



TARP from the banks' perspective: Evidence from conference calls

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ARTICLE INFO

Keywords:

TARP
Banks
Conference calls
Lending
Capital
Loan demand

ABSTRACT

Using earnings conference calls, we investigate banks' views of the Troubled Asset Relief Program (TARP) to understand why TARP generated so few loans. We find that banks generally regarded TARP favorably and many mentioned using TARP funds to make loans. However, actual loan growth fell well below expectations based on prior capital ratios, even among banks that publicly committed to lending. Other banks highlighted that the funds would improve their capital ratios. We show that these perspectives are largely unrelated to banks' ex-ante financial characteristics, but instead reflect the evolving conditions during the crisis period. These shifts are consistent with a large decline in the fraction of banks that commented on the favorable pricing of the preferred stock over time. Our findings suggest that banks primarily used TARP funds to strengthen capital ratios, partly driven by CEO career concerns. Weak loan demand and evolving market conditions also contributed to the sluggish loan growth following the TARP injections.

1. Introduction

The Global Financial Crisis (GFC) of 2008 triggered an unprecedented disruption in U.S. credit markets, threatening the solvency of financial institutions and the broader economy. In response, the U.S. Treasury launched the Troubled Asset Relief Program (TARP), injecting \$204.5 billion into the banking sector. The primary goal of TARP was to provide loanable funds to banks at a time when credit markets were impaired and banks were overwhelmed with bad assets. Philippon Schnabl (2013)'s theoretical work concludes that the program's structure, which injected capital via preferred stock and warrants, was efficient, as long as the debt overhang problem was widespread enough to ensure sufficient participation. Song (2020) comes to a similar conclusion, although a possible outcome of his model is that the funds are not always lent out. Calomiris and Kahn (2015) argue that warrants reduce banks' incentive to recapitalize through public equity issuance.

Despite its theoretical soundness, TARP fell far short of the level that policymakers expected. Assuming a multiplier effect, Assistant Treasury Secretary Neel Kashkari predicted that "a dollar of [TARP] equity,

because banks are leveraged,...[would be] roughly equivalent to buying \$10 of assets."¹ In comparison, Taliaferro (2021) finds that only about 13 cents of each TARP dollar was used to support new loans. Thus, while most studies surveyed by Berger (2018) and Berger and Roman (2020) conclude that TARP helped to expand the country's credit supply, the quantity produced was muted.² Hence, although TARP was a success by some metrics, such as the value of capital added to the banking system, its effectiveness as a tool to counteract negative credit supply shocks may be limited.

Despite numerous studies of TARP, some key elements of the program remain unclear. Especially, the disconnection between policymakers' objectives and banks' actions raises critical questions: How did banks perceive TARP's value and constraints? Did they intend to use the funds for lending, or were other priorities, such as capital preservation and CEO career concerns, more influential? And to what extent did the evolving economic conditions shape these decisions?

Our paper aims to provide insights into these questions using a novel dataset of earnings conference call transcripts from 120 publicly listed U.S. banks. Existing studies show that conference calls are informative

We thank Allen Berger, Jinfei Sheng, and seminar participants at the University of Nebraska-Omaha for helpful comments. Ran Duchin generously shared his data on political connections. Dieu Dang and Nasrin Izadian assisted with some of the data used in this research.

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¹ Interview on June 11, 2009. See <https://knowledge.wharton.upenn.edu/article/one-on-one-with-neel-kashkari/>

² See Taliaferro (2021); Li (2013); Berger and Roman (2015, 2017); Berger, Makaew and Roman (2019); Sheng (2016); Koetter and Noth (2015); Harris, Huerta and Ngo (2013); and Bassett, Demiralp and Lloyd (2020)

<https://doi.org/10.1016/j.jfi.2025.101180>

Received 27 May 2024; Received in revised form 15 September 2025; Accepted 16 September 2025

Available online 25 October 2025

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and improve the accuracy of analysts' forecasts (e.g., [Bowen et al., 2002](#); [Brown et al., 2004](#); and [Matsumoto et al., 2011](#)). We argue that they offer a unique window into commercial bankers' views on TARP, especially as the Q3 and Q4 2008 earnings calls occurred around the start of the TARP program (see Internet Appendix Table IA1).

The TARP discussions centered on four topics: (1) plans to lend the funds if received; (2) the impact of TARP on the bank's capital ratios; (3) the cost of the preferred stock; and (4) potential acquisitions. In discussing plans for lending the TARP funds, management frequently gave its opinion on the amount of loan demand in its market, which was declining for most banks after mid-2008. Among the banks that experienced positive loan demand, we sometimes read that demand was unusually high because the bank had gained market share as a result of retrenchment by its competitors. Thus, in our analysis of banks' views on TARP, we control for loan demand by creating two descriptive categories: negative and shifted positive demand.

Many banks said that they intend to use TARP funds to make loans, especially in the Q4 2008 conference calls. Nearly all banks discussed capital ratios each quarter, and some emphasized that the TARP funds would strengthen their capital ratios. During the Q3 2008 calls, more than 40 percent of sample banks viewed the funds as inexpensive, but by mid-January, the pricing of the program was less appealing. Banks discussing acquisitions in Q3 rarely revisited the topic in Q4.

We relate banks' perspectives on these four aspects of the TARP program to bank characteristics, changes in banks' financial conditions and CEO compensation. We find that plans to lend are not closely related to economic conditions, although banks with negative loan demand are less likely to voice such plans. Plans to lend may have been overstated as CEOs responded to public outcry over TARP. The timing of the statements about lending plans, which were more frequent in January 2009, suggests the statements, while not out-and-out lies, were exaggerated.

We also examine banks' decisions to apply for and accept the funds. We find that plans to lend are positively related to participation in the program, and banks that perceived greater loan demand are more likely to apply for TARP. Moreover, CEOs with high compensation are less likely to apply to the program, while banks with high analyst coverage participate more.

Consistent with [Taliaferro \(2021\)](#), we find that TARP banks made fewer loans in 2009 than expected. The low level of lending occurred even among TARP banks that said they would use the funds for lending. Among the banks that mentioned TARP-funded lending, we find that actual loan growth was higher if they experienced positive demand from increased market share. Some evidence indicates that CEOs' career concerns hampered loan growth. When focusing on banks that previously expressed plans to use TARP funds for new loans but actually lent less, we show that loan demand helps to explain why they failed to expand. Some evidence in these regressions suggests that lending plans were articulated to rebuff criticism of the industry, and it appears that none of the banks had firm plans to lever the money much, if at all.

In sum, the positive view of the program expressed in Q3 2008 conference calls reflected a combination of bankers' optimism about lending opportunities and their view that TARP was useful for raising capital ratios. As time went on, weakening loan demand and the decline in the Federal Funds rate reduced the expected profits from lending out TARP funds, leading more banks to highlight their high cost and to use the funds to raise capital ratios. The benefits of using TARP to meet capital ratios, combined with the weak economic environment and CEOs' career concerns, made it unlikely that a TARP dollar would have led to \$10 of new loans, as Kashkari hoped. Hence, our analysis of conference calls indicates that the program was only partly successful in addressing the challenges faced by the banking system during the GFC.

Our paper contributes to the literature on government bailouts in three ways. First, we provide novel data that captures banks' real-time perspectives during the GFC. Our analysis complements prior studies, such as [Bayazitova and Shivdasani \(2012\)](#) and [Duchin and Sosyura \(2012\)](#), on TARP participation and goes further by analyzing managerial

thinking and strategy.

Second, we provide an explanation for why banks did not value the large subsidy identified by [Flanagan and Purnanandam \(2024\)](#). By linking conference call statements to realized loan growth, we uncover a significant divergence between banks' public communication and their actual behavior — something that cannot be captured using regulatory filings alone.

Third, we provide insights on the effects of loan demand, which has been blamed as the cause of TARP's muted impact on lending ([Ivashina and Sharfstein, 2010](#); [Li, 2013](#); [Puddu and Woelchli, 2015](#)), banks' incentives to repay funds early ([Cadman et al., 2012](#); [Wilson and Wu, 2012](#); [Cornett et al., 2013](#); and [Mucke et al., 2024](#)), banks' investment in riskier loans ([Black and Hazelwood, 2013](#); [Duchin and Sosyura, 2014](#); [Chavaz and Rose, 2019](#); and [Berger et al., 2020](#)) and regulatory uncertainty ([Lin et al., 2024](#)). Our findings complement these studies by showing that banks prioritized strengthening capital ratios over expanding credit supply, particularly when loan demand was weak. Moreover, we identify the role of CEO incentives in shaping public statements about lending, offering evidence on why stated plans often diverged from actual actions.

The remainder of the paper is structured as follows. [Section 2](#) details the data and summary statistics. [Section 3](#) discusses the methodology of our analysis. [Section 4](#) presents the empirical results and [Section 5](#) provides additional robustness checks. Finally, [Section 6](#) concludes.

2. Data

Our sample contains 120 listed banks with earnings conference call transcripts for either the third or fourth quarter of 2008. Although the sample is not large, these banks were allocated approximately \$150 billion of the \$204.5 billion funds distributed through the Capital Purchase Program (CPP) portion of TARP. Hence, they represent the majority of funds allocated under the program.

To construct our sample, we start with the 5537 banks in the Bank Regulatory database on Wharton Research Data Services (WRDS) with Q4 2008 information. We then restrict the sample to publicly traded banks headquartered in the 50 U.S. states by matching the RSSD numbers to the Center for Research in Security Prices (CRSP) using the Federal Reserve Bank of New York's link table. Because only large, publicly traded banks hold quarterly earnings conference calls, we further restrict the sample to those with at least \$1 billion in assets as of the end of 2006. These restrictions resulted in a group of 206 banks that were likely to have conference calls in late 2008.

We search for the transcripts of the 206 banks in data provided by Thompson Financial, Seeking Alpha (NASDAQ), Fair Disclosure, and Factiva. While most banks that hold conference calls do so each quarter, some are discontinued. In other cases, transcripts were unavailable.³ As a result, our sample has 120 listed banks with earnings conference call transcripts for either the third or fourth quarter of 2008 (see Table IA2 of the Internet Appendix). In some cases, the TARP funds were received in 2009, which means we require transcripts from 2010 for some of our analyses.

Having collected a set of transcripts, we read those for Q3 and Q4 2008 to determine what banks said about the TARP program. We found that discussions around TARP mainly included their plans for the funds, the cost, and whether loan demand was strong enough to deploy all of the funds. The discussions about loan demand were common in most quarters, which led us to collect qualitative data on loan demand from all the quarters between 2007 and 2009 (and 2010 for banks that received TARP in 2009).

The conference call transcripts provide substantial data on TARP applications and acceptance decisions. This information is

³ Conference call dates and times are typically announced in advance, so we are able to determine if a call was ever held.

supplemented with data from the Department of the Treasury, with SEC filings, and with articles in Factiva and Nexis Uni. In all but two cases, we could readily determine if the company applied for TARP. Neither bank was listed by the Treasury as a TARP recipient, and after a careful search, we coded them as ones that did not apply.⁴ Six banks in our sample were forced to take TARP funds. A few of the banks merged or failed before 2009. They are included for as long as they contribute data to the sample.

We also use the Bank Regulatory data in WRDS to access quarterly reports filed with bank regulators, and ExecuComp, which provides compensation data for the larger firms in the sample (other firms' data are obtained from SEC proxy filings). Following Duchin and Sosyura (2012, 2014), Li (2013), and Chavaz and Rose (2019), we code political connection variables using data from the Federal Reserve and the House of Representatives. We use a state macro growth variable based on state economic conditions reported by the Federal Reserve Bank of Philadelphia. The information on analyst coverage is from I/B/E/S.

2.1. Summary statistics and univariate analysis

Table 1 shows sample statistics for the three types of banks in our sample: Forced TARP, voluntary TARP and non-TARP banks. TARP funds went to 92 of the 120 sample banks (76.67 %). The majority of sample banks are voluntary TARP banks. The forced TARP banks are the largest in the sample. The average size of the voluntary TARP banks is noticeably smaller, but still larger than the non-TARP banks at the 10 % significance level. We note that all the firms in our sample are larger

Table 1

Summary Statistics – Bank Characteristics

This table shows summary statistics for explanatory variables of our 120 sample banks. Values for these variables, which are defined in the Appendix, are as of September 30, 2008. The sample is divided into three groups: forced TARP banks, voluntary TARP banks and non-TARP banks, which are defined in the Appendix. Differences in means between voluntary TARP banks and non-TARP banks are marked with ***, **, and * when they are statistically significant at the 1 %, 5 %, and 10 % levels, respectively.

Variable	Forced TARP (N = 6) (1) Mean	Voluntary TARP (N = 86) (2) Mean	Non- TARP (N = 28) (3) Mean	Difference (2)-(3)
Log(Assets)	20.56	15.90	15.34	0.56*
Tier 1 ratio(%)	9.75	9.64	10.76	-1.13**
ROA(%)	1.29	0.35	-1.85	2.19
Deposits(%)	50.68	70.84	70.94	-0.10
Wholesale debt(%)	1.64	1.02	0.29	0.72**
RE loans(%)	35.15	69.30	77.36	-8.06*
Derivatives > 0	1.00	0.14	0.00	0.14*
NPLs(%)	2.07	1.87	2.58	-0.71*
LLPs(%)	1.39	1.02	1.24	-0.22
Write-downs(%)	-0.02	-0.17	-0.07	-0.10
PCI	0.87	0.49	0.48	0.01
CEO compensation > 500k	1.00	0.86	0.64	0.23**
High bonus	0.00	0.16	0.18	-0.02
High delta	1.00	0.17	0.32	-0.15
High excessive pay	0.67	0.27	0.36	-0.09
Log(Analysts)	3.39	2.59	2.20	0.38**
State macro growth(%)	-0.36	-0.34	-0.32	-0.02

⁴ In one case (Amcore), an analyst said the bank would not be approved if it applied, implying that it did not apply. In the other case (West Coast Bancorp), management was asked several times in conference calls if it applied or intended to apply but the bank never answered directly, implying that it did not apply.

than the typical bank. Table 1 shows that the Tier 1 ratio is higher in non-TARP banks than in voluntary TARP banks. Consistent with their larger size, voluntary TARP banks pay a higher salary to their CEOs and the average number of analysts following these banks is greater. The statistics in Table 1 do not show a clear difference in the financial health of TARP and non-TARP banks: average capital is lower at the TARP banks, and they have higher wholesale debt and use derivatives more often, but their real estate loans as well as non-performing loans (NPLs) are lower. This mixed picture reflects the diversity of the non-TARP group, which includes both weak banks that were rejected and healthy banks that did not take the money.

Statistics on participation in the program (TARP applications, approvals and take-downs) are shown in Fig. 1. Only 14 banks in the sample did not apply to the program and only seven banks that were approved decided not to take the money. These figures indicate much higher participation in our sample than in the banking industry overall: Duchin and Sosyura (2012) and Bayazitova and Shivdasani (2012) report that about half of publicly traded banks did not issue preferred stock to the Treasury. The banks that did not apply to the program in our sample are a mix of banks that did not want the capital (and likely would have been approved if they applied) and some that did not apply lest they be rejected.

After reading the transcripts of the 2008 Q3 and Q4 calls, we created four indicator variables that describe banks' views of the TARP program. In addition, we classified loan demand based on comments in these conference calls. The Appendix provides details on the construction of conference call variables. Table 2 summarizes these variables, showing their average values separately for the third and fourth quarters of 2008.⁵ Internet Appendix Table IA3 provides the correlation matrix of TARP and conference call variables.

Table 2 shows little evidence that banks viewed the funds as inexpensive, despite the significant subsidy identified by Flanagan and Purnanandam (2024). Initially, before the Federal Reserve lowered the Federal Funds rate to zero, the 5 % preferred dividend struck a large number of bank CEOs as inexpensive. Nonetheless, that group was less than half of the sample. During the Q4 2008 call, which usually took place in mid to late January 2009, only a few banks (5.13 %) said the funds were inexpensive, and in untabulated results, the number that described TARP as expensive rose. Thus, despite the subsidy provided by the program, bankers viewed the dividend as too high relative to the rate on a loan.

None of the banks stated that they did not plan to lend out the funds. However, most banks did not state one way or the other whether they planned to make new loans with the TARP money. Notably, the fraction of banks that explicitly stated that they would make new loans increased substantially from the Q3 2008 to the Q4 2008 call. This may reflect banks' response to heightened scrutiny from politicians and the public rather than a change in lending plans. In particular, the Q4 2008 conference calls typically occurred in mid to late January, which was within days of the FDIC's letter to banks about the use of TARP funds.⁶

While bank conference calls routinely include comments about bank capital ratios, few banks said how CPP funds would impact these ratios in the Q3 2008 discussions. If banks had planned to lever up the capital as usual, their ratios would have remained unchanged post-issuance. Thus, plans to use the funds to raise capital, which were more common in the Q4 2008 conference call, meant that the funds would not be levered up as usual. The difference between Q3 and Q4 commentary

⁵ The samples in the two columns are less than 120 because, as can be seen in Internet Appendix Table IA2, transcripts are not available for two firms in Q3 2008 and a different set of three firms did not have transcripts for Q4 2008.

⁶ "Monitoring the Use of Funding from Federal Financial Stability and Guaranty Programs" was sent on January 12, 2009, which stated that state nonmember institutions should implement a process to monitor their use of capital injections.

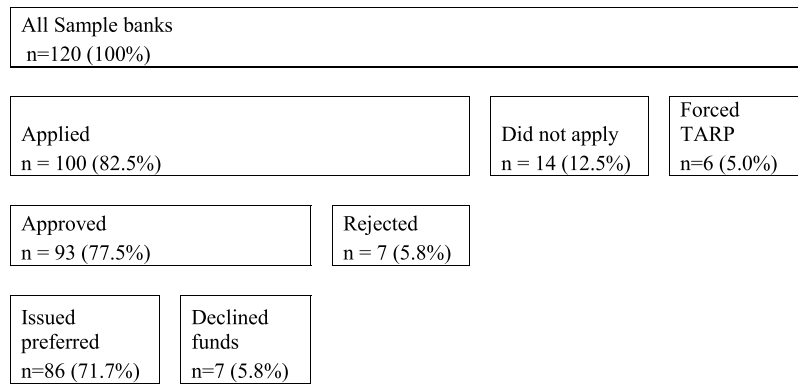


Fig. 1. TARP applications, approvals and acceptances.

This figure shows the breakdown of the sample between TARP banks and non-TARP banks in terms of whether they applied for funds, were approved and decided to issue CPP preferred stock.

Table 2

Banks' views expressed about TARP in Q3 and Q4 2008 conference calls. This table presents views expressed in quarterly conference calls about the TARP program. The sample contains 120 banks, including 118 banks that have conference call transcripts in Q3 2008. For Q4 2008, a slightly different sample of 117 banks have transcripts. The table shows the mean values for the conference call indicator variables that are set to one if the bank expressed a view about the relative pricing of the CPP funds (*inexpensive*), indicated plans to use TARP funds for new loans (*lending plan*), acquisitions (*acquisition plan*), adding to capital (*bolster capital*); or if the bank expressed a view about loan demand (*shifted* (i.e., positive because of increased market share) or *negative loan demand*).

	Q3 2008 Conference call	Q4 2008 Conference call
N	118	117
Funds are inexpensive (<i>Inexpensive</i>)	42.37 %	5.13 %
Plan to use the funds to make new loans (<i>LendingPlan</i>)	26.27 %	45.30 %
Plan to acquire another bank (<i>AcquisitionPlan</i>)	32.20 %	17.09 %
Would bolster our capital ratio (<i>BolsterCapital</i>)	22.03 %	30.77 %
Positive demand due to market share (<i>Shifted loan demand</i>)	24.58 %	23.93 %
Negative outlook for loan demand (<i>Negative loan demand</i>)	33.05 %	41.03 %

about capital ratios may mean the banks became more cautious over time as the economy weakened or that the funds were more useful as capital later, once the pricing became less favorable for lending. Not shown in the table, six of the 14 non-applicant banks stated they did not need additional capital. Notably, some banks that claimed they did not need the capital chose to accept it nonetheless, and a few explicitly stated that they took the funds as insurance against deterioration in the economy.

Finally, the last rows of Table 2 show data on the lending environment. At the time that TARP funds were disbursed, many of the banks believed that the demand was strong enough to lend out the funds. Our empirical analyses focus on two conference call variables: shifted positive loan demand and negative loan demand. The shifted loan demand variable is highly correlated with the positive demand indicator since most of the banks with positive demand experienced an increase in market share rather than a boost to the economies they served. In Figure IA1, we further break down loan demand variables into negative, positive and neutral demand, and show the time series of the loan demand variables from Q3 2007 to Q4 2009. Demand was typically positive or neutral when TARP was announced, but often weakened over the following quarters.

3. Methodology

We begin our analysis by relating statements from the conference calls to CEO compensation, public scrutiny, loan demand, and bank financial characteristics. We estimate the following regression:

$$CC_{ij} = \sum_j \beta_j Comp_{ij} + \sum_m \gamma_m LD_{im} + \sum_j \delta_j X_{ij} + \sum_j \alpha_j \Delta X_{ij} + \varepsilon_i \quad (1)$$

where CC_{ij} is a set of j variables created from the conference call that describe the bank's views on TARP; $Comp_{ij}$ is a set of indicator variables related to the CEO's compensation package and to public scrutiny of the bank measured in 2008; LD_m is a set of m variables related to the bank's loan demand, which are also obtained from the conference call transcripts in the quarter of interest. X_i are bank characteristics measured at the benchmark quarter, and ΔX_i are the changes in these characteristics from the benchmark quarter to the quarter of interest.

Next, we examine how banks' views on the pricing and intended use of TARP funds influence both the decision to apply and the acceptance decision. Similar to Bayazitova and Shivdasani (2012) and Duchin and Sosyura (2012), we estimate two sets of regressions with the following specification:

$$Participate_i \text{ or } Accept_i = \sum_j \beta_j CC_{ij} + \sum_j \beta_j Comp_{ij} + \sum_m \gamma_m LD_{im} + \sum_j \delta_j X_{ij} + \varepsilon_i \quad (2)$$

Participate is an indicator set to one for banks that applied to the program and zero if they did not, while *Accept* is set to one if a bank accepted TARP funds, and zero otherwise. Most application decisions were made in October 2008, and the deadline to apply was November 14, 2008, so the CC_{ij} variables for applications are from Q3 2008 conference calls and are based on both Q3 and Q4 for the acceptances estimations. Similarly, the loan demand indicators LD_m are measured from Q3 2008 conference calls for applications and from Q4 2008 for acceptances. $Comp_{ij}$ is the same as in Eq. (1) and X_i are bank characteristics measured at Q3 2008.

Finally, to assess how banks' views expressed in the conference calls relate to their subsequent lending, we consider possible uses of the TARP funds. Fig. 2 illustrates how TARP funds could either improve capital ratios or be multiplied as Mr. Kashkari hoped, but not both. Panel A of the figure shows the balance sheet before receiving TARP funds, where the bank has a leverage ratio of 8 %. Assuming a risk weight of 100 % for

A. Pre-TARP balance sheet					
Leverage: 8					
Tier 1: 11.43					
A			L		
70	Loans		Deposits	90	
20	Securities		Debt	2	
10	Reserves/cash		Equity	8	
100			100		

TARP is used to make new loans:

B. Scenario 1 Zero leverage of TARP			C. Scenario 2 Same leverage as pre-TARP		
Leverage: 9.89			Leverage: 8		
Tier 1: 14.01			Tier 1: 10.65		

A		L	
72.1	Loans	Deposits	90
20	Securities	Debt	2
10	Reserves/cash	Equity	8
		TARP	2.1
102.10		102.10	

A		L	
94.83	Loans	Deposits	114.15
20	Securities	Debt	2
11.42	Reserves/cash	Equity	8
		TARP	2.1
126.25		126.25	

Lending does not expand:

D. Scenario 3 Zero loan growth			E. Scenario 4 Asset shrinkage		
Leverage: 9.89			Leverage: 7.97		
Tier 1: 14.43			Tier 1: 10.60		

A		L	
70	Loans	Deposits	90
22.1	Securities	Debt	2
10	Reserves/cash	Equity	8
		TARP	2.1
102.10		102.10	

A		L	
67	Loans	Deposits	82
13.1	Securities	Debt	0
9	Reserves/cash	Equity	5
		TARP	2.1
89.10		89.10	

Fig. 2. Scenarios describing the use of TARP capital.

This figure illustrates how a bank's balance sheet might change after receiving the TARP funds. Panel A shows the balance sheet before the program began and panels B-E show possible post-TARP balance sheets. For the sake of simplicity securities are assumed to have a risk weight of zero while loans have a weight of 100 %. TARP injection is calculated as 3 % of RWA.

the loans and zero for the securities, its Tier 1 risk-based capital (RBC) ratio is 11.43 %.⁷ The next four panels (B-E) show two cases of expanded lending (panels B and C) and two cases with no loan growth (panels D and E).

In Scenario 1 (panel B) the bank does not lever the new funds, so loan growth is modest (loans expand by exactly the dollar amount of new capital). The lack of “normal” leverage in Scenario 1 raises the Tier 1 leverage ratio to 9.89 % and the Tier 1 capital ratio increases by 2.58 % to 14.01 %. Total risk-based capital also goes up by 2.58 %. Thus, although TARP funds are used to make new loans, the bank is mainly using the money to improve its capital ratio.

In Scenario 2 (panel C), the TARP funds are levered in exactly the same way as in the pre-TARP period. As a result, the Tier 1 leverage ratio is unchanged at 8 %. The funds for leveraging up come from new deposits and these two sources in combination lead to loan growth of more than 35 %. Since all of the funds go into loans with a risk weight of 100 %, the RWAs increase and the Tier 1 capital ratio falls to 10.65 %.

We note that the banks that explicitly mentioned plans to lend in the Q3 and Q4 2008 calls rarely mentioned details about the degree of leverage they intended, even when asked. For example, when an analyst asked Webster Bank in the Q3 call “if it would be easy or possible to lever up the capital,” the CEO responded that Webster “would like to deploy the capital to our customers and into the community, but we also

recognize that in the down leg of the cycle that there is not going to be as much origination volume as you might otherwise see.” In Q4, when public outcry about bailouts was louder, lending plans were more often coupled with figures about the number of loans created. For example, First Horizon mentioned receiving \$866 m. of TARP funds and making \$900 m. in loans, suggesting no leverage, but in the Q&A section it said “...[the] \$900 m. of new lending, and what we were reporting, was progress we’ve made in the TARP....What we are trying to point out is not net loan growth of \$900 m., but...new loans on the books to meet the needs of our communities and serve our customer base.” Similarly, Banner Corp. highlighted that its \$124 m. TARP funding resulted in \$224 m. worth of credit that helped its customers, but in the same call said, “loan production notwithstanding..., loan balances declined during the quarter.” Thus, loan growth as high as in Scenario 2 seems unlikely during the sample period.

In the remaining two scenarios, the bank uses the funds only to improve its capital ratios. In Scenario 3 (panel D), the funds are invested in securities, leaving the loan portfolio unchanged (assuming no runoff in existing loans) but lowering the percentage of high RWA in the asset base. In the last scenario (panel E) the increase in the capital ratio from the TARP funds partially offsets the decline in equity from loan losses (+2.1 % vs. -3.0 %). The bank's response to losses involves shrinking, as in Peek and Rosengren (1995a and 1995b). Assuming that it desires to return to the pre-TARP leverage ratio, the bank uses TARP funds and asset sales to pay down debt.

These scenarios motivate our empirical estimations. Banks that plan to lend out the TARP money are more likely to experience loan growth, as in Scenarios 1 and 2. We expect that banks that viewed the funds as inexpensive will lever up the funds and grow, as in Scenario 2. We expect

⁷ The risk weights for Treasuries and insured MBS are zero in this period while those for other MBS and other securities were 20 %. While the average risk weight was likely as close to 20 % as zero for these assets, they are set to zero here for simplicity.

that banks that raise their capital ratios without new lending, as in Scenarios 3 and 4, are more likely to mention TARP's usefulness in boosting capital ratios.

Previous research (e.g., Berger and Roman, 2015, 2017; Chavaz and Rose, 2019; and Bassett et al., 2020) analyzes loan growth with DID regressions, but we find evidence against the parallel trends assumption in our sample. Therefore, we estimate the impact of TARP on loan growth with an alternative method that compares the actual lending to a target loan amount. In this analysis, we create a target loan amount, L_T , for each bank in the sample and compare its actual lending in the quarters after receiving TARP to the target. These target loan levels depend on the size of TARP injection (typically 3 % of RWA) and the amount of capital raised in the private market. This approach allows us to compare banks' actual lending with the CC variables. Furthermore, since it only considers lending changes after the funds are received, this approach avoids the parallel trends problem.

To determine how banks' plans affect their lending, we estimate the following equation:

$$\begin{aligned} \text{Meet Target}_{ijt} = & \beta_0 + \beta_1 \text{TARP}_i + \sum_j \theta_j \text{CC}_{ij} + \sum_j \gamma_j \text{CC}_{ij} \times \text{TARP}_i \\ & + \beta_2 \text{LendingPlan}_i \\ & \times \text{Shifted LD}_{it} + \beta_3 \text{LendingPlan}_i \times \text{Tier 1}_{it} \\ & + \sum_j \beta_j \text{LendingPlan}_i \times \text{Comp}_{ij} + \sum_m \gamma_m \text{LD}_{imt} \\ & + \sum_j \delta_j \text{Comp}_{ij} + \sum_j \delta_j \text{X}_{ijt} + \varepsilon_{it} \end{aligned} \quad (3)$$

In Eq. (3), the dependent variable for bank i is a dummy variable that equals one if the actual loan level at time t (one, two, three or four quarters after receiving the funds) reaches the forecast level based on various leverage benchmarks. Here, the TARP indicator variable equals one for bank i if it's a TARP recipient bank. In Eq. (3), the control variables are based on the quarter before the funds were received. Loan demand variables (LD_{imt}) capture subsequent changes in the economy. We expect the LendingPlan variable to have a positive coefficient if it captures banks' plans, but less so if CEOs are overemphasizing the extent of the plans. The interaction of the LendingPlan variable with compensation variables and the number of analysts would be negative if CEOs were less than forthcoming about the intent to lend. Given that using the TARP funds for capital means that the money is not used for lending, we expect the BolsterCapital variable to have a negative coefficient.

We focus on two targets but include additional ones in the Internet Appendix. Our first target is closer to that of Scenario 2 in Fig. 2, but is more conservative: we assume the bank levers up to the highest possible point while remaining well-capitalized. As in Fig. 2, such lending leaves the bank better capitalized than before the TARP program (holding all else constant). In 2008, well-capitalized status required a total RBC capital ratio of at least 10 %, Tier 1 RBC of at least 6 %, and a Tier 1 leverage ratio of at least 5 %. For each bank, we set L_T to the amount of loans that could be generated with additional capital while remaining well-capitalized under the three measures. After calculating the potential loan growth under each of the three capital rules, we next identify the smallest value of loan growth among the three and use it for the target. We treat capital raised through public and private equity offerings symmetrically in calculating these targets.⁸ Our second target represents the bank in Scenario 1 of Fig. 2 (panel B), where the bank raises 3 % of RWA and loans increase by 3 %, i.e., zero leverage.

Having calculated these target loan levels, we next construct an

indicator variable for whether the bank meets the target level. We start by looking at the first full quarter after the TARP injection (typically Q1 2009) and gradually expand the scope by adding additional quarters (up to the fourth quarter after the TARP injection). For example, for quarter t , we calculate whether the cumulative change in total loans from the pre-TARP quarter to quarter t is as high as the target.⁹ We define the pre-TARP quarter as the one immediately before the TARP injection and Q3 2008 for non-TARP banks.

We further analyze loan growth by considering banks that failed to grow loans despite stated plans to do so. For this analysis we restrict the sample to banks with LendingPlan equal to one and run regressions where the dependent variable equals one if a bank's total loan volume in quarter t falls below its Q3 2008 level. These regressions are estimated on a sample of bank quarters that begins with the first quarter after funds were received and continues for one year or until TARP is repaid. Most banks received the funds in Q4 2008, so the majority of the bank quarters analyzed are in 2009. We include variables related to loan demand before the funds were received (ex ante variables) as well as variables that measure average loan demand from the quarter the funds arrived until quarter t . These ex post variables are intended to capture changes in lending practices that occurred because the economy changed.

4. Empirical results

4.1. Bank characteristics and banks' perspectives on TARP

We first examine the relationship between banks' characteristics and their perspectives on TARP. Specifically, we analyze four key indicator variables derived from Q3 and Q4 2008 conference calls: LendingPlan , Inexpensive , BolsterCapital and AcquisitionPlan . Table 3 presents the results of our analysis. Models (1)–(4) examine the four CC variables from the Q3 2008 conference calls, where the financial variables, such as bank size, are measured as of Q3 2007 and the changes in financial variables are over the period Q3 2007 to Q3 2008. Models (5)–(8) present the estimations of banks' perspectives on TARP observed in the Q4 2008 conference calls, where the financial variables are measured at Q4 2007 and the changes in financial variables are over the period Q4 2007 to Q4 2008.

Model (1) of Table 3 shows that statements about lending plans in the Q3 call are more common among CEOs with compensation over \$500,000, but other measures of career concerns are not significantly related to plans to lend. The number of analysts has a negative coefficient in model (1), which is contrary to the idea of rebuffing criticism by emphasizing new TARP-funded loans. Banks experiencing negative loan demand in Q3 2008 were significantly less likely to mention plans to lend out TARP funds, but banks with positive (shifted) loan demand were no more likely than others to mention lending plans. Balance sheet variables explain little of the variation in lending plans, with only changes in profitability and real estate loans showing significant coefficients.

In model (2), we find that CEOs with a greater incentive to take risk (with high delta compensation packages) are less likely to view TARP as inexpensive, as are those with a large amount of bonus-based compensation. Both healthy banks, as measured by Tier 1 capital, and weak banks, as measured by NPLs, avoided saying that TARP funds were inexpensive. CEOs with high excess pay and bonuses are less likely to highlight the benefits of TARP recapitalization (model (3)). Greater write-downs are associated with less frequent discussion of capital ratios. Banks that grew recently, potentially with acquisitions, are less likely to discuss acquisitions in Q3 (model (4)), as are those with an increase in bad loans and real estate.

⁸ Loan growth is expected to be greater if it is supported by TARP funds rather than private capital because the TARP funds are subsidized. However, the extent of the difference is not known and therefore we do not adjust the target loan growth.

⁹ If the period involves a merger, we adjust the calculation by using a pro-rata combination of the acquirer's and target's loans.

Table 3

Banks' characteristics and conference call variables

This table shows OLS regression results of how bank characteristics and their changes affect banks' views of TARP. The dependent variables *LendingPlan*, *Inexpensive*, *BolsterCapital* and *AcquisitionPlan* are from the Q3 2008 conference calls in models (1)–(4), and from the Q4 2008 conference calls in models (5)–(8). *LendingPlan* equals one if a bank states that it plans to lend out the TARP funds, and zero otherwise. *Inexpensive* equals one if a bank states that TARP is inexpensive. *BolsterCapital* equals one if a bank says TARP money would raise its capital ratio. *AcquisitionPlan* equals one if a bank says that it plans to use TARP money to make an acquisition. Banks' CEO compensation variables, including *CEO compensation > 500 K*, *High bonus*, *High delta*, and *High excessive pay*, as well as the analyst coverage variable *Log(Analysts)* are measured in 2008. Other control variables are measured as of the benchmark quarter, including *Log(assets)*, *Tier 1 ratio*, *ROA*, *Deposits*, *Wholesale debt*, *RE loans*, *Write downs*, *Derivatives > 0*, *NPLs*, *LLPs*, and *State macro growth*. The changes in these control variables are measured as the difference relative to the values in the benchmark quarter. Δ *Derivatives > 0* is a dummy that equals one if a bank increases its use of derivatives, and zero otherwise. In models (1)–(4), we include *negative loan demand* and *shifted loan demand* measured in Q3 2008, while in models (5)–(8), the loan demand variables are measured in Q4 2008. The Appendix provides detailed definitions of the variables. Robust standard errors corrected for heteroscedasticity are shown in parentheses. ***, **, and * indicate statistically significant at the 1 %, 5 %, and 10 % level, respectively. Constant terms are not reported.

Variables	2008Q3 (benchmarked on 2007Q3)				2008Q4 (benchmarked on 2007Q4)			
	(1) Lending Plan	(2) Inexpensive	(3) Bolster Capital	(4) Acquisition Plan	(5) Lending Plan	(6) Inexpensive	(7) Bolster Capital	(8) Acquisition Plan
CEO compensation > 500k	0.23* (0.13)	0.02 (0.15)	−0.03 (0.14)	−0.14 (0.13)	0.36*** (0.13)	0.02 (0.06)	0.03 (0.15)	0.08 (0.09)
High bonus	−0.04 (0.14)	−0.27* (0.14)	−0.25*** (0.09)	−0.06 (0.13)	0.22 (0.15)	0.20** (0.09)	−0.09 (0.14)	0.01 (0.11)
High delta	0.02 (0.12)	−0.40*** (0.14)	−0.06 (0.13)	0.15 (0.13)	−0.12 (0.14)	0.05 (0.09)	−0.10 (0.14)	0.09 (0.12)
High excessive pay	−0.06 (0.10)	−0.05 (0.12)	−0.18** (0.08)	−0.08 (0.10)	0.07 (0.11)	0.03 (0.05)	0.07 (0.10)	0.01 (0.08)
Log(Analysts)	−0.26* (0.14)	0.14 (0.15)	0.04 (0.11)	0.10 (0.12)	−0.18 (0.13)	0.05 (0.04)	0.05 (0.15)	−0.05 (0.12)
Negative loan demand	−0.21* (0.11)	−0.01 (0.12)	−0.09 (0.11)	−0.12 (0.11)	−0.06 (0.12)	−0.01 (0.06)	−0.06 (0.11)	−0.20** (0.09)
Shifted loan demand	−0.08 (0.11)	0.09 (0.13)	0.09 (0.10)	−0.15 (0.11)	0.04 (0.15)	0.00 (0.06)	0.20 (0.13)	−0.07 (0.11)
Log (Assets)	0.05 (0.09)	−0.03 (0.11)	−0.06 (0.09)	0.13 (0.08)	0.15 (0.09)	−0.04 (0.04)	−0.03 (0.09)	−0.05 (0.07)
Tier 1	−0.06 (0.04)	−0.08* (0.04)	−0.01 (0.04)	−0.03 (0.04)	0.01 (0.04)	0.01 (0.01)	−0.10*** (0.03)	−0.03 (0.03)
ROA	0.08 (5.59)	4.62 (6.54)	1.43 (6.11)	6.29 (5.90)	−5.58** (2.49)	−3.14** (1.32)	−2.85 (3.50)	3.97* (2.25)
Deposits	0.65 (0.89)	−0.39 (1.15)	0.16 (0.91)	0.81 (0.93)	0.53 (0.94)	−0.48 (0.40)	0.27 (0.97)	−0.78 (0.65)
Wholesale debt	0.07 (8.24)	−10.33 (9.83)	4.16 (6.91)	−10.50 (7.03)	−5.51 (8.06)	3.24 (3.87)	−17.04** (7.32)	−1.46 (5.79)
RE loans	0.27 (0.34)	−0.12 (0.39)	0.03 (0.32)	0.49 (0.30)	0.60 (0.44)	0.07 (0.15)	−0.05 (0.37)	0.37 (0.30)
Write downs	−50.68 (37.96)	−38.56 (45.14)	−59.91* (35.50)	20.43 (29.38)	−23.81 (28.08)	9.49 (10.20)	−7.32 (22.77)	−10.98 (21.95)
Derivatives > 0	−0.22 (0.24)	−0.18 (0.26)	−0.32 (0.22)	0.47** (0.19)	0.08 (0.25)	−0.06 (0.07)	0.16 (0.25)	0.40** (0.17)
NPLs	2.36 (9.98)	−22.17** (11.01)	−5.59 (9.95)	−4.92 (8.11)	5.58 (8.85)	2.13 (3.42)	−9.09 (7.43)	7.86 (5.59)
LLPs	22.59 (21.85)	29.92 (26.73)	33.54 (22.23)	−16.18 (16.34)	−7.49 (13.89)	−13.32** (5.86)	12.73 (13.58)	3.62 (9.01)
State macro growth	29.26 (31.51)	47.33 (37.46)	40.87 (31.56)	30.80 (32.64)	73.57 (47.66)	18.92 (17.87)	−13.14 (38.71)	86.42*** (29.59)
Δ Log (Assets)	0.23 (0.39)	−0.04 (0.40)	−0.23 (0.30)	−0.79*** (0.27)	0.82** (0.37)	0.10 (0.14)	−0.14 (0.28)	−0.68*** (0.23)
Δ Tier 1	0.04 (0.05)	−0.03 (0.06)	0.03 (0.05)	−0.00 (0.04)	0.09*** (0.03)	0.03* (0.02)	0.00 (0.03)	−0.01 (0.02)
Δ ROA	−2.97* (1.52)	1.49 (1.70)	−0.26 (1.60)	0.64 (1.12)	−0.29 (1.12)	0.34 (0.73)	0.10 (1.24)	−0.04 (0.98)
Δ Deposits	0.55 (1.02)	0.62 (1.15)	−0.73 (1.04)	−0.33 (1.04)	0.44 (1.33)	−0.52 (0.37)	−0.08 (1.22)	−0.38 (0.81)
Δ Wholesale debt	−16.44 (10.59)	−5.46 (14.06)	−8.30 (10.70)	−8.57 (7.92)	−23.17 (14.87)	0.11 (5.83)	−28.44** (11.76)	−7.61 (8.10)
Δ RE loans	−3.28* (1.94)	−2.34 (2.02)	−2.21 (1.68)	−3.79*** (1.28)	−1.99 (1.87)	0.29 (0.54)	−3.32** (1.54)	−1.47 (1.10)
Δ Write downs	−1.21 (9.17)	−1.15 (15.99)	−6.77 (11.03)	1.29 (7.70)	−18.95*** (5.04)	−1.67 (4.65)	13.83** (6.00)	0.08 (5.07)
Δ Derivatives > 0	0.22 (0.20)	0.53** (0.24)	0.20 (0.20)	−0.60*** (0.15)	−0.45** (0.23)	−0.01 (0.05)	−0.11 (0.20)	−0.01 (0.19)
Δ NPLs	−5.89 (5.07)	−4.86 (6.51)	−4.89 (4.93)	−8.80* (4.48)	4.71 (3.58)	2.74 (2.69)	−3.91 (5.45)	−3.15 (1.96)
Δ LLPs	−1.92 (9.62)	12.42 (12.41)	11.18 (10.76)	4.90 (7.62)	−1.92 (7.52)	6.06* (3.43)	11.09 (6.89)	−4.31 (4.55)
Δ State macro growth	20.37 (29.11)	19.58 (40.45)	36.16 (23.86)	5.45 (34.71)	−12.48 (17.99)	−5.27 (5.23)	7.61 (14.73)	54.11*** (13.26)
Observations	117	117	117	117	116	116	116	116
Adjusted R2	0.02	−0.02	0.02	0.19	0.06	0.09	0.05	0.12

Turning to the Q4 2008 conference call variables, the high compensation variable that was significant in model (1) remains so in model (5) and with a slightly larger coefficient. This supports the idea that banks exaggerated lending plans, but other compensation variables are not significant in this quarter. High bonus CEOs now are more likely to highlight the low cost of the TARP funds, despite the funds increasing in relative cost compared to the previous quarter. Profitable banks (higher ROA) said less about lending plans and the price of the preferred stock, and were more likely to focus on acquisitions. Banks that improved their financial situation (increases in capital ratio and total assets) were more likely to mention lending plans in Q4 calls.

Banks with high Tier 1 capital and wholesale debt are less likely to view TARP funds as a source of funds to improve capital ratios in Q4 (model (7)), while those with increased write-downs view the capital injection favorably for the purpose. The conference call variables are not well explained by the financial situation of the bank in Q4 except for the acquisition variable, which is more often discussed by banks with better economic prospects.

Overall, banks' perspectives on TARP are not meaningfully tied to their financial characteristics (e.g., their statements were not driven by specific bank types such as "bad banks"). This finding also challenges the idea that certain banks strategically emphasize particular keywords in their conference calls. In the Internet Appendix Table IA4, we find qualitatively similar results when using the financial variables as of the previous quarter and their change in the current quarter from the previous one.

4.2. Banks' perspectives and TARP applications and acceptance

Table 4 shows the relationship between banks' perspectives on TARP and their decisions to apply for and later accept TARP funds. The first four columns include regressions of the probability of applying for TARP and the last four columns show regressions of the likelihood of accepting the money. Banks forced to take TARP and two firms that applied but have missing transcripts, are excluded from the application regressions. In columns (5)–(8), the sample drops to 92 because seven banks' applications were rejected and one bank's transcript is missing. Because acquisitions were infrequently discussed by Q4, we do not include the variable in this analysis. As noted earlier, the vast majority of the banks applied for and accepted the TARP funds, which limits the ability to explain the variation in the dependent variables in Table 4.

Model (1) of Table 4 shows that banks were more likely to apply to the program if they viewed the preferred stock as inexpensive. The coefficient indicates that if a bank considered TARP to be priced favorably in its Q3 2008 conference call, the probability that it applied for TARP money increases by 12 percentage points. Although the program was quite popular, especially in our sample of large banks, this result implies that the cost of the funds is a key consideration for banks. The coefficient on *BolsterCapital* in Model (2) is also positive and significant, indicating that banks were more likely to apply for TARP funds if they intended to use the funds to improve their capital ratios. The indicator for banks that explicitly stated an intention to lend the funds (*LendingPlan*) is significant with a coefficient of 0.23. This suggests that the TARP program design, at least as initially viewed, was successful in spurring banks' incentive to lend. In model (4), where all the CC variables are included, only the coefficient on *LendingPlan* remains significant among the four CC variables.

The program's initial appeal was significantly lower among bank CEOs with high compensation and those with high deltas, who are more concerned with the strings attached to the program. The analyst coverage variable is positive in all models in (1)–(4), and significant in two of the regressions. All of the application regressions show a positive impact from shifted loan demand, but negative loan demand is insignificant. Unlike Bayazitova and Shivdasani (2012), we do not find that the Tier 1 ratio has a statistically significant effect on the application decision, although its coefficient is negative as expected. The political

connections measure is never significant, despite the results in the prior literature.

Models (5)–(8) of Table 6 examine the factors that affected banks' decisions to take the TARP money once approved. Of the three CC variables, only *LendingPlan* has a significant coefficient. As seen in Internet Appendix Table IA1, between the time the banks applied for the funds and the time most banks accepted the funds, interest rates declined sharply, making the funds more expensive over time. This may explain why pricing affects the decision to apply more than the decision to accept the TARP money. Although the *BolsterCapital* variable is not significant in models (6) or (8), the Tier 1 capital variable has a significantly negative coefficient in all four acceptance regressions, suggesting banks that did not need the capital were less likely to take the TARP funds. Only the high delta variable among the CEO compensation variables affects the acceptance of TARP funds once approved. Similar to the application process, higher scrutiny (log of the number of analysts) increased acceptance of TARP funds. Finally, large banks are less likely to accept the funds, while banks with high LLPs (model (7) and (8)) are more likely to take the funds.

4.3. Loan growth estimations

To analyze loan growth, we focus on the four quarters after a bank receives its TARP funds and compare the actual loan growth to expected loan growth. For the non-TARP banks, which generally did not obtain any new capital, we focus on the quarters from Q1 2009 to Q4 2009. Summary statistics related to these regressions are shown in Table 5. The estimates of Eq. (3) are shown in Table 6. The dependent variable, *Meets Target_t*, equals one if in quarter *t*, a bank's cumulative increase in lending from the benchmark quarter (i.e., the quarter before receiving TARP funds) has reached or exceeded the forecast lending level, and zero otherwise. We expand the examination window from one quarter to four quarters after the TARP injection and report the results in separate columns. For the sake of brevity, we omit the results for the third quarter in the table. On the left side of the table (models (1)–(6)), we assume new capital is levered up with deposits or other debt and levered to the extent that the bank remains well-capitalized. A much more modest amount of lending is assumed on the right side, where the TARP funds are assumed to be lent out without any leverage. That is, a dollar in new capital (TARP or private) is turned into a dollar of new loans. In the odd columns, only TARP and control variables are considered, while CC variables and compensation and public scrutiny variables are included in the even columns.

All 12 regressions in Table 6 show a negative and significant coefficient on the TARP variable. For example, in column (1), the coefficient implies that TARP banks are 27 % less likely to extend new loans while maintaining the minimum ratios associated with being well-capitalized. In the Internet Appendix Table IA5, we report results where we change the amount of leverage assumed for each new dollar of capital and find that the TARP coefficient largely remains negative and significant, particularly in the short term. We plot the gap between the target loan level and the actual for TARP banks in Figure IA2, along with the gap for other banks that raised private capital or had no new capital. The figure shows that the TARP banks lent far less than they could have, while non-TARP banks also had subpar lending.

The coefficient on the *Inexpensive* indicator in Table 6 is negative in nearly every specification and statistically significant in a few of the models. When interacting with the TARP indicator in models (2)–(6), the positive coefficient is always significant and larger in magnitude than that of the *Inexpensive* indicator. Thus, the TARP banks that viewed the funds as attractively priced were somewhat more likely to use the funds

Table 4

Banks' Perspectives and TARP Participation Decisions (Apply and Accept TARP)

This table shows OLS regression estimations of the decision to apply for TARP funds (models (1)–(4)) and the decision to accept the funds after being approved (models (5)–(8)). The indicator variables *Inexpensive*, *BolsterCapital* and *LendingPlan* are from the Q3 2008 conference calls in models (1)–(4), and both the Q3 and Q4 conference calls in models (5)–(8). Banks' CEO compensation variables, including *CEO compensation > 500 K*, *High bonus*, *High delta*, and *High excessive pay*, as well as the analyst coverage variable *Log(Analysts)* are measured in 2008. *Negative loan demand* and *shifted loan demand* indicator variables are from the Q3 2008 conference calls in models (1)–(4), and from Q4 2008 conference calls in models (5)–(8). Control variables are measured as of September 30, 2008, including *Log(Assets)*, *Tier 1 ratio*, *ROA*, *Deposits*, *Wholesale debt*, *RE loans*, *Write downs*, *Derivatives > 0*, *NPLs*, *LLPs*, *PCI*, and *State macro growth*. The Appendix provides detailed definitions of the variables. Robust standard errors corrected for heteroscedasticity are shown in parentheses. ***, **, and * indicate statistically significant at the 1 %, 5 %, and 10 % level, respectively. Constant terms are not reported.

Variables	Apply TARP = 1, o.w.=0				Accept TARP = 1, o.w.=0			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Inexpensive</i>	0.12** (0.05)			0.06 (0.06)	−0.02 (0.05)			−0.04 (0.05)
<i>BolsterCapital</i>		0.15** (0.06)		−0.01 (0.08)		0.00 (0.06)		−0.04 (0.05)
<i>LendingPlan</i>			0.23*** (0.06)	0.21*** (0.07)			0.16*** (0.06)	0.18*** (0.06)
CEO compensation > 500k	−0.19** (0.08)	−0.18** (0.09)	−0.24*** (0.09)	−0.24** (0.09)	0.08 (0.11)	0.08 (0.11)	0.01 (0.10)	0.01 (0.10)
High bonus	−0.05 (0.12)	−0.04 (0.12)	−0.08 (0.12)	−0.07 (0.12)	−0.01 (0.07)	−0.00 (0.08)	−0.04 (0.07)	−0.06 (0.08)
High delta	−0.18* (0.09)	−0.22** (0.09)	−0.22** (0.09)	−0.21** (0.09)	−0.15* (0.08)	−0.15* (0.08)	−0.14* (0.07)	−0.14* (0.07)
High excess pay	0.01 (0.08)	0.03 (0.08)	0.02 (0.08)	0.02 (0.08)	0.02 (0.06)	0.02 (0.06)	0.05 (0.06)	0.05 (0.06)
Log(Analysts)	0.18 (0.12)	0.17 (0.11)	0.22** (0.11)	0.22* (0.12)	0.24*** (0.09)	0.24** (0.09)	0.25*** (0.08)	0.27*** (0.09)
Negative loan demand	0.06 (0.08)	0.06 (0.08)	0.11 (0.08)	0.10 (0.08)	−0.05 (0.05)	−0.05 (0.05)	−0.02 (0.05)	−0.02 (0.05)
Shifted loan demand	0.17** (0.08)	0.18** (0.08)	0.22*** (0.08)	0.20** (0.08)	−0.02 (0.05)	−0.02 (0.05)	−0.07 (0.05)	−0.06 (0.05)
Log (Assets)	−0.04 (0.05)	−0.02 (0.06)	−0.04 (0.05)	−0.04 (0.06)	−0.11** (0.05)	−0.11** (0.05)	−0.10** (0.04)	−0.10** (0.05)
Tier 1	−0.03 (0.03)	−0.03 (0.03)	−0.03 (0.03)	−0.03 (0.03)	−0.07** (0.03)	−0.07** (0.03)	−0.09*** (0.03)	−0.09*** (0.03)
ROA	0.06 (0.70)	0.24 (0.67)	0.98 (0.69)	0.76 (0.76)	1.01 (0.98)	0.95 (1.04)	1.09 (1.01)	1.20 (0.95)
Deposits	0.51 (0.49)	0.61 (0.51)	0.41 (0.48)	0.40 (0.48)	0.48 (0.51)	0.48 (0.51)	0.30 (0.45)	0.28 (0.46)
Wholesale debt	6.72 (4.61)	4.50 (4.61)	4.68 (4.32)	5.24 (4.43)	−0.51 (3.52)	−0.43 (3.58)	−0.86 (3.31)	−1.24 (3.41)
RE loans	−0.03 (0.26)	−0.01 (0.27)	−0.01 (0.26)	−0.02 (0.26)	−0.04 (0.17)	−0.04 (0.18)	−0.12 (0.18)	−0.14 (0.18)
Write downs	−1.12 (3.68)	−1.53 (3.83)	−2.83 (3.66)	−2.39 (3.70)	0.52 (6.20)	0.80 (6.87)	4.02 (5.74)	4.33 (6.16)
Derivatives > 0	0.05 (0.09)	0.13 (0.10)	0.09 (0.09)	0.07 (0.09)	0.05 (0.08)	0.04 (0.08)	0.02 (0.08)	0.03 (0.08)
NPLs	−4.58 (5.12)	−4.80 (5.25)	−4.99 (5.17)	−4.56 (5.12)	−5.12 (4.88)	−5.01 (4.91)	−6.23 (4.60)	−6.90 (4.50)
LLPs	2.52 (6.77)	2.56 (6.90)	5.29 (6.45)	4.05 (6.78)	11.55 (7.22)	11.08 (7.48)	11.79* (7.05)	13.68** (6.80)
State macro growth	−12.09 (18.68)	−14.06 (19.60)	−12.31 (18.43)	−13.85 (18.87)	23.28 (22.43)	22.46 (21.13)	24.50 (20.50)	28.23 (20.62)
PCI	−0.35 (0.29)	−0.35 (0.30)	−0.47 (0.29)	−0.47 (0.29)	0.35 (0.22)	0.35 (0.22)	0.05 (0.18)	−0.00 (0.19)
Observations	112	112	112	112	92	92	92	92
Adjusted R2	0.12	0.11	0.18	0.17	0.22	0.22	0.30	0.29

for lending than other banks that mentioned the low price. However, this result only holds when we consider meeting the target based on moderate capital ratios and not in columns (8)–(12). We do not find any significant coefficients on the *BolsterCapital* variable or its interaction with TARP.¹⁰

LendingPlan has a positive coefficient that is significant in model (4), which examines the second quarter of 2009 for most banks. This suggests that banks that stated an intention to lend out the funds did lend more, but the variable's interaction term with *TARP* is negative in model

(4). $TARP \times LendingPlan$ indicates that banks that took the government's money and claimed they did so to make new loans were no more likely to make loans than other banks. To determine if *LendingPlan* represents real plans to make new loans or instead is more about public relations, we include additional interaction variables with *LendingPlan*. The positive and significant coefficient for the interaction term between the shifted loan demand variable and lending plans in models (2), (8) and (10) suggests that plans to lend were more realistic when the loan demand held up. The coefficients on the negative loan demand indicator, state macro growth and NPLs also often point to economic conditions as the reason why TARP's effect was less than expected.

Several of the interactions of *LendingPlan* with compensation variables give support to the idea that lending plans were mentioned as a rebuttal to criticisms of the banks. The high compensation variable and the

¹⁰ In untabulated results, we also include the interaction of bank size and the TARP dummy. The interaction term is not significant, and its inclusion does not affect other variables.

Table 5

Summary statistics

This table reports the summary statistics for the variables in the regression sample of the forecast loan growth estimations (Table 6) at Gap = 1Q. See the Appendix for detailed variable definitions.

Variable Name	Obs.	Mean	Median	Std. dev.
Meets target (well capitalized)	113	0.09	0.00	0.29
Meets target (zero leverage)	113	0.27	0.00	0.44
<i>Inexpensive</i>	113	0.44	0.00	0.50
<i>BolsterCapital</i>	113	0.40	0.00	0.49
<i>LendingPlan</i>	113	0.56	1.00	0.50
<i>Negative loan demand</i>	113	0.43	0.00	0.50
<i>Shifted loan demand</i>	113	0.04	0.00	0.19
Log(Assets)	113	16.04	15.64	1.69
Tier 1 ratio (%)	113	9.81	9.50	1.70
ROA	113	-0.004	0.02	0.06
Deposits	113	0.70	0.70	0.09
Wholesale debt	113	0.01	0.01	0.01
RE loans	113	0.70	0.74	0.17
Write-downs	113	-0.001	-0.00	0.004
Derivatives > 0	113	0.16	0.00	0.37
Other capital injection	113	0.02	0.02	0.02
NPLs	113	0.01	0.01	0.01
LLPs	113	0.20	0.00	0.40
CEO compensation > 500K	113	0.81	1.00	0.39
High bonus	113	0.14	0.00	0.35
High delta	113	0.29	0.00	0.46
High excessive pay	113	0.33	0.00	0.47
Log(Analysts)	113	2.53	2.57	0.67
State macro growth	113	-0.01	-0.01	0.01

bonus variable, when interacting with *LendingPlan*, have significant negative coefficients, suggesting that those who are more motivated by career concerns and said they would lend were less likely to meet their targets than other highly compensated bank CEOs.

In sum, Table 6 provides several key insights into the program's ability to increase lending. First, TARP banks are, on average, more likely to miss their lending target compared to non-TARP banks, particularly when lending targets are based on well-capitalized scenarios. This reflects the fact that they obtained more capital and lent out far less than they could have while meeting regulatory ratios. While many banks claimed to have plans to lend, few mentioned plans to expand lending. That is, their plans, to the extent they were presented to investors, were more along the lines of plans to lend out some of the funds and use the rest to strengthen their competitive position rather than lever up the funds. Only a minority of the banks stated that they would lever up the funds, and the few that gave specific numbers typically planned to combine TARP funds with an equal or doubled dollar amount of deposits. The table also points to the pricing of the preferred stock as a factor in the weak lending, as were CEO career concerns. Finally, when examining stated lending plans, we find that banks experiencing increased loan demand were more likely to lend, indicating that loan demand played an important role in shaping their lending decisions.

Some banks that said they would lend out TARP capital did not even lend out as much as they had before they received the funds. These banks seem likely to have simply lied about what they planned to do with the money, but it is also possible that they made the statements truthfully and then found that conditions changed for the worse. In Table 7, we examine a subsample of banks with stated lending plans to explore the relative importance of these two possible interpretations. Instead of benchmarking on the target loan amount as in Table 6, we compare the loan level at quarter t with the loan level at Q3 2008. The dependent variable is an indicator variable that equals one if the loan amount in quarter t falls below the Q3 2008 level, and zero otherwise. The financial variables are from Q3 2008, and the CEO compensation variables are from 2008 proxy statements. We include two groups of loan demand variables: (1) ex ante loan demand variables that measure loan demand from before the TARP funds; and (2) average loan demand

variables that are from the first quarter with TARP funds in hand up to quarter t . Specifically, the ex ante loan demand measure in models (1) and (2) is usually from Q3 and Q4, while it is from the quarter just before receiving funds in models (3) and (4).¹¹ The regression specifications in even columns include region and quarter fixed effects, while the odd ones do not.

We find that loan demand and its changes are often significant factors in these regressions, indicating that banks with lending plans often stated them with intentions to follow through. Banks indicating positive loan demand from increased market share can be split into three groups: those with positive demand throughout the sample period; banks with less positive (neutral) demand after they received TARP funds; and (3) those whose business prospects diminished sharply in 2009. To capture the differential effect on lending outcomes, we create interaction terms between ex ante loan demands and the subsequent average loan demands. Table 7 shows that the likelihood of shrinking the loan portfolio is significantly lower among the first group, which can be seen by the significantly negative coefficient on the interaction between ex ante shifted loan demand and average shifted demand. The other banks with shifted loan demand were somewhat less likely to shrink their loan portfolios, but the effect is weaker and only significant in model (1).

We also see the impact of shifted loan demand among banks that did not initially observe the shift and were pessimistic about their lending prospects. That is, the interaction between the ex ante negative loan demand and average shifted demand is also significantly negative in all four specifications, suggesting that evolving market conditions play a role in banks' loan growth. In contrast, banks with negative loan demand that did not see an increase in market share were not significantly different from the rest of the banks that planned to lend, although the coefficients on the relevant variables are often positive.

Because a drop in the loan portfolio may reflect the sale of a particular loan portfolio as the bank exits that business, in Table IA7 of the Internet Appendix, we also estimate the regressions by excluding all quarters where the decline in total loans is ten percent or greater. The results are similar to the full sample of banks with plans to lend.

The evidence in Table 7 does not show a strong pattern of CEO posturing. Among the variables related to the CEO's compensation, only compensation above \$500,000 and high delta in models (3) and (4) have significant coefficients, but they have the opposite sign. However, we note that the coefficients on high compensation, high bonus, high excessive pay and high scrutiny, while not significant in most regressions, are consistently positive. We also find that poorly-performed banks, as measured by NPLs, are less likely to follow through on their stated lending plans. In contrast, banks with greater wholesale debt and real estate loans were more likely to follow their lending plan and grow their loan portfolios.

Given that TARP banks did not typically use the funds for net new loans, we consider in Internet Appendix Table IA8 how other aspects of the balance sheet changed with the equity injection. These results suggest that a substantial portion of the funds was used to raise regulatory capital ratios. We also test the impact of capital ratios in the subsample of banks that claimed to lend TARP funds, as in Table 7. We follow the same specification and test how bank characteristics and economic conditions affect their capital ratios. The results are reported in Internet Appendix Table IA9. We find that banks experiencing sustained positive loan demand are less likely to use TARP funds to bolster capital ratios. Consistent with the evidence in Table 7, this group of banks is also more

¹¹ Most banks received the funds in Q4 2008, but smaller and weaker banks sometimes waited one or two quarters longer.

Table 6

Banks' perspectives, TARP and Target Loan Growth

This table shows regression estimates of the effect of TARP and bank perspectives on target loan growth. The dependent variable equals one if the bank's loan level reaches the expected level (meets the target) and zero otherwise. In columns (1)–(6), we set the target such that banks lend out funds at the highest level that maintains well-capitalized status, while in columns (7)–(12), the target level is set so that new loans equal the total amount of TARP funds without leveraging up. TARP is a dummy variable that equals one if a bank is a TARP recipient-bank, and zero otherwise. We examine the effect in various estimation windows, e.g., Gap = 1q refers to the first quarter after receiving TARP. For non-TARP banks, we focus on quarters from Q1 to Q4 2009. We drop banks in the quarters in which they repay TARP and thereafter. Loan demand variables are constructed based on quarterly conference calls and averaged across the examination window. We interact *LendingPlan* with *Shifted loan demand*, *Tier 1*, *CEO compensation > 500 K*, *High bonus*, *High delta*, *High excessive pay* and *Log(Analysts)*. Control variables are measured at the benchmark quarter (one quarter before receiving the TARP fund), while *Other capital injection* is measured in the same quarter. Robust standard errors clustered at the bank level are shown in parentheses. The constant terms are not reported.

Variables	Target = Well-capitalized						Target = Zero leverage					
	(1) Gap = 1q	(2) Gap = 1q	(3) Gap = 2q	(4) Gap = 2q	(5) Gap = 4q	(6) Gap = 4q	(7) Gap = 1q	(8) Gap = 1q	(9) Gap = 2q	(10) Gap = 2q	(11) Gap = 4q	(12) Gap = 4q
TARP	−0.27*** (0.08)	−0.34*** (0.10)	−0.31*** (0.09)	−0.31*** (0.11)	−0.37*** (0.11)	−0.47*** (0.12)	−0.25** (0.11)	−0.43** (0.17)	−0.23** (0.10)	−0.23 (0.20)	−0.35** (0.13)	−0.48* (0.25)
TARP x <i>Inexpensive</i>		0.32** (0.14)		0.48*** (0.14)		0.49** (0.23)		−0.12 (0.32)		0.05 (0.29)		0.27 (0.31)
<i>Inexpensive</i>		−0.27** (0.13)		−0.44*** (0.13)		−0.36 (0.22)		0.06 (0.30)		−0.12 (0.26)		−0.21 (0.29)
TARP x <i>BolsterCapital</i>		0.15 (0.24)		0.02 (0.23)		0.07 (0.35)		0.38 (0.33)		0.14 (0.35)		0.20 (0.32)
<i>BolsterCapital</i>		−0.12 (0.22)		0.01 (0.22)		−0.09 (0.32)		−0.36 (0.30)		−0.14 (0.30)		−0.31 (0.38)
TARP x <i>LendingPlan</i>		0.02 (0.28)		−0.46* (0.27)		−0.22 (0.29)		0.29 (0.34)		−0.23 (0.41)		0.05 (0.51)
<i>LendingPlan</i>		0.72 (0.44)		1.39** (0.54)		0.72 (0.79)		1.02 (0.71)		1.94** (0.87)		1.86 (1.32)
Shifted loan demand x <i>LendingPlan</i>		0.77** (0.34)		0.60 (0.48)		−0.44 (0.66)		1.17** (0.53)		1.80*** (0.47)		1.70 (1.17)
Tier 1 x <i>LendingPlan</i>		−0.04 (0.04)		−0.06 (0.04)		−0.00 (0.06)		−0.10 (0.06)		−0.14* (0.08)		−0.12 (0.09)
CEO compensation > 500 K x <i>LendingPlan</i>		−0.35*** (0.12)		−0.28** (0.14)		−0.49** (0.19)		0.23 (0.24)		0.16 (0.27)		−0.19 (0.29)
High bonus x <i>LendingPlan</i>		−0.33** (0.15)		−0.35** (0.17)		−0.17 (0.24)		−0.21 (0.25)		0.00 (0.29)		0.12 (0.35)
High delta x <i>LendingPlan</i>		−0.06 (0.15)		0.04 (0.21)		0.46 (0.30)		−0.05 (0.27)		0.01 (0.37)		0.77* (0.40)
High excessive pay x <i>LendingPlan</i>		−0.06 (0.12)		−0.11 (0.11)		−0.21 (0.19)		−0.02 (0.20)		−0.15 (0.22)		−0.19 (0.28)
Log(Analysts) x <i>LendingPlan</i>		−0.00 (0.09)		−0.04 (0.09)		−0.02 (0.14)		−0.13 (0.17)		−0.17 (0.16)		−0.24 (0.20)
CEO compensation > 500 K		0.24*** (0.09)		0.25** (0.10)		0.47*** (0.13)		−0.07 (0.15)		0.03 (0.19)		0.14 (0.22)
High Bonus		0.33** (0.13)		0.33** (0.14)		0.22 (0.18)		0.22 (0.21)		0.16 (0.24)		0.15 (0.30)
High delta		0.15 (0.12)		0.11 (0.13)		−0.12 (0.15)		0.05 (0.20)		0.09 (0.25)		−0.33 (0.28)
High excessive pay		0.09 (0.10)		0.14 (0.10)		0.42*** (0.14)		−0.00 (0.16)		0.08 (0.19)		0.28 (0.23)
Log(Analysts)		−0.10 (0.09)		−0.08 (0.09)		−0.02 (0.10)		−0.07 (0.19)		−0.06 (0.17)		0.04 (0.21)
Negative loan demand	−0.15*** (0.05)	−0.14*** (0.05)	−0.13 (0.08)	−0.15** (0.07)	−0.04 (0.12)	−0.04 (0.10)	−0.03 (0.08)	0.02 (0.09)	−0.08 (0.11)	0.01 (0.12)	−0.03 (0.16)	0.10 (0.18)
Shifted loan demand	0.11 (0.23)	−0.36* (0.22)	0.02 (0.20)	−0.17 (0.21)	−0.32 (0.36)	−0.05 (0.44)	0.34 (0.34)	−0.37 (0.51)	0.08 (0.35)	−0.32 (0.38)	−0.06 (0.41)	−0.11 (0.42)
Log(Assets)	0.00 (0.03)	0.05 (0.04)	0.02 (0.03)	0.08* (0.04)	0.07 (0.05)	0.13* (0.07)	0.03 (0.05)	0.06 (0.07)	0.07 (0.06)	0.11 (0.08)	−0.02 (0.06)	0.10 (0.12)

(continued on next page)

Table 6 (continued)

Variables	Target = Well-capitalized						Target = Zero leverage					
	(1) Gap = 1q	(2) Gap = 1q	(3) Gap = 2q	(4) Gap = 2q	(5) Gap = 4q	(6) Gap = 4q	(7) Gap = 1q	(8) Gap = 1q	(9) Gap = 2q	(10) Gap = 2q	(11) Gap = 4q	(12) Gap = 4q
Tier 1	−0.00 (0.02)	0.02 (0.03)	0.03 (0.03)	0.07 (0.04)	0.01 (0.03)	0.02 (0.05)	−0.03 (0.03)	−0.00 (0.05)	−0.03 (0.04)	0.04 (0.07)	−0.02 (0.05)	0.03 (0.08)
ROA	0.48 (0.60)	−0.52 (0.62)	0.03 (0.77)	−0.39 (0.72)	0.39 (0.81)	−0.87 (0.91)	0.98 (0.80)	0.51 (1.08)	−0.25 (1.30)	−0.20 (1.46)	1.44 (1.06)	0.54 (1.39)
Deposits	−0.15 (0.39)	0.14 (0.36)	0.24 (0.41)	0.61* (0.36)	−0.19 (0.54)	0.23 (0.47)	−0.12 (0.64)	−0.19 (0.65)	0.14 (0.62)	0.30 (0.69)	0.14 (0.76)	0.73 (0.96)
Wholesale debt	−0.06 (2.71)	2.61 (3.39)	1.09 (3.60)	4.20 (4.92)	−5.10 (4.33)	−1.42 (5.73)	−7.00 (4.90)	−3.23 (6.44)	−11.33* (6.35)	−7.46 (8.21)	−4.70 (6.48)	−3.05 (9.50)
RE loans	−0.24 (0.19)	0.07 (0.19)	−0.47* (0.24)	−0.10 (0.23)	−0.20 (0.30)	0.21 (0.36)	−0.21 (0.32)	0.09 (0.36)	−0.46 (0.44)	−0.14 (0.49)	−0.39 (0.56)	−0.04 (0.71)
Write_downs	2.89 (5.19)	8.17 (6.30)	−4.03 (7.64)	1.86 (10.80)	−7.21 (14.09)	6.09 (19.14)	−6.71 (14.91)	−2.89 (13.81)	13.84 (16.42)	12.26 (21.26)	−4.00 (18.47)	14.58 (24.18)
Derivatives > 0	0.11 (0.11)	0.02 (0.10)	0.16 (0.13)	0.04 (0.10)	−0.08 (0.16)	−0.29* (0.15)	0.02 (0.19)	0.00 (0.22)	−0.02 (0.21)	−0.10 (0.22)	−0.02 (0.23)	−0.36 (0.27)
NPLs	−3.65 (2.36)	−0.84 (2.47)	−2.55 (2.94)	0.99 (3.11)	−10.43** (4.32)	−6.48* (3.80)	−10.44*** (3.80)	−11.58*** (3.99)	−9.95** (4.38)	−9.26* (4.83)	−15.05*** (5.11)	−15.95** (6.16)
LLPs	1.10 (2.85)	−4.14 (3.96)	−0.90 (3.52)	−3.02 (4.27)	2.33 (6.91)	−3.56 (6.50)	1.23 (5.23)	0.02 (6.50)	−6.30 (6.31)	−1.90 (7.97)	5.85 (8.49)	7.94 (10.67)
Other capital injection	−0.11* (0.06)	−0.07 (0.07)	−0.12* (0.07)	−0.09 (0.09)	−0.04 (0.11)	−0.09 (0.10)	0.15 (0.12)	0.14 (0.14)	0.11 (0.11)	0.11 (0.17)	0.09 (0.11)	0.01 (0.13)
State macro growth	6.54 (5.18)	1.02 (5.18)	12.09 (9.62)	−1.00 (8.43)	16.62 (16.75)	0.98 (15.66)	−2.48 (8.30)	−0.08 (9.17)	2.34 (12.80)	−6.20 (14.68)	−27.22 (22.91)	−28.16 (27.32)
Observations	113	113	100	100	87	87	113	113	100	100	87	87
Adjusted R2	0.17	0.33	0.23	0.43	0.23	0.43	0.12	0.14	0.17	0.18	0.25	0.16
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 7

Bank characteristics, economic conditions, and failure to meet lending plan
This table shows the results of OLS regression estimations on banks' failure to materialize their stated lending plans. Our sample period is from Q1 2009 to Q4 2009. The sample includes banks that stated any lending plans in either Q3 or Q4 2008. The dependent variable, *Failure to meet the lending plan*, equals one if a bank's total loan amount (adjusted for any acquisition) in a certain quarter t falls below the total loan amount in Q3 2008. We consider ex ante measures of loan demand, (*Ex ante shifted loan demand* and *Ex ante negative loan demand*), as well as average loan demand from first quarter after receiving TARP fund till the quarter t (*Average shifted loan demand* and *Average negative loan demand*). Specifically, ex ante loan demand variables are measured at 2008Q3/Q4 in models (1)–(2), and are measured at the lagged one quarter before receiving TARP in models (3)–(4). Banks' CEO compensation variables, including *CEO compensation* > 500 K, *High bonus*, *High delta*, and *High excessive pay*, as well as the analyst coverage variable *Log(Analysts)* are measured in 2008. Control variables are measured as of September 30, 2008, including *Log(Assets)*, *Tier 1 ratio*, *ROA*, *Deposits*, *Wholesale debt*, *RE loans*, *Write downs*, *Derivatives* > 0, *NPLs*, *LLPs*, *Other capital injections* and *State macro growth*. The Appendix provides detailed definitions of the variables. Robust standard errors corrected for heteroscedasticity are shown in parentheses. ***, **, and * indicate statistically significant at the 1 %, 5 %, and 10 % level, respectively. Constant terms are not reported.

Variables	Failure to meet the lending plan = 1, o.w.=0			
	(1)	(2)	(3)	(4)
Ex ante shifted loan demand	−0.31*	−0.21	−0.04	0.08
	(0.18)	(0.17)	(0.27)	(0.28)
Ex ante shifted loan demand*Average shifted loan demand	−0.53*	−0.81***	−1.09**	−1.58***
	(0.30)	(0.29)	(0.47)	(0.47)
Ex ante shifted loan demand*Average negative loan demand	−0.06	−0.08	−0.45	−0.53
	(0.19)	(0.18)	(0.32)	(0.31)
Ex ante negative loan demand	0.15	0.22	0.13	0.22
	(0.15)	(0.14)	(0.14)	(0.16)
Ex ante negative loan demand*Average shifted loan demand	−0.86***	−0.84***	−1.03***	−0.87***
	(0.23)	(0.20)	(0.25)	(0.23)
Ex ante negative loan demand*Average negative loan demand	0.09	0.01	−0.03	−0.16
	(0.13)	(0.14)	(0.18)	(0.19)
CEO compensation > 500 K	0.05	0.09	0.40***	0.37**
	(0.21)	(0.20)	(0.15)	(0.15)
High Bonus	0.09	0.03	0.05	−0.03
	(0.19)	(0.20)	(0.23)	(0.22)
High delta	−0.16	−0.23	−0.30*	−0.33**
	(0.19)	(0.18)	(0.15)	(0.14)
High excessive pay	0.05	0.00	0.04	−0.02
	(0.11)	(0.10)	(0.11)	(0.10)
Log(Analysts)	0.20	0.13	0.15	0.01
	(0.13)	(0.13)	(0.13)	(0.14)
Log (Assets)	−0.05	−0.03	−0.03	0.03
	(0.07)	(0.06)	(0.08)	(0.07)
Tier 1	0.04	0.06	0.09*	0.10**
	(0.06)	(0.06)	(0.05)	(0.05)
ROA	0.84	0.10	2.09	1.33
	(1.59)	(1.43)	(1.94)	(1.59)
Deposits	−0.81	−0.91	−1.05	−0.85
	(0.64)	(0.67)	(0.77)	(0.80)
Wholesale debt	−8.61	−9.00*	−11.96**	−11.71**
	(5.42)	(4.85)	(4.98)	(4.87)
RE loans	−0.52	−0.64**	−0.57	−0.75***
	(0.35)	(0.25)	(0.37)	(0.24)
Write downs	0.66	2.25	−13.21	−12.04
	(12.29)	(10.77)	(12.82)	(10.15)
Derivatives > 0	0.10	0.20	0.37*	0.42**
	(0.21)	(0.20)	(0.19)	(0.21)
NPLs	7.94	8.26	12.29*	12.72*
	(5.05)	(4.97)	(6.58)	(6.41)
LLPs	1.76	−1.33	1.74	0.54
	(8.29)	(7.05)	(10.68)	(8.21)
Other capital injection	0.03	−0.04	0.03	−0.06

Table 7 (continued)

Variables	Failure to meet the lending plan = 1, o.w.=0			
	(1)	(2)	(3)	(4)
State macro growth	(0.10)	(0.10)	(0.11)	(0.11)
	22.56**	19.65	25.94***	21.26
	(8.54)	(17.42)	(9.30)	(17.29)
Observations	193	193	193	193
Adjusted R2	0.36	0.39	0.32	0.36
Region FE	No	Yes	No	Yes
Quarter FE	No	Yes	No	Yes

likely to meet their stated lending plans.¹²

Overall, while we cannot entirely rule out the possibility that some banks strategically mentioned lending plans in their conference calls, the findings collectively underscore the view that banks' shift from plans to lend to bolstering capital ratios with TARP funds is more reflective of deteriorating economic conditions than CEO posturing.

5. Robustness tests

5.1. Banks' perspectives and TARP decisions

We estimated several different specifications of the regressions related to TARP application and acceptance. For the sake of brevity, the results are not included in a table. First, we included additional control variables in all of the regressions in Table 4, based on the research in Bayazitova and Shivdasani (2012) and Duchin and Sosyura (2012). Due to the smaller size of our sample and the fact that all of our banks are larger than average, many of the additional control variables are insignificant, despite being significant in previous research. Nonetheless, our main findings remain quantitatively similar to those in Table 4. Second, we estimate the regressions in Table 4 using CC variables measured at alternative time periods (i.e., Q3 and/or Q4 2008), and find quantitatively similar results. Finally, we estimate logistic models instead of linear ones to determine the impact of the CC and LD variables on applications and acceptance decisions. Our results from this analysis are not as robust, but generally align with the findings in Table 4.

5.2. Banks' perspective and lending

Our analysis of the impact of TARP on loan growth differs from previous research that uses a DID framework. In the Internet Appendix Table IA10, we report results using that framework with two measures of the dependent variable: (1) loans are scaled by the previous quarter's loans, and (2) loans are scaled by the previous quarter's assets. In the first specification, we find that the TARP indicator is significantly positive, but the $TARP \times Post$ variable is not significantly different from zero. When the dependent variable in the DID regressions is the loan change scaled by lagged assets, we find sharply different results. This is likely due to the scaling variable's correlation with the explanatory variables.¹³ These findings suggest that bank characteristics significantly influence loan growth, potentially violating the assumptions of the DID framework.

The dependent variable in Table 6 is an indicator variable set to one if the bank's loans meet or exceed the amount expected of its existing

¹² The results in Internet Appendix Table IA9 also show that banks that experienced sustained negative loan demand are also less likely to boost capital ratios. A potential explanation is that these were poorly performing banks that used TARP funds for other purposes. For example, several banks stated that their immediate use was to pay down brokered deposits or other costly debt. Combined with losses, those facing continued negative demand could experience a drop in capital.

¹³ Welch (2022) points out that correlations between scaling variables and explanatory variables can lead to spurious conclusions in panel datasets.

capital, TARP and regulatory capital requirements. An alternative approach would be to measure the percentage difference between the expected amount and the actual amount. In Internet Appendix Table IA6, we estimate regressions with this dependent variable and find similar results.

Although there are only six forced TARP banks in our sample, one concern is that their lending plans may differ substantially from other TARP banks. Moreover, two forced banks had business models not centered on lending and sometimes lacked discussions related to lending in their conference calls.¹⁴ Given the significant amount of TARP funds allocated to them, their inclusion in the analysis may be unsuitable from a statistical perspective. To allay this concern, we conduct robustness tests where the sample excludes the forced TARP banks and find results confirming that the effects are not driven by forced banks.

In our analysis of actual lending compared to the target amount (Table 6), we assume banks could secure sufficient deposits to profitably lever up the new capital and achieve the target loan amount. If debt markets were frozen at the time and banks were more likely to suffer a run (Rose, 2023), this assumption would not hold, and our findings might instead reflect banks' inability to access cheap deposits. In untabulated results, we find that the TARP banks experienced positive deposit growth in the quarters after receiving the TARP funds, whether we measure the growth of all deposits or core deposits. The banks that did not receive TARP funds, which we previously noted were a mix of healthy and weak banks, had zero growth in early 2009 but positive growth over the entire year. Thus, the lack of access to deposit funds does not explain the low loan growth. Moreover, even assuming no leverage (so that the target is to simply lend out each dollar of TARP funds), we find that TARP banks are no more likely to meet their target loan amounts and some coefficients imply they are less likely.

5.3. Measures of loan demand

Our qualitative measures of loan demand are likely to be measured with noise, as they are constructed by reading the transcripts. We initially create four indicator variables related to loan demand: shifted positive, any positive, neutral, and negative. In our regressions, we choose to focus on the shifted positive demand variable and the negative demand. The shifted positive one is the most reliable, requiring both that the reader find a sentence about positive demand and a sentence giving a reason why it is unusually high. In untabulated estimations, we consider regressions where the only *LD* variable is the shifted demand variable. We continue to find that higher loan demand (as measured by the shifted loan demand variable) is associated with a significantly higher likelihood of applying for TARP. The demand variable does not affect acceptance. Including only shifted demand in the loan growth regressions leads to similar estimates and significance without impacting the TARP indicator coefficient or its interactions in Table 6.

6. Conclusion

A government program to jump-start the economy by buying preferred stock from banks and having it count as regulatory capital has the potential to mitigate the effects of a financial crisis. Theoretically, such a program helps recapitalize banks that have a debt overhang

problem while discouraging excessive investment by banks that do not need the funds (Philippon and Schnabl, 2013). Empirically, the success of such a program depends on whether the capital is priced appropriately, whether the incentives of the banks to lend funds are aligned with the program, and the extent of loan demand in the economy.

When asked what they planned to do with the TARP funds if approved, only a fraction of the banks in our sample stated that they intended to make new loans and even fewer planned to lever up the capital. These banks were more likely to pay their CEOs more than \$500,000 and less likely to face negative loan demand. Some banks indicated that the TARP capital would help raise their regulatory capital levels, and these banks were more likely to apply to TARP but no more inclined to take the funds than others. Loan demand was weak in many markets when TARP was initiated, but a few banks mentioned in their conference calls that diminished competition from larger banks allowed them to gain market share. Among the banks that said they planned to use TARP for new loans, the ones with shifted demand were more likely to actually make the loans.

We further show that TARP banks are more likely to miss their target loan growth compared to non-TARP banks. We find some evidence that CEO career concerns were a factor in the low level of loan growth and that their concern for their personal finances may have motivated them to overstate their plans for lending out TARP funds. However, the less than straightforward descriptions of plans for TARP do not explain why banks that said they would lend failed to even maintain their pre-TARP loan levels. Rather, these declines in lending are more closely associated with worsening economic conditions between the time the program was announced and the funds were allocated. Finally, we show that TARP banks strengthened capital ratios after receiving the funds, which significantly contributed to the anemic level of credit supply.

When Treasury Secretary Paulson asked Congress to approve the TARP program, he argued that its passage would address the problem of frozen credit markets, not merely inject funds into the banking system.¹⁵ While politicians and regulators hoped the program would boost credit supply, it offered only weak incentives to lend out the funds, especially in the face of rising uncertainty. Moreover, without restrictions on how the funds were to be used, banks pursued more profitable alternatives even if they initially planned to lend out the funds. Our analysis suggests that, despite being heavily subsidized, TARP was not considered inexpensive enough to generate many profitable loans in 2009. Banks' views shifted between Q3 and Q4 2008, likely due to the 5 % dividend rate appearing high relative to the lower Federal Funds rate of 2009. Their view that new loans would only be profitable if TARP funds were levered up with cheaper deposits meant that the money would be used either for new loans or capital, but not both. Levering up is a commonly pursued strategy in normal times, but in a period when losses were increasing, banks prioritized using TARP to strengthen their capital ratios. Few banks met the goal of leveraging up the funds at a rate consistent with well-capitalized status and typically did not even lend out TARP funds without leverage (i.e., a dollar of new TARP capital seldom translated to a dollar of additional lending).

Therefore, even if economists and regulators are pleased with its positive effects on the capital ratios of US banks, its success in unclogging the flow of capital impressed few Americans enough to ask

¹⁴ State Street and Bank of New York Mellon were missing information on loan demand in some of the quarters. In those cases, all of the loan demand variables were set to zero.

¹⁴ State Street and Bank of New York Mellon were missing information on loan demand in some of the quarters. In those cases, all of the loan demand variables were set to zero.

¹⁵ Testimony by Secretary Henry M. Paulson, Jr. before the House Committee on Financial Services Hearing on Turmoil in U.S. Credit Markets: Recent Actions regarding Government Sponsored Entities, Investment Banks and other Financial Institutions on September 24, 2008.

Congress to approve a similar program in the future.

CRedit authorship contribution statement

Jean Helwege: Writing – review & editing, Writing – original draft,

Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Xin Liu:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.jfi.2025.101180](https://doi.org/10.1016/j.jfi.2025.101180).

Appendix 1. Variable definitions

Variables	Definition
<i>A: Categories of banks</i>	
Forced TARP	Belongs to the group of six banks that accepted TARP funds on the same day that the program was first announced.
Voluntary TARP	Belongs to the group of banks that accepted TARP funds and which were not Forced TARP banks.
Non-TARP	Belongs to the group of banks that did not issue preferred stock under the CPP program.
<i>B: Conference call variables</i>	
Inexpensive	A dummy variable that equals one if a bank says that the price of TARP is low in a given quarter's conference call and zero otherwise.
BolsterCapital	A dummy variable that equals one if, during a given quarter's conference call, a bank says TARP money would bolster its capital ratio, and zero otherwise.
LendingPlan	A dummy variable that equals one if, during a given quarter's conference call, the bank states that it plans to lend out the TARP capital if it receives the funds.
AcquisitionPlan	A dummy variable that equals one if, during a given quarter's conference call, the bank states that it plans to use the TARP capital for acquisitions if it receives the funds.
Negative loan demand	A dummy variable that equals one if, during a given quarter's conference call, the bank states that it perceives weak loan demand, and zero otherwise. Please refer to table captions for details on the timeframe of the variable used.
Shifted loan demand	A dummy variable that equals one if, during a given quarter's conference call, the bank explicitly states that its positive loan demand reflects demand from customers that previously would have borrowed from other banks, and zero otherwise. Please refer to table captions for details on the timeframe of the variable used.
Ex ante negative loan demand	In Table 7, we construct two measures of ex ante negative loan demand: (1) A dummy variable that equals one if, either in 2008 Q3 or Q4's conference calls, the bank states that it perceives weak loan demand, and zero otherwise. (2) A dummy variable that equals one if, in the quarter before a bank receives TARP fund, during its conference call, the bank states that it perceives weak loan demand, and zero otherwise.
Ex ante positive loan demand	In Table 7, we construct two measures of ex ante shifted loan demand: (1) A dummy variable that equals one if, either during 2008 Q3 or Q4's conference calls, the bank explicitly states that its positive loan demand reflects demand from customers that previously would have borrowed from other banks, and zero otherwise. (2) A dummy variable that equals one if, in the quarter before a bank receives TARP fund, during its conference call, the bank explicitly states that its positive loan demand reflects demand from customers that previously would have borrowed from other banks, and zero otherwise.
Average shifted loan demand	The average of the shifted loan demand indicators from the quarter after receiving TARP funds through quarter t .
Average negative loan demand	The average of the negative loan demand indicators from the quarter after receiving TARP funds through quarter t .
<i>C: Dependent variables</i>	
Fails to meet lending plan	A dummy variable set to one if the bank planned to lend, but its total loans in quarter t fell below the level of loans in Q3 2008; zero otherwise.
Tier 1 ratio (%)	Tier 1 capital divided by RWA.
Tier 1 leverage ratio (%)	Tier 1 capital divided by assets.
Boost Tier 1 ratio	A dummy variable set to one if the bank's Tier 1 ratio in quarter t is greater than the level in Q3 2008; zero otherwise.
Boost Tier 1 leverage ratio	A dummy variable set to one if the bank's Tier 1 leverage ratio in quarter t is greater than the level in Q3 2008; zero otherwise.
Shrink	A dummy variable that equals 1 if the firm experiences a reduction in assets and zero otherwise
MBS(%)	MBS is divided by total assets.
Meets target	A dummy variable that equals one if a bank's loan growth between quarter t and the quarter before receiving new capital reached the forecast level and zero otherwise. The forecast loan growth assumes that the new capital (TARP or equity issued to private investors) is levered up with deposits or other debt. We use different leverage levels in our analyses. In Table 6, we use two degrees of leverage that achieve target loan growth at (1) the maximum loan amount that would allow the bank to remain well-capitalized in all three capital ratio categories, or (2) the amount that equals the total amount of TARP without leveraging up. In robustness tests, the forecast loan growth amount is set to equal 2, 5 or 8 times the amount of TARP funds.
<i>D: Financial variables</i>	
Log(Assets)	Logarithm of total assets.
ROA	Return on total assets.
Deposits	The dollar value of deposits, scaled by total assets.
Wholesale debt	Wholesale debt/total assets.
RE loans	Real estate loan/total loans.
Write-downs	The dollar value of realized and mark-to-market losses on trading assets from September 30, 2007 to September 30, 2008, scaled by average loans.
Derivatives > 0	A dummy variable that equals one if a bank's level of derivatives is greater than zero, and zero otherwise.
Δ Derivatives > 0	A dummy that equals one if a bank increases its use of derivatives, and zero otherwise.
Other capital injection	A dummy variable that equals one if a bank receives capital injections from sources other than TARP, and zero otherwise.
NPLs	The dollar value of nonperforming loans, scaled by total loans.
LLPs	The dollar value of loan loss provisions, scaled by total loans.
PCI	Following Duchin and Sosyura (2012), the political connections index (PCI) is measured as the firms' average percentile rank in the sample calculated using four measures of political connections: (1) connection to the House Financial Services Subcommittee; (2) number of connected board members; (3) the amount spent on lobbying; and (4) contributions to Financial Services Subcommittee members.
CEO compensation > 500k	The variable equals one if the CEO's annual compensation (reported in the 2008 proxy statement) is greater than \$500,000, and 0 otherwise.
High bonus	A dummy variable that equals one if a CEO's bonus/salary in 2008 is in the top 25 % of the sample.

(continued on next page)

(continued)

Variables	Definition
High delta	A dummy variable that equals one if a CEO's delta in 2008 is in the top 25 % of the sample. Delta is calculated following Coles et al. (2006).
High excess pay	A dummy variable that equals one if a CEO's excess pay in 2008 is in the top 25 % of the sample. Following Bliss and Rosen (2001), we calculate excess pay as the residual from a regression of compensation on bank size and performance.
Log(Analysts)	The logarithm of the number of analysts covering a bank.
State macro growth (%)	State macro growth is calculated using changes in the Federal Reserve Bank of Philadelphia's state-coincident indexes weighted by the share of deposits of a given bank in a given state.
Region	Classified into four regions. South: if a bank is located in states: NC, AL, AR, SC, MS, FL, LA, VA, MD, or TN. West: if a bank is located in states: CA, UT, AZ, HI, WA, OR, or TX. Northeast: if a bank is located in states: NE, NY, PA, RI, MA, CT, or DE. Midwest: if a bank is located in states other than the above three regions.

Appendix 2. Construction of the Conference Call Variables

Our conference call variables can be classified into two groups. The variables in the first group are related to banks' views of the TARP funds. The second group reflects banks' views of loan demand.

To create the set of variables related to TARP, we focus on banks' conference calls for Q3 and Q4 2008. We first use a computer algorithm to identify texts in the conference call transcripts related to TARP. We use keywords about TARP, such as "TARP", "CPP", "Capital Purchase Program", and "Troubled Asset Relief Program", to identify the parts of the conference call transcript where banks discussed the TARP program. We then manually read these paragraphs to categorize the nature of the comments and questions. We found that they mainly included banks' plans for the funds, the cost, and whether loan demand was strong enough to deploy all of the funds. The discussions about loan demand were common in most quarters, which led us to collect qualitative data on loan demand from all the quarters between 2007 and 2009 (and 2010 for banks that received TARP in 2009).

We created a conference call variable *Inexpensive*, to reflect banks' view of the cost of the TARP fund. It is set to one if, in the conference call, the management of the banks indicated that the TARP funds were inexpensive or the pricing was attractive. A large fraction of banks viewed TARP funds as a cheap source of capital in Q3 2008, whereas in Q4 2008, more banks stated that the TARP funds were costly.

We also created a set of variables to reflect the banks' plans for the TARP funds. We group these into three main categories: *LendingPlan*, *BolsterCapital*, and *AcquisitionPlan*. *LendingPlan* is set to one if a bank states that it plans to lend out the TARP capital. *BolsterCapital* is an indicator that is turned on if a bank says TARP money would improve its capital ratio. *AcquisitionPlan* identifies the group of banks that planned to use the TARP capital for acquisitions.

To create the loan demand variables, we searched each transcript's pdf file using Acrobat for phrases that we found were commonly used in discussions about loan demand. These searches involved reading the sentence containing the relevant phrase and then reading the sentences before and after that sentence to understand the context. We first searched on the phrase "loan demand" and when it was not found, then searched on the word pipeline. Transcripts that did not refer to either were searched for discussions about general economic conditions in the bank's market or discussions about expected loan growth. In all cases, other parts of the transcript were read to determine if the sentence was representative of the entire discussion. This would not necessarily have been the case if the discussion was about one aspect of the bank's business. For example, if the demand was described as very healthy in the credit card business but the bank's portfolio mainly included mortgage and home equity loans then the comments on credit card demand were not used as the sole basis of the variable coding and the search continued. When the main basis for loan demand coding was information about expected loan growth, we mainly found that predicted loan growth in the single digits implied neutral demand. A forecast of negative loan growth was also the basis for setting the negative demand dummy equal to one. Positive demand was often described by the bank as double-digit loan growth or given as a reason for expanded hiring of loan officers or for opening a facility that focused on loan production. The shifted loan demand indicator was set to one only when the positive demand indicator was set to one and we also found that the bank explicitly stated that their loan growth would be high from clients that previously banked with another (typically larger) institution.

Below are examples of how the indicators were coded.

Inexpensive

"CPP money is a relatively inexpensive form of capital...", "today it's very well priced and timely capital" "the Capital Purchase program... is a source of very inexpensive capital", "the program is the most cost-effective source of capital available"

Lending Plan

"real opportunity to really do something in terms of just starting some lending...", "if we do get the capital, there is a few specific niche lending and deposit initiatives", "So where we see the TARP money is to support strong organic growth.", "...with that additional capital...support the balance sheet and to fund our loan growth", "There's several plans...[for]the TARP money but we think that the loan demand will certainly be good enough to feed that", "our intent is to use the funds to help support lending activity...", "we are supporting our communities by lending...consistent with the intent of the CPP".

Bolster Capital

"The new capital is expected to increase our total risk-based capital ratio upward of 16 %", "This funding gives us a foundation and generates additional lending to our customers and then also builds our capital reserves", "the bank's already strong capital ratios would strengthen dramatically with participation in this program".

Acquisition Plan

“...there are going to be some acquisition opportunities...and this is a relatively inexpensive way to raise capital for acquisition...”, “we have looked in detail at acquiring three institutions...we will think about the use of this capital in the same way...”, “the motivation for us to consider [TARP]...is to prepare ourselves for hopefully some [acquisition] opportunities going forward”, “We hope to use [TARP] to...acquire deposit bases...of failed institutions from the FDIC on cheap terms”

Positive loan demand due to shifted demand:

First Merchants Q3 2008:

“Brian Martin, Analyst: “...I guess away from the credit side for a minute, just the – can you comment a little bit just on the loan pipeline and kind of what you guys are seeing and maybe just give a little color where your Indianapolis footings are right now, before you close a transaction of Lincoln and maybe just kind of some expectations for that market, as you go forward and fold them in.

Michael Rechin, CEO: Sure, Brian, it’s Mike. The – you talk about the environment itself. Loan demand is probably as strong as I can remember it. And it clearly then, all of us knowing the general economic conditions, isn’t reflective necessarily of economic vitality, but somewhat I think of the fact that all financial institutions have really modified their appetite. Some of the larger super regionals seemingly, not willing to lend at all, although that would just be my opinion. It does manifest itself in our bankers seeing more opportunities. That won’t reflect itself, Mike Stewart is here with me. That won’t reflect itself in our earning asset growth meeting that demand level, because of our own appetite to refine our underwriting and to add continued balance to the portfolio.”

Negative loan demand:

Sun Bancorp Q3 2008:

“Bruce Dansbury, COO: Okay. Thanks, Tom. Well, clearly the economic climate and external influences continued to impact our credit quality. What we saw previously as a weakness in the residential real estate market has now spread to the overall economy, and we are seeing a slowdown affecting more of our commercial borrowers. Those experiencing the greatest impact are companies closely associated with the residential real estate market and consumer spending. Reduced consumer demand appears to be the rule of the day. Evidence of these economic challenges is reflected in our increased loan loss provision and increased level of nonaccrual loans, as well as our loan chargeoffs.”

Data availability

The authors do not have permission to share data.

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