Exclusions restrictions first stage: political variables												
2nd Vote	0.5124	0.5000	0.3971	0.4898	0.4769	0.4995	.	.	.	.	.	.
SC0709	0.1200	0.3251	0.1408	0.3481	0.0765	0.2658	.	.	.	.	.	.
SC0911	0.1191	0.3240	0.1492	0.3566	0.0692	0.2539	.	.	.	.	.	.
Party0709	0.4717	0.4993	0.3571	0.4797	0.4455	0.4970	.	.	.	.	.	.
Party0911	0.5096	0.5000	0.4118	0.4927	0.4621	0.4986	.	.	.	.	.	.
Dependent variables second stage: loan and funding interest rates												
R^{TL}	0.0601	0.0089	0.0552	0.0119	0.0654	0.0099	0.0567	0.0090	0.0532	0.0081	0.0608	0.0095
R^{RE}	0.0593	0.0088	0.0546	0.0097	0.0642	0.0097	0.0557	0.0085	0.0529	0.0093	0.0595	0.0090
R^{CI}	0.0616	0.0183	0.0626	0.0228	0.0664	0.0200	0.0599	0.0190	0.0611	0.0230	0.0634	0.0203
R^{DEP}	0.0205	0.0068	0.0312	0.0077	0.0213	0.0068	0.0094	0.0050	0.0162	0.0057	0.0098	0.0049
R^{TF}	0.0213	0.0067	0.0307	0.0080	0.0219	0.0067	0.0105	0.0053	0.0171	0.0057	0.0104	0.0051
Main explanatory variable second stage: bailout expectations												
Bailout expectation	0.9842	0.0813	0.2492	0.3882	0.9082	0.2663	0.9350	0.2171	0.1012	0.2729	0.9501	0.1899
Independent variables first/second stage: bank and regional characteristics												
EQ	0.1028	0.0323	0.0594	0.0295	0.1082	0.0497	0.1034	0.0255	0.0498	0.0210	0.1095	0.0348
RoA	-0.0005	0.0098	-0.0266	0.0194	0.0015	0.0120	0.0021	0.0086	-0.0217	0.0179	0.0043	0.0076
NPA	0.0340	0.0243	0.1246	0.0594	0.0374	0.0430	0.0414	0.0342	0.1513	0.0473	0.0303	0.0323
Size	13.3297	1.5316	12.7946	1.5477	11.8519	1.1376	13.2748	1.4703	12.2225	1.0087	11.9338	1.1373
Cash	0.0495	0.0576	0.0635	0.0641	0.0630	0.0637	0.0753	0.0688	0.1018	0.0674	0.0951	0.0825
Deposits	0.7862	0.0779	0.8361	0.1255	0.8262	0.0765	0.8253	0.0631	0.8912	0.0542	0.8469	0.0588
Loans	0.7210	0.1250	0.7279	0.1250	0.6633	0.1512	0.6688	0.1295	0.7040	0.0940	0.6051	0.1533
CS index	346.4701	86.0662	345.3248	68.8263	304.9202	76.1083	318.3926	76.3886	299.5813	53.4818	286.0212	68.6227
UR	0.0860	0.0251	0.0822	0.0257	0.0782	0.0293	0.0848	0.0233	0.0983	0.0218	0.0783	0.0270

Notes: Table A.3 shows descriptive statistics for banks that received assistance from TARP, failed (Failed), or did not have severe troubles (Sound), and thus received no money from TARP and did not fail. The table presents descriptive statistics (mean and standard deviation) for the crisis period between the last quarter of 2008 and the fourth quarter of 2009 and for the subsequent period until the last quarter of 2013. Variable definitions are in Table A.13.

Table A.4: Bailout regression results

	Dependent variable: Tarp/Fail-Dummy					
	(1)	(2)	(3)	(4)	(5)	(6)
2nd Vote	0.0222**	0.0226**				
	(0.0104)	(0.0099)				
SC0709	0.0294*		-0.0097			
	(0.0163)		(0.0075)			
SC0911	-0.0372***			-0.0162**		
	(0.0139)			(0.0074)		
Party0709	0.0230**				0.0160*	
	(0.0092)				(0.0084)	
Party0911	-0.0164**					0.0108
	(0.0078)					(0.0074)
L.EQ	1.5688***	1.4085***	1.3041***	1.3120***	1.3750***	1.3426***
	(0.4347)	(0.3580)	(0.3558)	(0.3537)	(0.3483)	(0.3366)
L.RoA	0.8323***	0.9762***	0.8671***	0.8670***	0.8425***	0.9317***
	(0.3190)	(0.3006)	(0.2606)	(0.2545)	(0.2708)	(0.2914)
L.NPA	-0.5744***	-0.5675***	-0.6072***	-0.5998***	-0.6488***	-0.6375***
	(0.1156)	(0.1188)	(0.1281)	(0.1254)	(0.1276)	(0.1276)
L.Size	0.0042	0.0032	0.0029	0.0031	0.0034	0.0032
	(0.0030)	(0.0027)	(0.0030)	(0.0030)	(0.0030)	(0.0029)
L.Cash	-0.1893***	-0.1998***	-0.1852***	-0.1787***	-0.2108***	-0.2121***
	(0.0722)	(0.0674)	(0.0708)	(0.0693)	(0.0729)	(0.0754)
L.Deposits	-0.0372	-0.0305	-0.0573	-0.0625	-0.0524	-0.0538
	(0.0653)	(0.0619)	(0.0702)	(0.0737)	(0.0641)	(0.0664)
L.Loans	-0.1121**	-0.1042**	-0.0745**	-0.0700**	-0.0956**	-0.0900**
	(0.0513)	(0.0420)	(0.0366)	(0.0356)	(0.0402)	(0.0397)
L.CS index	0.0001***	0.0001***	0.0002***	0.0002***	0.0001**	0.0002***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
L.UR	0.0963	0.0484	0.0775	0.0831	0.0869	0.0677
	(0.1443)	(0.1291)	(0.1591)	(0.1625)	(0.1549)	(0.1565)
Observations	675	675	675	675	675	675
Pseudo R2	0.9330	0.9258	0.9179	0.9201	0.9211	0.9188
Log Likelihood	-21.87	-24.20	-26.78	-26.08	-25.77	-26.50
F-Val	15.53					
p-Val	0.0083					

Notes: Table A.4 contains the results for regressions explaining whether a bank received assistance from TARP between q4/08 and q4/09 (1) or failed (0), as outlined in Equation (1). Only banks that received TARP or failed during this period are considered. The prefix "L" indicates that a variable was lagged by one quarter. Coefficients are marginal effects. The first column shows results with bank characteristics, all political variables, and the regional unemployment rate and Case Shiller index on U.S. state level as explanatory variables. The remaining columns show results for each political variable separately. The F-value and reported p-value denote whether all political variables are jointly significant in explaining whether a bank receives government support or fails. Variable definitions are in Table A.13. Clustered (bank level) standard errors are in parentheses. ***, ** and * indicate significant coefficients at the 1%, 5%, and 10% levels, respectively.

Table A.5: Weak correlation test of political instruments and yields

Dependent variable:	Interest rates R				
	total loans	real estate loans	C&I loans	deposits	total fundings
	(1)	(2)	(3)	(4)	(5)
2nd Vote	0.0007	-0.0031	0.0034	-0.0003	-0.0003
	(0.0014)	(0.0026)	(0.0037)	(0.0004)	(0.0004)
SC0709	-0.0008	-0.0040*	0.0019	-0.0002	-0.0001
	(0.0015)	(0.0023)	(0.0062)	(0.0004)	(0.0005)
SC0911	0.0011	0.0040*	-0.0053	-0.0004	-0.0004
	(0.0019)	(0.0023)	(0.0066)	(0.0005)	(0.0005)
Party0709	0.0020*	0.0011	0.0117***	0.0003	0.0004
	(0.0012)	(0.0012)	(0.0040)	(0.0007)	(0.0008)
Party0911	-0.0032**	-0.0012	-0.0161***	0.0002	-0.0000
	(0.0016)	(0.0016)	(0.0045)	(0.0008)	(0.0009)
L.EQ	0.0099**	0.0083*	0.0142	-0.0038***	-0.0102***
	(0.0048)	(0.0049)	(0.0109)	(0.0013)	(0.0015)
L.RoA	0.0385***	0.0279***	0.0453***	-0.0142***	-0.0155***
	(0.0056)	(0.0066)	(0.0134)	(0.0017)	(0.0017)
L.NPA	-0.0253***	-0.0283***	-0.0026	-0.0046***	-0.0036***
	(0.0033)	(0.0033)	(0.0078)	(0.0010)	(0.0010)
L.Size	-0.0012	-0.0016***	-0.0002	0.0010***	0.0009***
	(0.0007)	(0.0006)	(0.0016)	(0.0002)	(0.0002)
L.Cash	0.0018*	0.0021**	0.0035	-0.0005	-0.0003
	(0.0010)	(0.0010)	(0.0025)	(0.0003)	(0.0003)
L.Deposits	0.0043**	0.0036**	-0.0066	0.0008	-0.0053***
	(0.0018)	(0.0017)	(0.0053)	(0.0007)	(0.0010)
L.Loans	-0.0109***	-0.0082***	-0.0107***	0.0011***	0.0007**
	(0.0010)	(0.0009)	(0.0028)	(0.0003)	(0.0004)
L.CS index	0.0000	0.0000*	0.0000	0.0000***	0.0000***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
L.UR	0.0004	-0.0029	0.0002	0.0020***	0.0021***
	(0.0018)	(0.0024)	(0.0065)	(0.0007)	(0.0008)
Constant	0.0765***	0.0822***	0.0718***	-0.0010	0.0065***
	(0.0091)	(0.0082)	(0.0193)	(0.0022)	(0.0023)
TE	YES	YES	YES	YES	YES
FE	YES	YES	YES	YES	YES
YE × SE	YES	YES	YES	YES	YES
No. of Banks	5416	5416	5416	5416	5416
Observations	83550	83550	83550	83550	83550
Adj. R2	0.84	0.70	0.55	0.93	0.93
F-Val	1.12	1.10	2.80	0.68	0.52
p-Val	0.3492	0.3591	0.0158	0.6404	0.7582

Notes: Table A.5 represents a panel regression with bank (FE), quarter (TE), and interacted year-state (YE × SE) fixed effects for the period q1/10-q4/13. The F-values and the reported p-values indicate whether all political variables are jointly significant in explaining yields on loans and funding in the period after q4/09. The prefix "L" indicates that a variable is lagged by one quarter. Variable definitions are in Table A.13. Clustered (bank level) standard errors are in parentheses. ***, ** and * indicate significant coefficients at the 1%, 5%, and 10% levels, respectively.

Table A.6: Bailout expectation effects on lending and funding rates

Dependent variable:	Interest rates R				
	total loans	real estate loans	C&I loans	deposits	total fundings
	(1)	(2)	(3)	(4)	(5)
Bailout expectation	0.0014***	0.0012**	0.0025**	-0.0001	0.0000
	(0.0004)	(0.0005)	(0.0011)	(0.0001)	(0.0001)
L.EQ	0.0073	0.0058	0.0096	-0.0037***	-0.0102***
	(0.0049)	(0.0049)	(0.0113)	(0.0013)	(0.0015)
L.RoA	0.0321***	0.0220***	0.0335**	-0.0139***	-0.0155***
	(0.0050)	(0.0063)	(0.0136)	(0.0017)	(0.0018)
L.NPA	-0.0223***	-0.0256***	0.0031	-0.0047***	-0.0036***
	(0.0032)	(0.0034)	(0.0080)	(0.0010)	(0.0011)
L.Size	-0.0012*	-0.0017***	-0.0003	0.0010***	0.0009***
	(0.0007)	(0.0006)	(0.0016)	(0.0002)	(0.0002)
L.Cash	0.0022**	0.0025**	0.0043*	-0.0005	-0.0003
	(0.0010)	(0.0010)	(0.0025)	(0.0003)	(0.0004)
L.Deposits	0.0043**	0.0036**	-0.0065	0.0008	-0.0053***
	(0.0018)	(0.0017)	(0.0053)	(0.0007)	(0.0010)
L.Loans	-0.0107***	-0.0081***	-0.0105***	0.0011***	0.0007**
	(0.0010)	(0.0009)	(0.0028)	(0.0003)	(0.0004)
L.CS index	0.0000	0.0000	0.0000	0.0000***	0.0000***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
L.UR	0.0001	-0.0031	-0.0005	0.0020***	0.0022***
	(0.0018)	(0.0024)	(0.0065)	(0.0007)	(0.0008)
Constant	0.0756***	0.0811***	0.0691***	-0.0009	0.0066***
	(0.0091)	(0.0082)	(0.0191)	(0.0022)	(0.0023)
TE	YES	YES	YES	YES	YES
FE	YES	YES	YES	YES	YES
YE × SE	YES	YES	YES	YES	YES
No. of Banks	5416	5416	5416	5416	5416
Observations	83550	83550	83550	83550	83550
Adj. R2	0.84	0.70	0.55	0.93	0.93

Notes: Table A.6 shows regression results for Equation (2). Each regression includes bank (FE), quarter (TE), and interacted year-state (YE × SE) fixed effects for the period q1/10-q4/12. The prefix "L" indicates that a variable is lagged by one quarter. Variable definitions are in Table A.13. Clustered (bank level) standard errors are in parentheses. ***, ** and * indicate significant coefficients at the 1%, 5%, and 10% levels, respectively.

Table A.7: Validity of extrapolated bailout expectations

Dependent variable:	Interest rates R				
	total loans	real estate loans	C&I loans	deposits	total fundings
	(1)	(2)	(3)	(4)	(5)
Baseline					
Bailout expectation	0.0014***	0.0012**	0.0025**	-0.0001	0.0000
	(0.0004)	(0.0005)	(0.0011)	(0.0001)	(0.0001)
Adj. R2	0.8408	0.7022	0.5494	0.9262	0.9256
No. of banks	5416	5416	5416	5416	5416
Observations	83550	83550	83550	83550	83550
Without failures					
Bailout expectation	0.0013***	0.0011**	0.0023**	-0.0001	-0.0000
	(0.0005)	(0.0005)	(0.0011)	(0.0001)	(0.0001)
Adj. R2	0.8413	0.7026	0.5504	0.9245	0.9238
No. of banks	5177	5177	5177	5177	5177
Observations	82268	82268	82268	82268	82268
With TARP					
Bailout expectation	0.0013***	0.0011**	0.0027***	-0.0001	-0.0000
	(0.0004)	(0.0004)	(0.0010)	(0.0001)	(0.0001)
Adj. R2	0.8370	0.7000	0.5515	0.9246	0.9234
No. of banks	5964	5964	5964	5964	5964
Observations	92315	92315	92315	92315	92315
TARP only					
Bailout expectation	0.0005	0.0005	0.0039	-0.0002	0.0000
	(0.0009)	(0.0009)	(0.0025)	(0.0003)	(0.0004)
Adj. R2	0.7777	0.6415	0.5737	0.9170	0.9106
No. of banks	548	548	548	548	548
Observations	8765	8765	8765	8765	8765
Matched sample					
Bailout expectation	0.0024**	0.0024	0.0043*	-0.0006*	-0.0007**
	(0.0011)	(0.0014)	(0.0025)	(0.0003)	(0.0003)
Adj. R2	0.8454	0.6934	0.6226	0.9332	0.9332
No. of banks	597	597	597	597	597
Observations	8654	8654	8654	8654	8654
TE	YES	YES	YES	YES	YES
FE	YES	YES	YES	YES	YES
YE × SE	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES

Notes: Table A.7 shows regression results for Equation (2) for different samples. The first block shows results for the baseline sample that resembles the solid box on the right side in t=2 of Figure A.1. The second block excludes failed banks from this sample. The third block comprises all banks after q4/09, as appear in the dotted box. The fourth block includes TARP banks only. The fifth block includes only banks from the baseline sample that are 1:1 matches with the distressed banks in the crisis period, according to propensity score matching. Each regression includes bank (FE), quarter (TE), and interacted year-state (YE × SE) fixed effects, as well as all other control variables from the baseline regression for the period q1/10-q4/13. Variable definitions are in Table A.13. Clustered (bank level) standard errors are in parentheses. ***, ** and * indicate significant coefficients at the 1%, 5%, and 10% levels, respectively.

Table A.8: Covariate differences matched versus unmatched samples

Variable	Unmatched/	Mean		Bias(%)	Reduction of	T-test	
	Matched	Distressed	Sound		Bias (%)	T-test	P-Val
L.EQ	U	0.0942	0.1126	-44.10		-9.40	0.0000
	M	0.0959	0.0944	3.70	91.50	0.81	0.4200
L.RoA	U	-0.0050	0.0028	-68.70		-20.46	0.0000
	M	-0.0037	-0.0033	-3.40	95.00	-0.59	0.5580
L.NPA	U	0.0493	0.0309	46.70		13.78	0.0000
	M	0.0460	0.0458	0.50	98.90	0.08	0.9360
L.Size	U	13.06	11.82	93.90		25.32	0.0000
	M	12.97	12.96	0.50	99.50	0.08	0.9370
L.Cash	U	0.0500	0.0617	-22.40		-5.05	0.0000
	M	0.0500	0.0509	-1.60	93.00	-0.33	0.7380
L.Deposits	U	0.7986	0.8219	-30.70		-7.51	0.0000
	M	0.7998	0.7978	2.70	91.40	0.39	0.6940
L.Loans	U	0.7268	0.6582	50.50		11.27	0.0000
	M	0.7257	0.7328	-5.20	89.60	-1.08	0.2810
L.CS index	U	344.33	304.85	49.90		12.43	0.0000
	M	341.31	345.72	-5.60	88.80	-0.89	0.3750
L.UR	U	0.0816	0.0773	19.90		4.55	0.0000
	M	0.0815	0.0815	-0.10	99.40	-0.02	0.9810

Notes: Table A.8 shows the outcome of a 1:1 propensity score matching between sound and distressed banks in the crisis period, including the mean for each variable for the treated and control group and for the sample of matched (M) and unmatched (U) banks. It further shows the reduction in bias for each variable between the groups and significant differences in means before and after matching.

Table A.9: Bailout expectation effects on interest rates over time

Dependent variable:	Interest rates R				
	total loans	real estate loans	C&I loans	deposits	total fundings
	(1)	(2)	(3)	(4)	(5)
Bailout expectation (2010)	0.0037**	0.0039**	0.0058**	-0.0011***	-0.0012***
	(0.0016)	(0.0019)	(0.0028)	(0.0003)	(0.0003)
Bailout expectation (2011)	0.0019**	0.0016	0.0046	-0.0004	-0.0005
	(0.0009)	(0.0013)	(0.0029)	(0.0003)	(0.0003)
Bailout expectation (2012)	0.0012	0.0017	0.0016	0.0001	-0.0000
	(0.0010)	(0.0013)	(0.0031)	(0.0004)	(0.0004)
Bailout expectation (2013)	-0.0004	-0.0009	0.0008	0.0001	-0.0001
	(0.0012)	(0.0014)	(0.0035)	(0.0005)	(0.0005)
L.EQ	0.0159**	0.0140	0.0357	0.0010	-0.0060
	(0.0071)	(0.0097)	(0.0227)	(0.0032)	(0.0045)
L.RoA	0.0253**	0.0030	0.0366	-0.0085**	-0.0074**
	(0.0126)	(0.0196)	(0.0338)	(0.0037)	(0.0034)
L.NPA	-0.0302***	-0.0364***	0.0022	-0.0059*	-0.0072**
	(0.0076)	(0.0076)	(0.0226)	(0.0031)	(0.0031)
L.Size	0.0032	0.0037	0.0045	0.0012**	0.0011**
	(0.0027)	(0.0027)	(0.0039)	(0.0005)	(0.0005)
L.Cash	0.0087	0.0042	0.0065	-0.0023*	-0.0020
	(0.0063)	(0.0061)	(0.0110)	(0.0012)	(0.0012)
L.Deposits	0.0120***	0.0101**	0.0019	0.0047**	-0.0025
	(0.0045)	(0.0049)	(0.0132)	(0.0021)	(0.0037)
L.Loans	-0.0074***	-0.0069***	0.0000	0.0004	-0.0001
	(0.0023)	(0.0024)	(0.0069)	(0.0011)	(0.0012)
L.CS index	-0.0000	-0.0000	0.0000	0.0000**	0.0000**
	(0.0000)	(0.0000)	(0.0001)	(0.0000)	(0.0000)
L.UR	0.0052	0.0066	-0.0026	0.0031	0.0027
	(0.0053)	(0.0068)	(0.0170)	(0.0022)	(0.0023)
Constant	0.0118	0.0006	-0.0004	-0.0060	0.0033
	(0.0384)	(0.0384)	(0.0568)	(0.0070)	(0.0077)
TE	YES	YES	YES	YES	YES
FE	YES	YES	YES	YES	YES
YE × SE	YES	YES	YES	YES	YES
No. of Banks	597	597	597	597	597
Observations	8654	8654	8654	8654	8654
Adj. R2	0.85	0.70	0.62	0.93	0.93

Notes: Table A.9 shows regression results for Equation (2), in which bailout expectations are interacted with year dummies for 2010, 2011, 2012, and 2013. Each regression includes bank (FE), quarter (TE), and interacted year-state (YE × SE) fixed effects for the period q1/10-q4/12. The prefix "L" indicates that a variable is lagged by one quarter. Variable definitions are in Table A.13. Clustered (bank level) standard errors are in parentheses. ***, ** and * indicate significant coefficients at the 1%, 5%, and 10% levels, respectively.

Table A.10: Loan and deposit growth

Dependent variable:	Loan and deposit growth			
	Δtotal loans	Δreal estate loans	ΔC&I loans	Δdeposits
	(1)	(2)	(3)	(4)
Bailout expectation	-0.0010	-0.0089	0.0051	-0.0114
	(0.0075)	(0.0086)	(0.0168)	(0.0078)
L.EQ	0.7346***	0.7026***	0.8178***	0.6364***
	(0.1521)	(0.1644)	(0.1478)	(0.1440)
L.RoA	-0.5042***	-0.3610**	-0.2675	-0.3460*
	(0.1701)	(0.1642)	(0.3074)	(0.1897)
L.NPA	-0.4375***	-0.4754***	-0.3885***	-0.1941***
	(0.0570)	(0.0626)	(0.1352)	(0.0649)
L.Size	-0.0444***	-0.0409***	-0.0590**	-0.0972***
	(0.0148)	(0.0145)	(0.0251)	(0.0106)
L.Cash	0.0150	-0.0119	0.0539	-0.1245**
	(0.0363)	(0.0412)	(0.0712)	(0.0574)
L.Deposits	-0.0557*	-0.0378	-0.0738	-0.4455***
	(0.0332)	(0.0383)	(0.0757)	(0.0548)
L.Loans	-0.1599***	-0.1323***	-0.1914***	0.2264***
	(0.0300)	(0.0313)	(0.0551)	(0.0423)
L.CS index	0.0002	0.0003*	-0.0001	0.0000
	(0.0001)	(0.0002)	(0.0004)	(0.0001)
L.UR	-0.0286	0.1375	-0.3583*	-0.1055
	(0.0733)	(0.1179)	(0.2046)	(0.0768)
Constant	0.5783***	0.4693**	1.0096***	1.4506***
	(0.2003)	(0.2089)	(0.3803)	(0.1675)
TE	YES	YES	YES	YES
FE	YES	YES	YES	YES
YE × SE	YES	YES	YES	YES
No. of Banks	597	597	597	597
Observations	8654	8654	8653	8654
Adj. R2	0.27	0.26	0.07	0.22

Notes: Table A.10 shows regression results for Equation (2) and uses quarterly growth rates of total loans, real estate loans, commercial and industrial loans, and deposits as dependent variables. Each regression includes bank (FE), quarter (TE), and interacted year-state (YE × SE) fixed effects for the period q1/10-q4/12. The prefix "L" indicates that a variable is lagged by one quarter. Variable definitions are in Table A.13. Clustered (bank level) standard errors are in parentheses. ***, ** and * indicate significant coefficients at the 1%, 5%, and 10% levels, respectively.

Table A.11: Loan and deposit growth over time

Dependent variable:	Loan and deposit growth			
	Δtotal loans	Δreal estate loans	ΔC&I loans	Δdeposits
	(1)	(2)	(3)	(4)
Bailout expectation (2010)	-0.0033	-0.0092	-0.0001	-0.0167*
	(0.0078)	(0.0089)	(0.0185)	(0.0089)
Bailout expectation (2011)	-0.0052	-0.0133	-0.0050	-0.0090
	(0.0079)	(0.0091)	(0.0181)	(0.0092)
Bailout expectation (2012)	0.0028	-0.0116	0.0177	-0.0086
	(0.0106)	(0.0112)	(0.0232)	(0.0083)
Bailout expectation (2013)	0.0132	0.0071	0.0328	-0.0000
	(0.0135)	(0.0150)	(0.0242)	(0.0117)
L.EQ	0.7159***	0.6875***	0.7773***	0.6202***
	(0.1640)	(0.1758)	(0.1602)	(0.1493)
L.RoA	-0.4853***	-0.3448**	-0.2270	-0.3311*
	(0.1704)	(0.1657)	(0.3042)	(0.1898)
L.NPA	-0.4317***	-0.4723***	-0.3762***	-0.1843***
	(0.0574)	(0.0639)	(0.1358)	(0.0666)
L.Size	-0.0486***	-0.0443***	-0.0680**	-0.1009***
	(0.0168)	(0.0163)	(0.0278)	(0.0109)
L.Cash	0.0195	-0.0082	0.0637	-0.1210**
	(0.0361)	(0.0409)	(0.0715)	(0.0578)
L.Deposits	-0.0593*	-0.0412	-0.0814	-0.4488***
	(0.0334)	(0.0383)	(0.0758)	(0.0548)
L.Loans	-0.1620***	-0.1343***	-0.1955***	0.2246***
	(0.0300)	(0.0311)	(0.0548)	(0.0425)
L.CS index	0.0002	0.0003*	-0.0001	0.0000
	(0.0001)	(0.0002)	(0.0004)	(0.0001)
L.UR	-0.0302	0.1383	-0.3632*	-0.1079
	(0.0732)	(0.1178)	(0.2045)	(0.0767)
Constant	0.6412***	0.5206**	1.1586***	1.5097***
	(0.2279)	(0.2318)	(0.4104)	(0.1745)
TE	YES	YES	YES	YES
FE	YES	YES	YES	YES
YE × SE	YES	YES	YES	YES
No. of Banks	597	597	597	597
Observations	8654	8654	8653	8654
Adj. R2	0.27	0.26	0.07	0.22

Notes: Table A.11 shows regression results for Equation (2) and uses quarterly growth rates of total loans, real estate loans, commercial and industrial loans, and deposits as dependent variables. Bailout expectations are interacted with year dummies for 2010, 2011, 2012, and 2013. Each regression includes bank (FE), quarter (TE), and interacted year-state (YE × SE) fixed effects for the period q1/10-q4/12. The prefix "L" indicates that a variable is lagged by one quarter. Variable definitions are in Table A.13. Clustered (bank level) standard errors are in parentheses. ***, ** and * indicate significant coefficients at the 1%, 5%, and 10% levels, respectively.

Table A.12: Branching restrictions

Dependent variable:	Interest rates R				
	total loans	real estate loans	C&I loans	deposits	total fundings
	(1)	(2)	(3)	(4)	(5)
Bailout expectation (restriction low)	0.0034*	0.0037	0.0022	-0.0010**	-0.0013***
	(0.0020)	(0.0026)	(0.0049)	(0.0004)	(0.0005)
Bailout expectation (restriction medium)	0.0040**	0.0051***	0.0112***	-0.0003	-0.0004
	(0.0017)	(0.0019)	(0.0038)	(0.0005)	(0.0005)
Bailout expectation (restriction high)	0.0059**	0.0060**	0.0064	0.0001	-0.0001
	(0.0029)	(0.0029)	(0.0041)	(0.0009)	(0.0009)
L.EQ	0.0328**	0.0362***	0.0658**	0.0039	-0.0030
	(0.0134)	(0.0096)	(0.0271)	(0.0033)	(0.0044)
L.RoA	0.0360*	0.0025	-0.0014	-0.0061	-0.0040
	(0.0184)	(0.0228)	(0.0367)	(0.0062)	(0.0060)
L.NPA	-0.0154*	-0.0176*	0.0034	-0.0099***	-0.0106***
	(0.0092)	(0.0106)	(0.0253)	(0.0036)	(0.0036)
L.Size	0.0040	0.0036	0.0098*	0.0022***	0.0021***
	(0.0028)	(0.0026)	(0.0054)	(0.0005)	(0.0005)
L.Cash	0.0106*	0.0080	0.0087	-0.0033**	-0.0033**
	(0.0061)	(0.0062)	(0.0115)	(0.0014)	(0.0015)
L.Deposits	-0.0018	0.0074	-0.0051	0.0052**	-0.0017
	(0.0103)	(0.0056)	(0.0126)	(0.0020)	(0.0035)
L.Loans	-0.0080**	-0.0052	0.0022	0.0014	0.0008
	(0.0032)	(0.0033)	(0.0069)	(0.0012)	(0.0013)
L.CS index	-0.0000	-0.0000	-0.0000	0.0000**	0.0000*
	(0.0000)	(0.0000)	(0.0001)	(0.0000)	(0.0000)
L.UR	0.0002	-0.0065	-0.0167	0.0008	0.0014
	(0.0079)	(0.0095)	(0.0233)	(0.0034)	(0.0038)
Constant	0.0127	0.0124	-0.0643	-0.0241***	-0.0150*
	(0.0398)	(0.0358)	(0.0697)	(0.0073)	(0.0078)
TE	YES	YES	YES	YES	YES
FE	YES	YES	YES	YES	YES
YE × SE	YES	YES	YES	YES	YES
No. of Banks	597	597	597	597	597
Observations	24097	24097	24097	24097	24097
Adj. R2	0.91	0.84	0.80	0.96	0.96

Notes: Table A.12 shows regression results for Equation (2) while interacting bailout expectation with dummies that reflect whether a banks resides in a state with low, medium, or high restrictions on banking and branching, according to Rice and Strahan (2010). Each regression includes bank (FE), quarter (TE), and interacted year-state (YE × SE) fixed effects for the period q1/10-q4/12. The prefix "L" indicates that a variable is lagged by one quarter. Variable definitions are in Table A.13. Clustered (bank level) standard errors are in parentheses. ***, ** and * indicate significant coefficients at the 1%, 5%, and 10% levels, respectively.

Table A.13: Variable description

FDIC variables		
Variable name	Calculation by FDIC codes	Description
Size	ln(asset)	**Total assets:** Log of total assets. Total assets comprises the sum of all assets owned by the institution including cash, loans, securities, bank premises and other assets. This total does not include off-balance-sheet accounts.
C&I	lnci/asset	**Commercial and industrial loans over assets:** All loans secured by real estate, loans to individuals, loans to depository institutions and foreign governments, loans to states and political subdivisions and lease financing receivables.
EQ	eqtot/asset	**Total equity over assets:** Banks' total equity capital.
NPA	(p3asset+p9asset+naasset)/asset	**Non-performing assets over total assets**: Total assets past due 30-90 days and still accruing interest (p3asset). Total assets past due 90 or more days and still accruing interest (p9asset). Total assets, which are no longer accruing interest (naasset). Total assets include real estate loans, installment loans, credit cards and related plan loans, commercial loans and all other loans, lease financing receivables, debt securities, and other assets.
Loans	lnlsgr/asset	**Total loans over assets:** Total loans and lease financing receivables, net of unearned income.
RoA	roaptx	**Return on assets:** Profits before taxes over total assets.
Deposits	dep/asset	**Total deposits over assets:** The sum of all deposits over total assets.
Cash	cbal/asset	**Total cash balances over assets:** The sum of all cash balances over total assets.

Table A.13: Variable description (continued)

FDIC variables		
Variable name	Calculation by FDIC codes	Description
RE	lnre	**Real estate loans:** Loans secured primarily by real estate, whether originated by the bank or purchased.
CI	lnci	**Commercial and industrial loans:** Excludes all loans secured by real estate, loans to individuals, loans to depository institutions and foreign governments, loans to states and political subdivisions and lease financing receivables.

Further variables	
Variable name	Description
R^{TL}	**Yield on total loans:** Quarterly (annualized) yield on total loans for each bank.
R^{RE}	**Yield on real estate loans:** Quarterly (annualized) yield on real estate loans for each bank.
R^{CI}	**Yield on commercial and industrial loans:** Quarterly (annualized) yield on commercial and industrial loans for each bank.
R^{DEP}	**Yield on total deposits:** Quarterly (annualized) yield on total deposits for each bank.
R^{TF}	**Yield on total funding:** Quarterly (annualized) yield on funding for each bank.
UR	**Quarterly rate of unemployment per county:** Using county-level information provided by the Bureau of Labor Economics, we weighted the unemployment rates for each bank by its county presence, according to the summary of deposits.
Bailout expectation	**Bailout expectation:** Predicted probability from regression coefficients that result from probit regression of Equation (1).
Branching index	**Branching restriction index:** According to Rice and Strahan (2010), an index that separates states according to their branching restrictions. A higher value indicates more restrictions.
Case-Shiller index	**CS index:** The Case-Shiller house price index per state provided by the economic research center of the Fed of St. Louis.
SubC	**Member of subcommittee:** A dummy variable that indicates whether the Congressperson is part of the financial services subcommittee. The ending 0709 indicates membership for the period between 2007 and 2009 and the ending 0911 indicates membership between 2009 and 2011.
2nd Vote	**Second vote on TARP:** A dummy variable indicating the Congressperson's vote in the second Congressional TARP vote.
Party	**Party of member:** A dummy variable that indicates the party membership of each Congressperson. The ending 0709 indicates membership for the period between 2007 and 2009, and the ending 0911 indicates membership between 2009 and 2011.

Notes: The source for all FDIC variables and their descriptions is the *FDIC Statistics on Depository Institutions* website. For more details, refer to http://www2.fdic.gov/SDI/main.asp.

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Michael Koetter
Frankfurt School of Finance & Management and Halle Institute for Economic Research (IWH); e-mail: m.koetter@fs.de

Felix Noth
Otto-von-Guericke University; e-mail: felix.noth@iwh-halle.de

Postal address	60640 Frankfurt am Main, Germany
Telephone	+49 69 1344 0
Internet	www.ecb.europa.eu

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