

Do Business Borrowers Benefit from Bank Bailouts? – The Effects of TARP on Loan Contract Terms[§]

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Abstract

We investigate benefits to business borrowers from bank bailouts – specifically the Troubled Asset Relief Program (TARP). Applying difference-in-difference methodology to loan-level data, we find more favorable contract terms in five dimensions – spread, amount, maturity, collateral, and covenants – suggesting increased credit supply to borrowers of bailed-out banks at the *intensive margin*. Findings are robust to dealing with endogeneity and other issues. Riskier borrowers benefit more, consistent with moral hazard exploitation. Small and unlisted borrowers benefit less, suggesting fewer benefits for more financially-constrained firms. Benefits accrue to both relationship and non-relationship borrowers. Results contribute to research and policy debates on bank bailouts.

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1. Introduction

Do bank bailouts result in net benefits or costs for the borrowers of bailed-out banks? From a policy perspective, whether or not bailouts are worthwhile depends on their many consequences, one of which is whether the borrowers from the recipient banks benefit. Many of the other consequences, such as changes in real economic conditions, competitive advantages conferred, and systemic risk, are covered elsewhere in the literature, but there is very little evidence on how bailouts affect borrowers. This is an important research question because treatment of loan customers directly affects their financial conditions, which drive economic recovery and growth. The event study evidence that does exist on this question is contradictory and only covers borrowers with prior relationships with these banks.

We address this question by examining the effects of the U.S. Troubled Asset Relief Program (TARP) bailout during the recent financial crisis on loan contract terms to business borrowers of bailed-out banks. Using difference-in-difference methodology, we find that business borrowers get more favorable loan contract terms in all five dimensions studied. Conditional on borrower and bank characteristics, loan type, industry, and time, recipient banks granted loans with lower spreads, larger amounts, longer maturities, less frequency of collateral, and less restrictive covenants. This is consistent with an increase in credit supply at the *intensive margin*, suggesting that the recipient banks' borrowers benefited from the TARP program. Our findings are statistically and economically significant, and are robust to dealing with potential endogeneity issues and other checks.

Our approach departs from the existing literature in a number of important respects. First, whereas most prior bailout research is at the bank level (e.g., Black and Hazelwood, 2013; Li, 2013; Berger and Roman, 2015; Akin, Coleman, Fons-Rosen, and Peydró, 2016; Ng, Vasvari, and Wittenberg-Moerman, 2016) or market level (e.g., Puddu and Walchli, 2015; Berger and Roman, forthcoming), we use loan-level data and examine the effects of TARP from the perspective of the borrowers. The loan-level data allow us to control for borrower risk and other characteristics to see if the supply of credit is affected by TARP versus whether instead there is a change in demand which is manifested in these borrower characteristics.

This is important because certain types of loan customers may self-select to borrow from TARP banks or non-TARP banks, which would in itself cause loan contract terms to change. The numerous studies of the effects of TARP on bank lending supply at the bank level are unable to account for borrower characteristics and credit demand. As discussed below, this literature reports mixed results.

Second, to our knowledge, we are the first to use multidimensional information about bank loans, examining the effects of TARP on five key loan contract terms. Previous literature examines loan supply at the extensive margin – the quantity of loans. This is insufficient to determine the benefits to borrowers because of the possibility that the banks extract all the gains from the borrowers in the form of higher loan spreads or other harsher loan terms.²

Third, our loan-level analysis allows us to identify which types of borrowers benefit most from the bailout program. Our results suggest that improvements in loan contract terms are greater for riskier borrowers than for safer borrowers. This is consistent with TARP banks attempting to attract riskier borrowers that yield higher expected returns for the banks. Such preferential treatment of riskier borrowers is consistent with an increase in the exploitation of moral hazard incentives. We also find that improvements in loan contract terms are greater for less-financially-constrained borrowers than for more-financially-constrained borrowers, suggesting fewer benefits for borrowers most in need of funding, limiting on the potential positive effects of TARP on the economy. In addition, we find improved credit terms to both relationship and non-relationship borrowers, consistent with the notion that TARP banks used bailout funds to reach out to both new and existing borrowers. This finding suggests that other studies focusing only on borrowers with prior relationships with TARP banks may overlook some benefits of the program.

Our paper contributes to several strands of literature. We add to the literature on the effects of bailouts on bank borrowers. Two event studies look at the valuation effects of TARP on relationship customers and document opposing results. Norden, Roosenboom, and Wang (2013) find that TARP led to

² In additional tests, we find that banks increased the probability of issuing loans during the post-TARP period to their pre-TARP period borrowers. This complements our main analysis by showing an increase in credit supply at the *extensive margin* as well as at the *intensive margin*.

a significantly positive impact on relationship firms' stock returns around the time of TARP capital injections. In contrast, Lin, Liu, and Srinivasan (2014) find that relationships borrower suffered significant valuation losses around the time of TARP approval announcements.

Our work adds to this research in three main ways. First, the valuation changes in these studies may be due to expectations of better or worse direct treatment of the borrowers by TARP banks, but it is unknown from these studies alone whether these expectations were met in practice. In contrast, we examine actual changes in borrower treatment. In effect, the event studies may reveal a noisy signal about borrower treatment, while we measure it more directly.

Second, stock returns around TARP dates may partially be driven by other indirect factors that are not specifically related to the treatment of the loan customers – such as expectations of changes in local economic conditions – but are correlated with bailouts of their banks. As discussed below, the TARP selection criteria targeted “healthy, viable institutions,” which may mean that TARP was more often given to banks in markets with improving local conditions, which in turn may be related to positive stock market returns for their relationship borrowers. Unlike event studies in which all control variables must be measured before or on TARP announcement dates, we are able to control for borrower characteristics at the time the loans are issued and examine the actual effects of TARP on the borrowers' loan contract terms. Controlling for borrower characteristics at the time of loan issuance is crucial for alleviating the identification problem. This is because changes in local economic conditions and borrower characteristics between TARP initiation and the time when the loan is issued may be correlated with TARP acceptance, but not caused by TARP itself.

Third, event studies are by construction limited to borrowers with existing relationships with the banks and cannot measure the effects of TARP on non-relationship borrowers. In contrast, we are able to measure the latter effects and in fact find that non-relationship borrowers benefited slightly more than relationship borrowers from the bailout program.

We also add to the studies that investigate the effects of bank bailouts on credit supply. As briefly noted above, a number of studies examine the effects of bailouts on the quantity of credit, i.e., the credit

supply at the *extensive margin*, and reach conflicting results. Berrospide and Edge (2010), Li (2013), Puddu and Walchli (2013), Chavaz and Rose (2017), Berger and Roman (forthcoming), and Chu, Zhang, and Zhao (forthcoming) find that TARP banks expanded their quantities of credit; Black and Hazelwood (2013) find mixed results; Lin, Liu, and Srinivasan (2014) find a decline in credit supply; and Bassett and Demiralp (2014) and Duchin and Sosyura (2014) do not find any evidence of a change in credit supply. We are able to extend the research to cover the *intensive margin*, or how the borrowers that receive credit are treated using information on five loan contract terms.

We argue that a full understanding of credit supply effects requires examination at the *intensive margin*. Prior studies of changes in loan quantities that disregard loan contract terms may fail to capture important components of the TARP effects. For example, if TARP banks grant loans with longer maturities, their borrowers may be able to fund larger projects with longer investment horizons.³ Our analysis of multiple loan contract terms quantifies TARP's economic impacts beyond changes in credit supply measured in a more limited sense by the volume of new loan commitments.

Our paper also supplements the bank bailout and moral hazard literature. Bailouts might raise expectations of future bailouts, increasing moral hazard incentives for banks to take more risk (e.g., Acharya and Yorulmazer, 2007; Kashyap, Rajan, and Stein, 2008). Alternatively, bailouts such as TARP might reduce moral hazard incentives because of the additional bank capital or because of extra explicit or implicit government restrictions on these institutions (e.g., Duchin and Sosyura, 2014; Berger and Roman, 2015, forthcoming). Recent papers that empirically investigate this issue find large TARP banks tend to grant riskier loans after the bailouts (Black and Hazelwood, 2013⁴; Duchin and Sosyura, 2014). This evidence is generally viewed as support for the increased exploitation of moral hazard incentives.⁵

³ Additionally, lower covenant intensity may relax borrower credit constraints and increase investment flexibility, while less restrictive collateral requirements may allow borrowers to use assets to secure financing from other sources.

⁴ Black and Hazelwood (2013) find a decrease in risk-taking for small recipient banks, but we focus here primarily on large banks because lenders in DealScan dataset are mainly large banks.

⁵ One study that takes an alternative approach finds that TARP reduced contributions to systemic risk of recipient banks, and this occurred more for banks that were safer *ex ante*, suggesting reduced exploitation of moral hazard incentives (Berger, Roman, and Sedunov, 2016).

However, an increase in average borrower risk by TARP banks is not a sufficient condition for increased exploitation of moral hazard. An alternative explanation is that TARP increases the supply of credit overall and TARP banks dip deeper into the pool of riskier borrowers to lend more. Our analysis of loan contract terms conditional on borrower risk and other characteristics is an alternative approach to test the moral hazard hypothesis. We find that most of the improvements in loan contract terms associated with TARP go to riskier borrowers, consistent with TARP banks' effort to attract borrowers that yield them higher expected returns. This favorable treatment of riskier borrowers is in accord with an increase in the exploitation of moral hazard incentives.

In addition, we contribute to the literature on the effects of bailouts on banks' market power and valuations. Berger and Roman (2015) find that TARP gave recipients competitive advantages and increased both their market shares and market power.⁶ Others find positive effects of TARP on banks' and bank insiders' valuations (e.g., Veronesi and Zingales, 2010; Kim and Stock, 2012; Liu, Kolari, Tippens, and Fraser, 2013; Akin, Coleman, Fons-Rosen, and Peydró, 2016; Ng, Vasvari, and Wittenberg-Moerman, 2016). While these papers find that TARP benefited the recipient banks, our paper suggests that these banks do not extract all the rents – their borrowers also received substantially better treatment.⁷

Finally, our paper adds to the broader literature on bank loan contracting. There are papers that

⁶ Koetter and Noth (2015) also find competitive distortions as a result of TARP for unsupported banks.

⁷ For completeness, we note that other TARP studies focus on determinants of TARP program entry and exit decisions (e.g., Bayazitova and Shivdasani, 2012; Duchin and Sosyura, 2012; Wilson and Wu, 2012; Cornett, Li, and Tehranian, 2013; Li, 2013; Duchin and Sosyura, 2014). Other related literature looks at the effects of other government interventions on bank risk-taking, lending, and liquidity creation using data from both the U.S. and other countries (e.g., Brandao-Marques, Correa, and Sapriza, 2012; Dam and Koetter, 2012; Hryckiewicz, 2012; Berger, Bouwman, Kick, and Schaeck, 2016; Calderon and Schaeck, forthcoming), and finds either reductions or increases in risk-taking, and reductions in credit growth and liquidity creation.

focus on loan amounts,⁸ spreads,⁹ loan maturity,¹⁰ collateral,¹¹ and loan covenants.¹² Most papers focus on one or a few loan contract terms, whereas we investigate all five.¹³ As well, none of this literature investigates how loan contract terms are affected by bank bailouts, the focus of this study.

2. Main Hypotheses

It is unclear *ex ante* whether bank bailouts benefit borrowers. There are a number of channels through which bailouts may either improve or worsen the treatment of borrowers:

- **Channels predicting more favorable treatment of borrowers in loan contract terms:** Recipient banks may use the capital infusions to compete more aggressively, offering more favorable credit terms (predation channel). Recipient banks may be also perceived as riskier, requiring them to offer borrowers more favorable terms to compensate for the risk that future credit and other services may be withdrawn (stigma channel). Finally, bailout funds may be relatively cheap, resulting in recipient banks offering more favorable credit terms because of lower marginal funding costs (cost advantage channel).
- **Channels predicting less favorable treatment of borrowers in loan contract terms:** The extra

⁸ Papers focusing on loan amounts include Sufi (2007), Ivashina and Scharfstein (2010a,b), and Bharath, Dahiya, Saunders, and Srinivasan (2011).

⁹ Papers focusing on loan spreads include Barry and Brown (1984), Petersen and Rajan (1994), Berger and Udell (1995), Blackwell, Noland, and Winters (1998), Berlin and Mester (1999), Pittman and Fortin (2004), Mazumdar and Sengupta (2005), Ivashina, (2009), and Berger, Makaew, and Turk-Ariss (2016).

¹⁰ Papers focusing on loan maturity include Flannery (1986), Diamond (1991), Barclay and Smith (1995), Rajan and Winton (1995), Guedes and Opler (1996), Stohs and Mauer (1996), Scherr and Hulburt (2001), Berger, Espinosa-Vega, Frame, and Miller (2005), and Ortiz-Molina and Penas (2008).

¹¹ Papers focusing on loan collateral are Bester (1985), Chan and Kanatas (1985) Stultz and Johnson (1985), Besanko and Thakor (1987), Berger and Udell (1990,1995), Boot, Thakor, and Udell (1991), Rajan and Winton (1995), Jimenez, Salas, and Saurina (2006), and Berger, Frame, and Ioannidou (2011).

¹² Papers focusing on loan covenants and covenant violation include Smith and Warner (1979), Beneish and Press (1993), Chen and Wei (1993), Smith (1993), Sweeney (1994), Beneish and Press (1995), Chava and Roberts (2008), Nini, Smith, and Sufi (2009), Roberts and Sufi (2009a), Sufi (2009), Murfin (2012), Freudenberg, Imbierowicz, Saunders, and Steffen (2013), and Bradley and Roberts (2015).

¹³ A few papers examine the impact of various factors on more than one loan contract term. These include Berger and Udell (1995), Strahan (1999), Benmelech, Garmaise, and Moskowitz (2005), Qian and Strahan (2007), Bharath, Sunder, and Sunder (2008), Graham, Li, and Qui (2008), Bae and Goyal (2009), Chava, Livdan, and Purnanandam (2009), Bharath, Dahiya, Saunders, and Srinivasan (2011), Hasan, Hoi, and Zhang (2014), and Chakraborty, Goldstein, and MacKinlay (2016).

capital from the bailout may increase charter value and/or allow for a “quiet life,” decreasing incentives to compete more aggressively, resulting in less favorable credit terms (charter value / quiet life channel). Recipient banks may also be perceived as safer due to bailouts. For TARP in particular, the recipient banks may be viewed as safer due to selection criteria targeting “healthy, viable institutions.” Borrowers may accept less favorable contract terms because recipient banks are less likely to fail or become financially distressed (safety channel). Finally, bailout funds may be relatively expensive, resulting in banks offering less favorable credit terms due to higher marginal funding costs (cost disadvantage channel).¹⁴

These channels imply two opposing hypotheses for the effects of bailouts on contract terms to recipient banks’ borrowers:

H1a: Bailouts result in more favorable loan terms for the borrowers of recipient banks.

H1b: Bailouts result in less favorable loan terms for the borrowers of recipient banks.

The hypotheses are not mutually exclusive – each may apply to different sets of banks and borrowers. We test which of these hypotheses empirically dominates the other overall by examining the net impact of bailouts on the five loan contract terms. We also test ancillary hypotheses about cross-sectional differences across various types of borrowers – safer versus riskier borrowers, more or less financial constrained, and relationship versus non-relationship borrowers –in Section 6 below.

3. Data and Methodology

3.1 Data and Sample

We use Loan Pricing Corporation’s (LPC’s) DealScan dataset on corporate loans, which has detailed information on deal characteristics for corporate and middle market commercial loans.¹⁵ We match

¹⁴ The safety channel is the opposite of the stigma channel and the cost disadvantage channel is the opposite of the cost advantage channel, so they never hold for the same bank at the same time. The predation and charter value/quiet life channels may also be regarded as opposites because they have opposing implications.

¹⁵ Although lenders in this dataset include non-bank financial intermediaries, such as hedge funds, we focus on regulated commercial banks operating in the U.S. market as this will enable us to control for the financial condition of lenders using Call Report data throughout our analysis. Commercial banks dominate the syndicated loan market in the U.S.

these data with Call Report information for commercial banks, TARP transactions data and recipients list from the Treasury’s website, and borrower data from Compustat.

The unit of analysis is a loan, referred to as a facility or tranche in DealScan. Loans are grouped into deals, so a deal may have one or more loans. While each loan has only one borrower, loans can have multiple lenders due to syndication, in which case a group of banks and/or other financial institutions make a loan jointly to a borrower. DealScan reports the roles of lenders in each facility. We consider only the lead lenders, since these are typically the banks making the loan decisions and setting the contract terms (Bharath, Dahiya, Saunders, and Srinivasan, 2009).¹⁶ We follow Ivashina (2009) to identify the lead bank of a facility. If a lender is denoted as the “administrative agent,” it is defined as the lead bank. If no lender is denoted as the “administrative agent,” we define a lender who is denoted as the “agent,” “arranger,” “book-runner,” “lead arranger,” “lead bank,” or “lead manager” as the lead bank. In the case of multiple lead banks, we keep the one with the largest assets.¹⁷

For each DealScan lender, we manually match the name to the Call Report data using lender name, location, and dates of operation for the period 2005:Q1 to 2012:Q4 using the National Information Center (NIC) website. Call Report data contains balance sheet information for all U.S. commercial banks. Given that most TARP recipients are bank holding companies (BHCs), we aggregate Call Report data of all the banks in each BHC at the holding company level. If the commercial bank is independent, we keep the data for the commercial bank. For convenience, we use the term “bank” or “lender” to mean either type of entity. We exclude firm-quarter Call Report observations data that do not refer to commercial banks (RSSD9331 different from 1), or have missing or incomplete financial data for total assets and common equity. To avoid distortions for the Equity to GTA ratio, for all observations with equity less than 1% of gross total assets (GTA), we replace equity with 1% of GTA (as in Berger and Bouwman, 2013).¹⁸ We normalize all

¹⁶ In all our results, we focus on the lead lender. In unreported results, we find that benefits in loan terms are pertinent for lenders with both low and high lender shares, with slightly better improvements when the lender has a higher share.

¹⁷ Our main results are robust to keeping all lead banks in the sample.

¹⁸ Gross total assets (GTA) equals total assets plus the allowance for loan and lease losses and the allocated transfer risk reserve (a reserve for certain foreign loans). Total assets on Call Reports deduct these two reserves, which are held to cover potential credit losses. We add these reserves back to measure the full value of the assets financed.

financial variables using the seasonally adjusted GDP deflator to be in real 2012:Q4 dollars. Bank characteristics are obtained from the Call Report as of the quarter immediately prior to the deal activation date.

The TARP bailout transactions data for the period October 2008 to December 2009 (when TARP money was distributed) and TARP recipients list are obtained from the Treasury's website.¹⁹ We match by name and location the institutions in the list with their corresponding RSSD9001 (Call Report ID). The TARP report has 756 transactions included for 709 unique institutions (572 BHCs, 87 commercial banks, and 51 Savings and Loans (S&Ls) and other thrifts), since some institutions have multiple transactions – some received more than one TARP capital purchase and some made one or more repayments.²⁰ We exclude thrifts because datasets are not comparable with banks and these institutions compete in different ways than commercial banks.

We match DealScan to Compustat to obtain borrower financial information. Compustat contains accounting information on publicly traded and OTC U.S. companies. For each facility in DealScan during our sample window (2005Q1- 2012Q4), we match the borrowers to Compustat via the GVKEY identifier using the link file of Chava and Roberts (2008) updated up to August 2012 to obtain borrower information. We also extract the primary SIC code for the borrowers from Compustat and exclude all loans to financial services firms (SIC codes between 6000 and 6999) and to non-U.S. firms as in Bharath, Dahiya, Saunders, and Srinivasan (2009). Borrower characteristics are obtained from Compustat as of the fiscal quarter ending immediately prior to the deal activation date.

We use data from several other sources for additional control variables and instruments: FDIC Summary of Deposits, House of Representatives website, Missouri Census Data Center, and the Center for Responsible Politics. Our final regression sample contains 5,973 loan-firm-bank observations.

¹⁹ <http://www.treasury.gov/initiatives/financial-stability/Pages/default.aspx>

²⁰ A few special cases are resolved as follows: For Union First Market Bancshares Corporation (First Market Bank, FSB) located in Bowling Green, VA, we include the RSSD9001 of the branch of the commercial bank First Market Bank because this is the institution located in Bowling Green, VA. In two other cases where M&As occurred (the bank was acquired by another BHC according to the National Information Center (NIC)), and TARP money were received by the unconsolidated institution, we included the RSSD9001 of this unconsolidated institution.

3.2 Econometric Methodology

We use a difference-in-difference (DID) approach. A DID estimator is commonly used in the program evaluation literature (e.g., Meyer, 1995) to compare a treatment group to a control group before and after treatment. Recently, it has been used in the banking literature (e.g., Beck, Levine, and Levkov, 2010; Schaeck, Cihak, Maehler, and Stolz, 2012; Berger, Kick, and Schaeck, 2014; Duchin and Sosyura, 2014; Berger and Roman, 2015, forthcoming; Berger, Roman, and Sedunov, 2017; Gilje, forthcoming). In our case, the treated group consists of loans from banks that received TARP funds, and the control group has loans from other banks. The DID estimator accounts for omitted factors that affect treated and untreated groups alike.

The DID regression model has the following form for loan i to borrower j from bank b at time t :

$$Y_{i,j,b,t} = \beta_1 TARP\ Recipient_b + \beta_2 Post\ TARP_t \times TARP\ Recipient_b + \beta_3 Borrower\ Characteristics_{j,t-1} + \beta_4 Borrower\ Rating\ Dummies_{j,t-1} + \beta_5 Bank\ Characteristics_{b,t-1} + \beta_6 Loan\ Type\ Dummies_i + \beta_7 Industry\ Fixed\ Effects_j + \beta_8 Year\ Fixed\ Effects_t + \varepsilon_{i,j,b,t} \quad (1)$$

Y is one of the five loan contract terms: spread, amount, maturity, collateral, and covenant intensity index. *TARP Recipient* is a dummy equaling one if the bank was provided TARP capital support. *Post TARP* is a dummy equal to one in 2009-2012, the period after TARP started (following Duchin and Sosyura, 2014, but considering a longer period). *Post TARP* does not appear by itself on the right-hand side of the equation because it would be perfectly collinear with the time fixed effects. *Post TARP* \times *TARP Recipient* is the DID term and captures the effect of the treatment (TARP) after it is implemented. Positive coefficients on the DID terms in the loan amount and maturity equations or negative coefficients on the DID terms in the spread, collateral, and covenant intensity index would show favorable changes in loan contract terms for firms that received loans from TARP banks, and *vice versa*. We include also controls for the borrower, *Borrower Characteristics*, *Borrower Rating Dummies*, and *Industry Fixed Effects (2-digit SIC)*; *Bank Characteristics* (bank controls other than TARP); *Loan Type Dummies*; and *Year Fixed Effects*. ε represents an error term.

3.3 Variables and Summary Statistics

Table I shows variable descriptions and summary statistics for the full sample. We present means, medians, standard deviations, and 25th and 75th percentiles.

Main dependent variables

For dependent variables, we consider five loan contract terms. *Loan Spread* is the loan spread or All-in-Spread-Drawn (in bps), the interest rate spread over LIBOR plus one-time fees on the drawn portion of the loan.²¹ *Log (Loan Amount)* is the natural log of the loan amount. *Log (Loan Maturity)* is the natural log of the maturity of the loan in months. *Collateral* is a dummy equal to one if the loan is secured. *Covenant Intensity Index* is the covenant intensity index. We follow Bradley and Roberts (2015) and track the total number of covenants included in the loan agreement and create a restrictiveness of the covenants index ranging from 0 to 6.²²

Main independent variables

As described above, our main TARP variables for the regression analysis are *TARP Recipient*, a dummy equal to one if the bank was provided TARP capital support, *Post TARP* is a dummy equal to one in 2009-2012, and *Post TARP* \times *TARP Recipient*, the DID term which captures the effect of the treatment (TARP) on the treated (TARP recipients) compared to the untreated (non-TARP banks) after treatment. As noted above, *Post TARP* is not included without the interaction term because it would be perfectly collinear with the time fixed effects. The table also shows *Log (1+Bailout Amount)*, which is used below as an alternative measure for TARP support.

²¹ For loans not based on LIBOR, DealScan converts the spread into LIBOR terms by adding or subtracting a differential which is adjusted periodically.

²² This is calculated as the sum of six covenant indicators (dividend restriction, asset sales sweep, equity issuance sweep, debt issuance sweep, collateral, and more than two financial covenants). The index consists primarily of covenants that restrict borrower actions or provide lenders' rights that are conditioned on adverse future events. Sweeps are prepayment covenants that mandate early retirement of the loan conditional on an event, such as a security issuance or asset sale. They can be equity, debt, and asset sweeps. Sweeps are stated as percentages, and correspond to the fraction of the loan that must be repaid in the event of a violation of the covenant. For example, a contract containing a 50% asset sweep implies that if the firm sells more than a certain dollar amount of its assets, it must repay 50% of the principal value of the loan. Asset sweeps are the most popular prepayment restriction.

Control variables

Turning to controls, we first account for borrower characteristics. We include *Borrower Size*, the log of book value of assets of the borrower as reported in Compustat; *Market-To-Book*, the market value of equity scaled by book value of equity; *Leverage*, the ratio of book value of total debt to book value of assets; *Cash Flow Volatility*, the standard deviation of the previous 12 quarterly cash flows, where cash flow is calculated as income before extraordinary items plus depreciation and amortization divided by total assets; *Profitability*, the ratio of Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) to Sales; *Tangibility*, the ratio of Net Property, Plant, and Equipment (NPPE) to Total Assets; *Cash Holdings Ratio*, the ratio of cash and marketable securities divided by total assets; and Borrower S&P Credit Rating dummies. For the latter variables, we use the long-term issuer credit ratings compiled by Standard & Poor's (S&P) and create dummies for each of the ratings and one category for the those unrated (AAA, AA, A, BBB, BB, B, CCC or below, Unrated). We also include borrower industry fixed effects based on 2-digit SIC codes (*Industry Fixed Effects*)²³ to control for any industry patterns in the loan contracts to borrowers.

We next control for bank characteristics, including proxies for CAMELS (financial criteria used by regulators for evaluating banks) following Duchin and Sosyura (2014): *Capital Adequacy* (ratio of equity capital to GTA); *ASSET QUALITY* (fraction of nonperforming loans to total loans); *Management Quality* (the ratio of overhead expenses to GTA), *Earnings* (return on assets (ROA), ratio of the annualized net income to GTA); *Liquidity* (ratio of cash to total deposits); *Sensitivity To Market Risk* (the ratio of the absolute difference (gap) between short-term assets and short-term liabilities to GTA). We also include other bank characteristics following Bayazitova and Shivdasani (2012), Berger and Bouwman (2013), Duchin and Sosyura (2014), Berger, Bouwman, Kick and Schaeck (2016), Berger and Roman (2015, forthcoming), Berger, Roman, and Sedunov, 2017): *Bank Size*, log of gross total assets (GTA); *HHI*

²³ In Section 5.6, concerning additional robustness tests, we also show results using 2-digit NAICS codes and Fama-French 49 industries. In unreported results, we also tried 3-digit SIC, 3-digit NAICS codes, and Fama-French 12 industries and results are robust to all these alternative industry fixed effects.

Deposits, local deposit concentration; *Percent Metropolitan*, percent of bank deposits in metropolitan areas (Metropolitan Statistical Areas (MSAs) or New England County Metropolitan Areas (NECMAs)); *Fee Income*, ratio of non-interest income to total income; *Diversification*, measure of diversification across sources of income, $1 - |(\text{Net Interest Income} - \text{Other Operating Income})/(\text{Total Operating Income})|$ following Laeven and Levine (2007); and *DWTAF*, dummy if a bank received Discount Window (DW) and/or Term Auction Facility (TAF) funding during the crisis.²⁴

We also include *Loan Type Dummies* for each of the categories, term loans, revolvers, and other loans, to control for any patterns in loan types. *Term Loans* is a dummy equal to one if the loan type in LPC DealScan is any of the following: Term Loan, Term Loan A, Term Loan B, Term Loan C, Term Loan D, Term Loan E, Term Loan F, Term Loan G, Term Loan H, Term Loan I, or Delay Draw Term Loan. *Revolvers* is a dummy equal to one if the loan type in DealScan is any of the following two categories: Revolver/Line < 1 Yr or Revolver/Line \geq 1 Yr. We also create a dummy *Other Loans* for other loan types that do not fit in the first two categories. Finally, we include *Year Fixed Effects* to control for temporal patterns in the loan contracts.

4. Main Results

Table II shows our main results for the estimations of equation (1). We find that TARP led to more favorable loan contract terms in all five dimensions analyzed (Columns 1-5). Conditional on borrower characteristics, borrower rating dummies, bank characteristics, loan type, and time, we find that recipient banks tended to grant loans with lower spreads, larger amounts, longer maturities, less frequency of collateral, and less restrictive covenants, and all are statistically significant.

These results are also economically significant. The coefficient on the DID term of -41.974 in the loan spread equation suggests that TARP results in a decrease in the loan spread by about 42 basis points.²⁵

²⁴ Berger, Black, Bouwman, and Dlugosz (forthcoming) find that banks that received discount window and TAF funds increased their lending.

²⁵ Researchers often include other loan contract terms in the loan spread regression model on the assumption that loan spreads are set last. Our loan spread results are robust to including these other loan terms in the regression. However,

The DID term of 0.257 in the loan amount equation implies an increase in loan amount by approximately one-quarter from TARP. The DID term of 0.149 in the maturity equation suggests an increase in the loan maturity by almost one-fifth from TARP. The DID term of -0.083 in the collateral equation suggests that TARP decreased the likelihood of collateral by about 8 percentage points. The DID term of -0.535 in the covenant intensity equation suggests that TARP results in a decrease in the intensity of the covenant index on the loan by about one-fourth from its mean of 2.079. Thus, TARP results in statistically and economically significant improvements in all five loan contract terms, consistent with the empirical dominance of Hypothesis H1a over H1b.

Turning to the roles of borrower characteristics on loan contract terms, *Borrower Size* is positively related to loan amount and maturity and negatively related to loan spread, collateral, and covenant intensity. As expected, larger borrowers tend to receive more favorable loan contract terms. Borrower *Market-To-Book* generally does not significantly affect loan contract terms. Four of the five coefficients are statistically insignificant, and the coefficient on loan amount is statistically significant but very small. Borrower *Leverage* makes all of the loan contract terms less favorable for the borrowers, consistent with expectations that more highly leveraged borrowers are riskier. As expected, borrower *Profitability* favorably affects loan contract terms. Borrower *Tangibility* is not always significant, but has negative effects on collateral and covenant intensity terms, consistent with the idea that tangible assets can reduce opacity problems, may be used as collateral, and may enable firms to be profitable and generate cash.²⁶ Borrower *Cash Flow Volatility* is mostly insignificant, but has a small positive impact on the loan amount. Higher borrower *Cash Holdings Ratio* yields mostly unfavorable contract terms – reduced loan amount and maturity and increased loan spread and collateral. Riskier borrowers hold more cash due to the precautionary motive (they are less sure of future financing), so those with higher cash ratios receive less favorable loan contract terms.

we prefer to exclude these other potentially endogenous loan contract terms from the main model. Similar controls would not be appropriate for the other contract terms as it is not reasonable to assume that they are set last.

²⁶ Himmelberg and Morgan (1995) find that tangible assets reduce firm opaqueness and thereby increase a firm's access to external capital. Strahan (1999) finds that firms with less tangible assets can face more restrictive loan contracts.

Finally, the seven dummies for borrower ratings (*Borrower Rating Dummies*) are included in all the regressions, but are not reported in the tables for the purpose of brevity. Not surprisingly, the better-rated borrowers receive substantially better loan contract terms.

5. Robustness Checks

In this section, we provide a number of robustness tests. Unless noted otherwise, we include all control variables from the main regressions, but they are not shown for brevity.

5.1 Instrumental Variable (IV) Analysis

We first address the potential endogeneity of our *TARP Recipient* variables, which could bias our findings. For example, TARP capital might be more often provided to the strongest banks, which may be more likely to provide favorable terms to borrowers, yielding a spurious relationship. To deal with this, we employ an instrumental variable (IV) analysis following Li (2013), Duchin and Sosyura (2014), Berger and Roman (2015, forthcoming), and Berger, Roman, and Sedunov (2017).

This research on TARP finds that a bank's political connections can affect the bank's probability of receiving TARP funds. We therefore use *Subcommittees on Financial Institutions or Capital Markets* as an instrument for *TARP Recipient*. This instrument is a dummy which takes a value of 1 if a firm is headquartered in a district of a House member who served on the Financial Institutions Subcommittee or the Capital Markets Subcommittee of the House Financial Services Committee in 2008 or 2009.²⁷ These subcommittees played a direct role in the development of the Emergency Economic Stabilization Act (EESA) and were charged with preparing voting recommendations for Congress on authorizing and expanding TARP. Members of these subcommittees were shown to arrange meetings with the banks, write letters to regulators, and write provisions into EESA to help particular firms. While these arguments indicate

²⁷ We use the MABLE/Geocorr2k software on the Missouri Census Data Center website to match banks with congressional districts using the zip codes of their headquarters. The final regression sample for this test is slightly smaller than the main regression sample. This is due to some of the banks not being able to be mapped into a congressional district (either due to an invalid headquarters zip code or because we could not match it to a congressional district), a problem reported also by Li (2013).

that *Subcommittees on Financial Institutions or Capital Markets* should be positively related to TARP decisions, the distribution of committee assignments are determined by the House leadership, which is unlikely to be under the control of individual banks.

Because the potentially endogenous explanatory variable is binary, we employ a dummy endogenous variable model and follow a three-step approach as suggested in section 18.4.1 of Wooldridge (2002). For the first stage, we use a probit model in which we regress *TARP Recipient* on the instrument and the control variables from the main regression model.²⁸ We then use the predicted probability obtained from the first stage as an instrument for the second stage. We instrument *TARP Recipient* variable by the *TARP Recipient* fitted value and *Post TARP* \times *TARP Recipient* by the product of the *Post TARP* dummy and the *TARP Recipient* dummy fitted value.²⁹

The IV results are reported in Table III. We report the first-stage regression results in Panel A Column 1, and the final-stage results in Panel B. The first-stage results indicate that the instrumental variable is positively related to TARP injections, and the *F*-test indicates that the instrument is valid ($F = 149.572$ with a *p*-value less than 0.001). The final stage results in Panel B show that after controlling for endogeneity, all five of the loan contract terms retain the same sign, albeit at a lower significance level in some cases. Thus, the main results that TARP generally leads to more favorable terms of credit are robust.

5.2 Heckman's (1979) Two-Stage Selection Model

To address potential selection bias, we use Heckman's (1979) two-step procedure. This approach controls for selection bias introduced by bank, borrower, and government choices about TARP by incorporating TARP decisions into the econometric estimation. In the first step, we use the same probit model from the IV estimation to predict *TARP Recipient*. In the second stage, the loan contract terms are the dependent variables, and the right-hand-side variables include the self-selection parameter (inverse

²⁸ In unreported tests, we also tried excluding SIC fixed effects from the probit estimation to mitigate potential incidental parameters and inconsistency concerns, as recommended in Greene (2002) and Fernandez-Val (2009), and results are robust to this alternative specification

²⁹ As indicated in Wooldridge (2002, p. 236-237), this method is not the same as the forbidden regression, as we use the obtained variables as instruments in the next step and not as regressors.

Mills ratio) estimated from the first stage.

The second-stage results are reported in Table III Panel C. The results again suggest that TARP is associated with improvements in all the loan contract terms, consistent with our main findings.

5.3 Placebo Experiment and Other DID Checks

As mentioned in Roberts and Whited (2013), the key assumption behind the DID estimator, the parallel trends assumption, is untestable. However, several researchers, including Angrist and Krueger (1999) and Roberts and Whited (2013), propose performing a falsification sensitivity test to alleviate concerns that alternative forces may drive the effects documented. We follow their advice and conduct a placebo experiment. We follow Puddu and Walchli (2013) and Berger and Roman (2015, forthcoming) and fictionally assume that the TARP participation took place earlier, while still distinguishing between banks that received TARP and those that did not according to the “true” TARP program. Specifically, we use an eight-year period immediately preceding the TARP program from 2001-2008, and assume that the fictional Post TARP period begins four years before the actual program. We rerun the regressions using the placebo sample (2001-2008) and define *Placebo Post TARP* as a dummy equal to one in 2005-2008, the period after the fictional TARP program initiation. If our main results reflect the true program, we should not find statistically significant results with the same sign for the DID terms.

The placebo results reported in Table IV Panel A confirm that indeed there are no statistically significant results for the fictional TRAP with the same sign as the main results for four of the five loan contract terms for the fictional TARP. For amount, collateral, and covenant intensity, the effect of the fictional TARP program is insignificantly different from zero, while for spread the effect is reversed and only marginally statistically significant. The effect also is only marginally statistically significant for maturity. Thus, the placebo experiment generally suggests that our main results do not appear to be driven by alternative forces.

Second, as described in Angrist and Pischke (2008), DID methodologies rely on comparisons in levels, while necessitating the counterfactual trend behavior of treatment and control groups to be the same.

To ensure that differential pre-trends in contract terms in the TARP and non-TARP groups are controlled for in the DID estimation, we follow Chava, Oettl, Subramanian, and Subramanian (2013) and run specifications that control for bank-specific time trends in our regressions in addition to bank fixed effects and year fixed effects that control for other unmeasured idiosyncratic effects across banks and time. These tests are reported in Table IV Panel B and show that our main results that TARP is associated with improvements in loan contract terms are qualitatively similar to our main findings.

5.4 Alternative Measure of TARP

We next test robustness to the use of an alternative measure of TARP. In Table V, we replace the *TARP Recipient* dummy with an alternative measure of TARP infusion: $\text{Log}(1 + \text{Bailout Amount})$. Our main results continue to hold: all five of the loan contract terms have statistically significant coefficients suggesting more favorable treatment to business borrowers associated with TARP.

5.5 Alternative Econometric Models

To help alleviate the concern that omitted unobserved bank-specific, year-specific, industry-specific, or local market-specific determinants might explain our results, Table VI Panels A-C examine alternative econometric methods using various combinations of bank, year, borrower industry, and borrower state fixed effects. In Panels A and B, when bank fixed effects are included, we drop the uninteracted TARP dummy, which would be perfectly collinear with the bank fixed effects. We also use White standard errors which are robust to within-cluster correlation at the borrower and bank level in Panels D-F. In addition, we exclude various other bank control variables and borrower characteristics in Panels G-I.³⁰ We use alternative industry fixed effects specifications (2-digit NAICS codes and Fama-French 48 industries) in Panels J-K. We use alternative functional forms for collateral in Panel L. The results show consistently more favorable treatment to borrowers by the TARP banks.³¹

³⁰ This exercise addresses the concern that some bank characteristics might be endogenously driven by TARP.

³¹ We also consider whether this question could also be addressed using a model with borrower fixed effects. However, the use of borrower fixed effects is not feasible in our context because too few borrowers in our sample (<5%) have loans from both TARP and non-TARP banks. In addition, the use of borrower fixed effects is subject to sample selection issues because it essentially excludes all borrowers without multiple loans.

5.6 Additional Robustness Tests

Table VII contains additional robustness checks in which we exclude borrowers with missing S&P credit ratings in Panel A, or borrowers with only one loan in Panel B. These results show consistently statistically significantly more favorable credit terms treatment to business borrowers by the TARP banks.

In Panel C, we exclude foreign-owned banks to mitigate the concern that our effects may be influenced by these banks. Some research shows that many foreign banks increased their market share in the period leading up to the financial crisis (e.g., Claessens and Van Horen, 2014; Berlin, 2015), but they drew back from U.S. lending during the financial crisis, consistent home bias (e.g., Giannetti and Laeven, 2012). Our results excluding foreign banks continue to show qualitatively similar effects to our main findings.

In Panel D, we examine the timing of the effects of TARP on loan contract terms to borrowers. We replace our DID term, $Post\ TARP \times TARP\ Recipient$, with a series of DID terms, interacting the $TARP\ Recipient$ with each of the $Post\ TARP$ years (2009, 2010, 2011, and 2012) to trace out the timing of the effects of TARP. The results show that the loan contract term improvements are fairly strong throughout the post-TARP period, although they trail off somewhat for collateral in the last two years.

In Panel E, we examine effects of TARP on loan contract terms for involuntary and voluntary TARP participants. Some banks were required to participate in TARP: Citigroup, JP Morgan, Wells Fargo, Morgan Stanley, Goldman Sachs, Bank of New York, Bank of America, and State Street Bank.³² We specify variables for the TARP involuntary and voluntary banks and interact these variables with our $Post\ TARP$ dummy. We find more favorable loan contract terms for borrowers from both involuntary and voluntary participants.

In Panel F, we examine effects of TARP on loan contract terms for TARP participants subject to the U.S. bank Stress Tests (aka the Supervisory Capital Assessment program (SCAP) and the Comprehensive Capital Analysis and Review (CCAR) programs) and participants not subject to these tests.

³² We exclude Merrill Lynch from the involuntary recipients because it is not a bank.

These tests were applied to 19 banking organizations with assets exceeding \$100 billion to ensure these large banking organizations had enough capital to withstand the recession and a hypothetical more adverse scenario that might occur over the rest of the financial crisis.³³ We find more favorable loan contract terms for borrowers from both types of participants.

6. Ancillary Hypotheses

We next develop hypotheses to understand which types of borrowers benefit more from bailouts – safer or riskier, more or less financially constrained, and relationship or non-relationship.

First, we examine whether the changes in the credit terms from bank bailouts are more or less favorable for safer or riskier borrowers. We offer two channels with opposing predictions.

- **Increased moral hazard channel:** Bailouts increase the perceived probability of future bailouts for recipient banks, increasing their moral hazard incentives to take on excessive risk, tilting their preferences toward riskier borrowers that yield higher expected returns, resulting in more improved contract terms for riskier than safer borrowers.
- **Decreased moral hazard channel:** Bailouts reduce the moral hazard incentives of the recipient banks to take on excessive risk because of the increases in the capital of the recipient banks or because of extra explicit or implicit government restrictions on these institutions, tilting their preference toward safer borrowers, resulting in more improved contract terms for safer than riskier borrowers.³⁴

We compare the net impact of bank bailouts on changes in loan contract terms between riskier and safer borrowers using the following set of opposing hypotheses:

H2a: Bailouts result in greater improvements in loan terms for riskier borrowers relative to the safer borrowers of recipient banks.

³³ These were 19 banks, including Bank of America, Citigroup, Goldman Sachs, JP Morgan Chase, Morgan Stanley, Wells Fargo, Bank of NY Mellon, BB&T, Fifth Third Bancorp, Keycorp, PNC Financial, Regions Financial, SunTrust Banks, US Bancorp, Ally Financial, American Express Company, Capital One Financial, Metlife, and State Street.

³⁴ The decreased moral hazard channel is the opposite of the increased moral hazard channel, so they never both hold for the same bank at the same time.

H2b: Bailouts result in greater improvements for safer borrowers relative to the riskier borrowers of recipient banks.

Next, we examine whether the changes in the credit terms as a result of bank bailouts for small and unlisted borrowers that are more financially constrained because of informationally opacity problems are more or less favorable relative to the treatment for large and listed borrowers, respectively, that are more transparent. We offer two channels with opposing predictions that are based on the finding discussed above that TARP appears to have increased the market power of its recipients:

- **Increased relative credit supply to financially constrained borrowers channel:** Bailouts increase the market power of recipient banks more relative to small and unlisted financially constrained borrowers with few financial alternatives than to large and listed borrowers, respectively. The increased market power incentivizes the bailed-out banks to offer more improved terms of credit to the financially constrained borrowers and make up for any short-term losses with higher future profits from future loans (e.g., Petersen and Rajan, 1995). That is, banks may temporarily subsidize borrowers have fewer outside options that are more likely to borrow from these banks in subsequent periods.
- **Reduced relative credit supply to financially constrained borrowers channel:** The lesser increase in relative market power to large and listed borrowers results in bailed-out banks improving contract terms more for these borrowers, respectively, to attract them away from alternative lenders.

We compare the net impact of bank bailouts on changes in loan contract terms for small and unlisted borrowers relative to large and listed borrowers, respectively, using the following opposing hypotheses:

H3a: Bailouts result in greater improvements in loan terms for small and unlisted borrowers relative to large and listed borrowers of recipient banks, respectively.

H3b: Bailouts result in greater improvements for large and listed borrowers relative to small and unlisted borrowers of recipient banks, respectively.

Finally, we examine whether the changes in the credit terms for relationship borrowers as a result

of bank bailouts are more or less favorable relative to the treatment for non-relationship borrowers. We offer two channels with opposing predictions.

- **Relationship borrowers' preservation channel**: Bailout recipients may improve contract terms relatively more for relationship borrowers than non-relationship borrowers to help preserve or enhance the relationships, enabling the banks to earn more in the long run from continuing business.
- **Non-relationship borrowers' attraction channel**: Bailout recipient banks may improve loan contract terms relatively more for non-relationship borrowers, as these borrowers do not have a recent history with the bank, and may require better terms to attract them.

Based on these channels, we compare the net impact of bank bailouts on changes in loan contract terms for relationship and non-relationship borrowers in our next set of opposing hypotheses:

H4a: Bank bailouts result in greater improvements in loan terms for relationship borrowers relative to non-relationship borrowers of recipient banks.

H4b: Bank bailouts result in greater improvements in loan terms for non-relationship borrowers relative to relationship borrowers of recipient banks.

7. Ancillary Results

7.1 Borrower Risk

7.1.1 Borrower S&P Credit Rating

To test hypotheses H2a and H2b on whether improvements in loan contract terms are greater for riskier or safer borrowers, respectively, we first use borrower S&P credit ratings to proxy for borrower risk. We group borrowers according to whether they have investment grade ratings (BBB or higher) versus speculative or junk ratings (BB or lower rated), and estimate the model for each of the subsamples.³⁵

Table VIII Panel A1 shows the regression estimates, and Panel A2 reports the tests of equality between the two borrower groups. The results suggest that high-risk borrowers experienced more favorable loan contract terms as a result of TARP as indicated by the DID term coefficients, consistent with the

³⁵ We exclude unrated borrowers because their risks are unknown.

empirical dominance of the Hypothesis H2a over H2b. The DID coefficients of all five loan contract terms are only significant for the riskier borrowers. The differences between the two groups are statistically and economically significant for *Log (Loan Maturity)*, *Collateral*, and *Covenant Intensity Index*.

7.1.2 Borrower Leverage

Similarly, we test hypotheses H2a and H2b using borrower leverage. We group borrowers according to whether they have low leverage ratio ($Leverage \leq \text{median}$) or high leverage ratio ($LEVERAGE > \text{median}$) and estimate the main DID regressions for each subsample.

Table VIII Panel B1 shows the regression results, and Panel B2 reports the tests of equality between the two types of borrower groups. We find that both groups of borrowers generally experience more favorable contract terms as a result of TARP, but terms are in most cases more favorable to high-risk borrowers, again consistent with the empirical dominance of the Hypothesis H2a over H2b. This is especially important for the effects on *Collateral* and *Covenant Intensity Index*, where DID terms are only statistically significant for the riskier borrowers, and the differences are statistically and economically significant. These results are generally consistent with increased exploitation of moral hazard.

7.1.3 Borrower Cash Flow Volatility

Finally, we test hypotheses H2a and H2b using borrower cash flow volatility as a proxy for risk. We group borrowers according to whether they have low cash flow volatility ($Cash\ Flow\ Volatility \leq \text{median}$) or high cash flow volatility ($Cash\ Flow\ Volatility > \text{median}$) and estimate the main DID regressions using each subsample.

The regression results and equality tests are shown in Table VIII Panel C1 and Panel C2, respectively. For the risky borrowers, the DID coefficients of all five loan contract terms are significant, but for the safer borrowers, only the DID coefficient for *Log (Loan Amount)* is significant.

7.2 Borrower Financial Constraints

7.2.1 Borrower Size

To test hypotheses H3a and H3b on whether the improvements in loan contract terms are greater

for more financially-constrained borrowers, we first use borrower size as a proxy for financial constraints, following Hadlock and Pierce (2010). Smaller borrowers also tend to be more informationally opaque and have access to fewer sources of finance, so they are more bank dependent than large borrowers. We group borrowers according to whether they are large (*Borrower Size* > median) or small (*Borrower Size* ≤ median), and estimate the DID regressions using each of the subsamples.³⁶

Regression estimates and tests of equality are shown in Table IX Panels A1 and A2, respectively. The results suggest that larger borrowers experienced more favorable loan contract terms as a result of TARP, consistent with the empirical dominance of the Hypothesis H3b over H3a. This is especially important for the effects on *Loan Spread*, *Log (Loan Amount)*, and *Covenant Intensity Index*, where DID terms are only statistically significant for the larger borrowers. The difference in *Loan Spread* between the two groups is a statistically and economically significant 52.321 basis points.

7.2.2. Borrower Public Status

We also test hypotheses H3a and H3b using borrower listing status. Publicly listed borrowers are generally more transparent and have better access to other external sources of finance. We compare the net impact of TARP on changes in loan contract terms for public versus private borrowers based on the borrower's listing status in the DealScan dataset.³⁷

Table IX Panel B1 shows the regression results, and Panel B2 reports the tests of equality. The results suggest that public borrowers experienced more favorable loan contract terms as a result of TARP: the DID coefficients of all five loan contract terms are only significant for the public borrowers. Overall, our results indicate that less-financially-constrained borrowers benefit more from the bailout.

7.3 Relationship Lending

We next explore whether relationship borrowers benefited more or less relative to non-relationship

³⁶ In unreported tests, we also perform tests using the borrower total sales instead of total assets to proxy borrower size and obtain consistent results.

³⁷ In unreported results, we also perform tests using Compustat to split borrowers into public and private, where a private firm would have an exchange code of 0, 1, 19, or 20, and results are consistent.

borrowers, i.e., which of the two hypotheses H4a and H4b, respectively, empirically dominates.

We group borrowers according to whether they had a relationship with a TARP bank in the pre-TARP period (2005:Q1-2008:Q4). Relationship is defined as a dummy indicating the same borrower and lead bank were involved in at least one loan over the pre-TARP period.

Regression estimates are shown in Table X Panel A1, and Panel A2 reports the tests of equality. The estimated DID coefficients for the two groups of borrowers suggest that the change in contract terms is beneficial for both relationship and non-relationship borrowers for the first three contract terms. However, the favorable effects on collateral and covenant intensity are only significant for the non-relationship borrowers. These findings suggest that TARP banks used bailout funds to reach out to new borrowers as well as grant more favorable terms to existing clients, with slightly better terms for the non-relationship borrowers. The findings also imply that TARP studies that focus on borrowers with prior relationship with TARP banks may overlook some benefits of the program.

7.4 Additional Subsample Tests

In Internet Appendix Y, we conduct several additional subsample analyses to determine which borrowers received benefits from the TARP program. The data suggest that a broad spectrum of borrowers experienced more favorable loan credit terms from TARP recipients: borrowers using term loans and revolvers, and borrowers from both relatively concentrated and unconcentrated industries. Thus, the data suggest that the benefits to business borrowers were widespread.

7.5 Effects of TARP on Credit Supply at the Extensive Margin

Finally, we also examine how TARP affects credit supply at the *extensive margin* by focusing on credit availability to borrowers with which they had pre-TARP period relationships. Following the approach of De Haas and Van Horen (2013) and Berger, Makaew, and Turk-Ariss (2016), we estimate the probability that a pre-TARP period lender will continue to grant loans to its pre-TARP period borrowers during the post-TARP period:

$$\begin{aligned}
\text{Prob}(\text{Loan Post-TARP} | \text{Loan Pre-TARP})_{i,j} = & a_1 \text{TARP Recipient}_i + A_2 \text{Average Borrower Characteristics}_j + \\
& A_3 \text{Average Borrower Ratings}_j + A_4 \text{Average Bank Characteristics}_i + \quad (2) \\
& A_5 \text{Industry Fixed Effects}_j + e^a_{i,j}.
\end{aligned}$$

The dependent variable here is the probability that, for each pre-TARP period loan granted by bank i to borrower j , there will be at least one loan with the same bank-borrower pair during the post-TARP period. In other words, our sample for this specification contains all loans during the pre-TARP period (2005-2008). The *Loan Post-TARP* dummy takes the value one if the lender i also decides to lend to the borrower j during the post-TARP period (2009-2012). The key explanatory variable is the *TARP Recipient* dummy. We include the same borrower and bank characteristics as in our main analysis. Since this is a cross-sectional regression, borrower and bank characteristics as well as borrower rating dummies are calculated as the time-series averages during the pre-TARP period to avoid endogeneity concerns about the post-TARP period.

Table XI reports the results. Columns 1-4 show estimates using a probit model with or without various controls. Columns 5-8 report estimates using a logit model with or without various controls. Columns 9-12 report estimates using a linear probability model with or without various controls. All models suggest that borrowers that have pre-TARP period relationships with bailed-out banks are more likely to receive at least one additional loan during the TARP period than borrowers with pre-TARP period relationships with other banks. For example, when using a probit model in Columns 1-4, the coefficients on *TARP Recipient* are estimated at 0.880 in Column 1, 0.933 in Column 2, 0.785 in Column 3, and 0.627 in Column 4, all statistically significant at the 1% level. These results are also highly economically significant. They suggest an increase in the probability of TARP relationship borrowers being granted a loan in the post-TARP period of 88.0% in Column 1, 93.3% in Column 2, 78.5% in Column 3, and 62.7% in Column 4. Results are consistent using logit and linear probability models, Columns 5-8 and 9-12, respectively. These results complement our main analysis focused on credit supply at the *intensive margin* by showing that TARP also led to an increase in credit supply at the *extensive margin*.

8. Conclusions

Do bank bailouts result in net benefits or costs for their borrowers? We formulate and test hypotheses about the effects of these bailouts on loan contract terms to business borrowers – whether loan contract terms become more or less favorable for the borrowers of recipient banks (Hypotheses H1a and H1b); whether terms improve more for riskier or safer borrowers (Hypotheses H2a and H2b); whether terms improve more for more or less financially-constrained borrowers (Hypotheses H3a and H3b); and whether terms improved more for relationship or non-relationship borrowers (Hypotheses H4a and H4b). We use data from the U.S. TARP bailout during the recent financial crisis, and contribute to several important strands of research as discussed above.

We first find that TARP resulted in more favorable loan contract terms for recipient banks' business customers, consistent with the empirical dominance of H1a over H1b, and an increase in credit supply at the *intensive margin*. Conditional on borrower characteristics and ratings, bank characteristics, loan type, and industry and time fixed effects, we find that recipient banks tended to grant loans with lower spreads, larger amounts, longer maturities, less frequency of collateral, and less restrictive covenants. These findings are robust to dealing with potential endogeneity and other robustness checks, and suggest that borrowers significantly benefited from TARP.

Second, the improvement in loan contract terms due to TARP was more pronounced for riskier borrowers, consistent with an increase in the exploitation of moral hazard incentives and the empirical dominance of H2a over H2b. Borrowers with lower credit ratings, higher leverage, and higher cash flow volatility experienced significantly greater improvements in loan spread than other borrowers.

Third, the improvement in loan contract terms due to TARP was more pronounced for large and publicly-listed borrowers than for small and private borrowers, respectively, consistent with more benefits for less financially-constrained borrowers and the empirical dominance of H3b over H3a.

Fourth, we find that both relationship and non-relationship borrowers benefited from TARP. This finding suggests that TARP banks used bailout funds to reach out to new loan customers as well as to grant more favorable terms to existing clients.

Finally, in additional tests, we find that banks increased the probability of issuing loans during the post-TARP period to their pre-TARP period borrowers. This an increase in credit supply on the *extensive margin* in addition to an increase in credit supply on the *intensive margin*.

Our study adds to the research and policy debates on the benefits and costs of the bank bailouts in general, and TARP in particular. TARP benefits identified by existing research include the potential increase in lending (e.g., Li, 2013; Puddu and Walchli, 2013), potential decrease in bank risk (Berger, Roman, and Sedunov, 2017), increase in market value of bailed-out banks (e.g., Veronesi and Zingales, 2010), and improvement in local economic conditions (Berger and Roman, forthcoming). TARP costs include the potential decrease in lending (Lin, Liu, and Srinivasan, 2014), potential increase in bank risk (e.g., Black and Hazelwood, 2013), credit market distortion due to changes in competitive advantage of recipient banks (Berger and Roman, 2015; Koetter and Noth, 2015), and possible political influence over the distribution of funds (e.g., Duchin and Sosyura, 2012).³⁸ We add to this policy debate by showing benefits in terms of more favorable treatment of borrowers. However most of these benefits fall on riskier and less financially-constrained borrowers, suggesting that the social costs and benefits of TARP are more complex than previously documented and deserve further investigation.

³⁸ For more detailed discussions of TARP benefits and costs, see Calomiris and Khan (2015) and Berger and Roman (forthcoming).

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Table I: Definitions and Summary Statistics

This table reports definitions and summary statistics of the variables for the full sample. All variables using dollar amounts are expressed in real 2012:Q4 dollars using the implicit GDP price deflator.

Variable Definitions and Summary Statistics for the Full Sample (2005-2012)

Type	Variable	Definition	Mean	p50	Std	p25	p75	N
<i>Loan Contract Terms Variables (Source: LPC DealScan)</i>	<i>Loan Spread</i>	The loan spread is the all-in spread drawn in the DealScan database. All-in spread drawn is defined as the amount the borrower pays in basis points over LIBOR or LIBOR equivalent for each dollar drawn down. For loans not based on LIBOR, LPC converts the spread into LIBOR terms by adding or subtracting a differential which is adjusted periodically. This measure adds the borrowing spread of the loan over LIBOR with any annual fee paid to the bank group.	187.991	175.000	137.312	92.500	250.000	5,372
	<i>Log (Loan Amount)</i>	Natural log of the loan facility amount. Loan amount is measured in millions of dollars.	19.210	19.337	1.493	18.369	20.212	5,973
	<i>Log (Loan Maturity)</i>	Natural log of the loan maturity. Maturity is measured in months.	3.816	4.111	0.581	3.611	4.111	5,869
	<i>Collateral</i>	A dummy variable that equals one if the loan facility is secured by collateral and zero otherwise.	0.473	0.000	0.499	0.000	1.000	5,973
	<i>Covenant Intensity Index</i>	Bradley and Roberts (2015) covenant intensity index equal to the sum of six covenant indicators (collateral, dividend restriction, more than 2 financial covenants, asset sales sweep, equity issuance sweep, and debt issuance sweep). The index consists primarily of covenants that restrict borrower actions or provide lenders rights that are conditioned on adverse future events.	2.079	2.000	1.985	0.000	3.000	5,973
<i>TARP Variables (Source: U.S. Department of The Treasury)</i>	<i>TARP Recipient</i>	A dummy variable which takes a value of 1 if the bank was provided TARP capital support.	0.949	1.000	0.219	1.000	1.000	5,973
	<i>Log (1+Bailout Amount)</i>	The natural log of (1 + the bank dollar bailout support); A larger value indicates a higher degree of TARP support.	15.920	17.034	3.756	17.034	17.034	5,973
	<i>Post TARP</i>	An indicator equal to 1 in 2009-2012 and 0 in 2005-2008.	0.333	0.000	0.471	0.000	1.000	5,973
<i>Borrower Control Variables (Source: Compustat)</i>	<i>Borrower Size</i>	The natural log of book value of total assets of the borrower in millions of dollars.	7.529	7.466	1.776	6.281	8.724	5,973
	<i>Market-To-Book</i>	Market-to-book ratio determined as the market value of equity (PRCC_F * CSHO), scaled by the book value of equity.	1.957	2.108	40.971	1.359	3.315	5,973
	<i>Leverage</i>	The ratio of book value of total debt to book value of assets. Total Debt / (Total Debt + Market Value of Equity), where Total Debt = Long Term Debt + Total Debt in Current Liabilities.	0.273	0.223	0.228	0.097	0.394	5,973
	<i>Cash Flow Volatility</i>	Standard deviation of previous 12 quarterly cash flows, where Cash Flow = (Income Before Extraordinary Items + Depreciation and Amortization) / Total Assets, and Depreciation and Amortization (DP) is set to 0 if missing.	0.026	0.010	0.148	0.005	0.022	5,973
	<i>Profitability</i>	The ratio of Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) to Sales.	0.035	0.033	0.030	0.021	0.047	5,973
	<i>Tangibility</i>	The ratio of net property, plant, and equipment (NPPE) to total assets.	0.326	0.251	0.249	0.123	0.502	5,973
	<i>Cash Holdings Ratio</i>	Cash and marketable securities divided by total assets.	0.093	0.049	0.117	0.017	0.122	5,973
	<i>Borrower Rating Dummies</i>	Dummy variables for S&P borrower credit rating types. It includes dummies for S&P ratings of AAA, AA, A, BBB, BB, B, CCC or below and 0 for those without a credit rating.						

Variable Definitions and Summary Statistics for the Full Sample (2005-2012) (cont.)

Type	Variable	Definition	Mean	p50	Std	p25	p75	N
<i>Bank Control Variables</i> (Source: Call Reports, Summary of Deposits)	<i>Bank Size</i>	The natural log of gross total assets (GTA) of the bank.	20.447	20.887	1.140	20.000	21.064	5,973
	<i>CAMELS Proxy: Capital Adequacy</i>	Capitalization ratio, defined as equity capital divided by GTA. Capital adequacy refers to the amount of a bank's capital relative to its assets. Broadly, this criterion evaluates the extent to which a bank can absorb potential losses.	0.098	0.095	0.021	0.089	0.106	5,973
	<i>CAMELS Proxy: Asset Quality</i>	Asset quality evaluates the overall condition of a bank's portfolio and is typically evaluated by a fraction of nonperforming assets and assets in default. Noncurrent loans and leases are loans that are past due for at least ninety days or are no longer accruing interest. Higher proportion of nonperforming assets indicates lower asset quality.	0.026	0.013	0.023	0.009	0.049	5,973
	<i>CAMELS Proxy: Management Quality</i>	A proxy for the bank's management quality calculated as the ratio of overhead expenses to GTA.	0.007	0.007	0.002	0.006	0.008	5,973
	<i>CAMELS Proxy: Earnings (ROA)</i>	Return on assets (ROA), measured as the ratio of the annualized net income to GTA.	0.023	0.020	0.017	0.012	0.033	5,973
	<i>CAMELS Proxy: Liquidity</i>	Cash divided by bank total deposits.	0.087	0.079	0.060	0.056	0.098	5,973
	<i>CAMELS Proxy: Sensitivity to Market Risk</i>	The sensitivity to interest rate risk, defined as the ratio of the absolute difference (gap) between short-term assets and short-term liabilities to GTA.	-0.163	-0.137	0.120	-0.258	-0.081	5,973
	<i>HHI Deposits</i>	A measure of bank concentration, measured by the Herfindahl-Hirschman Deposits Index determined using the bank deposit data from the FDIC Summary of Deposits. Higher values show greater market concentration.	0.160	0.136	0.063	0.120	0.184	5,973
	<i>Percent Metropolitan</i>	Percent of the bank deposits which are in metropolitan areas (MSAs or NECMAs).	0.989	0.994	0.015	0.987	0.998	5,973
	<i>Fee Income</i>	The ratio of bank's non-interest income to total bank income.	0.353	0.350	0.098	0.290	0.429	5,973
	<i>Diversification</i>	Laeven and Levine (2007) measure of diversification across different sources of income, calculated as $1 - \frac{ Net\ Interest\ Income - Other\ Operating\ Income }{Total\ Operating\ Income}$.	0.503	0.497	0.251	0.330	0.646	5,973
	<i>DWTAF</i>	Dummy equal to 1 if a bank received discount window (DW) or Term Auction facility (TAF) funding during the crisis.	0.980	1.000	0.139	1.000	1.000	5,973
<i>Other Controls</i> (Sources: LPC Dealscan, Compustat)	<i>Loan Type Dummies</i>	Dummy variables for loan types. It includes term loans, revolving credit lines, and other loans.						
	<i>Industry Fixed Effects</i>	Dummy variables for borrower 2-digit SIC codes.						
	<i>Year Fixed Effects</i>	Dummy variables for years in the sample.						
<i>Instrumental Variable</i> (Sources: Center for Responsive Politics, House of Representatives, Missouri Census Data Center)	<i>Subcommittees on Financial Institutions or Capital Markets</i>	A dummy variable which takes a value of 1 if a firm is headquartered in a district of a House member, who served on the Capital Markets Subcommittee or the Financial Institutions Subcommittee of the House Financial Services Committee in 2008 or 2009.	0.369	0.000	0.483	0.000	1.000	5,919

Table II: Effects of TARP on Loan Contract Terms: Main Results (Credit Supply at the Intensive Margin)

This table reports estimates from difference-in-difference (DID) regression estimates for analyzing the effects of TARP on loan contract terms. The dependent variables are the five loan contract terms: loan spread, size, maturity, collateral, and covenant intensity index. The explanatory variables are *TARP Recipient* (a dummy equal to one if the bank was provided TARP capital support), *Post TARP* (a dummy equal to one in 2009-2012, the period after TARP program initiation), their interaction, as well as borrower and other bank characteristics. Borrower characteristics are borrower size, market-to-book, leverage, profitability, tangibility, cash flow volatility, cash holdings ratio. Borrower rating dummies are borrower S&P credit rating dummies. Bank characteristics are bank size, capital adequacy, asset quality, management quality, earnings, liquidity, sensitivity to market risk, HHI, percent metropolitan, fee income, diversification, and DWTAFF (Discount Window and/or Term Auction Facility programs). Models also include loan type dummies, industry (2-digit SIC) fixed effects and year-fixed effects. The estimation results are for 2005-2012. All variables are defined in Table I. *, **, and *** denote significance at 10%, 5%, and 1% level.

Main Results – Credit Supply at the Intensive Margin					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	45.885*** (5.735)	-0.006 (-0.087)	-0.031 (-0.702)	-0.035 (-1.052)	-0.282** (-2.062)
<i>Post TARP × TARP Recipient</i>	-41.974*** (-2.716)	0.257*** (2.647)	0.185*** (3.570)	-0.083** (-2.089)	-0.484*** (-2.787)
<i>Borrower Size</i>	-18.356*** (-15.558)	0.647*** (60.480)	0.035*** (5.995)	-0.085*** (-19.228)	-0.257*** (-13.688)
<i>Market-To-Book</i>	0.021 (1.639)	-0.000** (-1.972)	0.000 (0.653)	0.000 (1.253)	0.001 (1.443)
<i>Leverage</i>	151.786*** (14.426)	-0.428*** (-5.369)	-0.180*** (-3.728)	0.293*** (8.239)	0.174 (1.110)
<i>Cash Flow Volatility</i>	13.695 (1.139)	0.179** (2.327)	-0.001 (-0.033)	0.018 (0.892)	0.030 (0.279)
<i>Profitability</i>	-317.613*** (-3.792)	1.992*** (4.122)	0.805*** (3.647)	-1.506*** (-7.389)	-2.398*** (-3.000)
<i>Tangibility</i>	7.173 (0.714)	-0.093 (-1.179)	-0.104** (-2.422)	-0.080** (-1.992)	-0.443*** (-2.662)
<i>Cash Holdings Ratio</i>	71.589*** (3.859)	-0.855*** (-7.001)	-0.157** (-2.346)	0.211*** (3.871)	-0.076 (-0.312)
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
Observations	5,372	5,973	5,869	5,973	5,973
Adjusted R-Squared	0.531	0.666	0.383	0.321	0.249

Table III: Effects of TARP on Loan Contract Terms – Instrumental Variable (IV) and Heckman Selection Analyses

This table shows difference-in-difference (DID) regression estimates for analyzing the effects of TARP on loan contract terms using an instrumental variable approach as in Wooldridge Section 18.4.1 (Panels A and B), and Heckman's (1979) Selection Model (Panels A and C). We use as instrument the *Subcommittees on Financial Institutions or Capital Markets*. *Subcommittee on Financial Institutions or Capital Markets* is a variable, which takes a value of 1 if a firm is headquartered in a district of a House member, who served on the Capital Markets Subcommittee or the Financial Institutions Subcommittee of the House Financial Services Committee in 2008 or 2009. The dependent variables are the five loan contract terms: loan spread, size, maturity, collateral, and covenant intensity index. The explanatory variables are *TARP Recipient* (a dummy equal to one if the bank was provided TARP capital support), *Post TARP* (a dummy equal to one in 2009-2012, the period after TARP program initiation), their interaction, as well as borrower and other bank characteristics. Borrower characteristics are borrower size, market-to-book, leverage, profitability, tangibility, cash flow volatility, cash holdings ratio. Borrower rating dummies are borrower S&P credit rating dummies. Bank characteristics are bank size, capital adequacy, asset quality, management quality, earnings, liquidity, sensitivity to market risk, HHI, percent metropolitan, fee income, diversification, and DWTAFF (Discount Window and/or Term Auction Facility programs). Models also include loan type dummies, industry (2-digit SIC) fixed effects and year-fixed effects. The estimation results are for 2005-2012. All variables are defined in Table I. *, **, and *** denote significance at 10%, 5%, and 1% level.

Table III Panel A: First Stage – IV (as in Wooldridge Section 18.4.1)

Instrumental Variable (IV) Analysis – First Stage	
	(1)
Dependent Variable:	<i>TARP Recipient</i>
Independent Variables:	
<i>Subcommittees on Financial Institutions or Capital Markets</i>	0.903*** (3.015)
<i>Borrower Characteristics</i>	Yes
<i>Borrower Rating Dummies</i>	Yes
<i>Bank Characteristics</i>	Yes
<i>Loan Type Dummies</i>	Yes
<i>Industry Fixed Effects</i>	Yes
<i>Year Fixed Effects</i>	Yes
<i>Observations</i>	4,987
<i>Pseudo R-squared</i>	0.656

Table III Panel B: Final Stage – Instrumental Variable (IV) Analysis (as in Wooldridge Section 18.4.1)

Instrumental Variable (IV) Analysis - Final Stage					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	11.849 (0.728)	0.234* (1.681)	-0.002 (-0.018)	-0.190*** (-3.023)	-0.669** (-2.453)
<i>Post TARP × TARP Recipient</i>	-55.168*** (-2.608)	0.192* (1.653)	0.165*** (2.654)	-0.088* (-1.826)	-0.643*** (-2.959)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	4,503	4,987	4,892	4,987	4,987
<i>Adjusted R-squared</i>	0.535	0.674	0.364	0.321	0.250
<i>First Stage Kleibergen-Paap rk Wald F-test</i>	149.572***	149.572***	149.572***	149.572***	149.572***

Table III Panel C: Heckman's (1979) Selection Model – Outcome Equation

Heckman's (1979) Selection Model – Outcome Equation					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	12.612 (0.785)	0.410*** (2.711)	0.094 (1.097)	-0.128* (-1.759)	-0.473 (-1.630)
<i>Post TARP × TARP Recipient</i>	-43.315** (-2.514)	0.232** (2.250)	0.166*** (2.960)	-0.105** (-2.312)	-0.457** (-2.390)
<i>Lambda</i>	15.713** (1.972)	-0.249*** (-2.995)	-0.066 (-1.393)	0.038 (0.936)	0.132 (0.784)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	3,983	4,351	4,269	4,351	4,351
<i>Adjusted R-squared</i>	0.515	0.667	0.323	0.297	0.221

Table IV: Effects of TARP on Loan Contract Terms – Placebo Experiment and Other DID Checks

This table shows difference-in-difference (DID) regression estimates for analyzing the effects of TARP on loan contract terms using a placebo experiment and controlling for bank-specific time trends. Panel A shows the results using a placebo experiment. In the placebo experiment, we fictionally assume that the TARP participation took place four years earlier and we still distinguish between banks that received TARP and those that did not according to their “true” TARP program. The dependent variables are the five loan contract terms: loan spread, size, maturity, collateral, and covenant intensity index. The explanatory variables are *TARP Recipient* (a dummy equal to one if the bank was provided TARP capital support), *Placebo Post TARP* (a dummy equal to one in 2005-2008, the period after the fictional TARP program initiation), their interaction, as well as borrower and other bank characteristics. Panel B reruns our main specification while controlling for bank-specific time trends, bank fixed effects and year fixed effects. Borrower characteristics are borrower size, market-to-book, leverage, profitability, tangibility, cash flow volatility, cash holdings ratio. Borrower rating dummies are borrower S&P credit rating dummies. Bank characteristics are bank size, capital adequacy, asset quality, management quality, earnings, liquidity, sensitivity to market risk, HHI, percent metropolitan, fee income, diversification, and DWTA (Discount Window and/or Term Auction Facility programs). Models also include loan type dummies, industry (2-digit SIC) fixed effects and year-fixed effects. The estimation results are for 2001-2008. All variables are defined in Table I. *, **, and *** denote significance at 10%, 5%, and 1% level.

Table IV Panel A: Placebo Experiment

Placebo Experiment: Assuming TARP Took Place Four Years Earlier					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	19.516*** (3.333)	-0.063 (-1.249)	-0.052 (-1.622)	-0.052** (-2.270)	-0.765*** (-7.400)
<i>Placebo Post TARP × TARP Recipient</i>	15.151* (1.865)	-0.046 (-0.642)	0.081* (1.748)	0.032 (0.926)	0.186 (1.218)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	8,117	8,856	8,622	8,857	8,857
<i>Adjusted R-squared</i>	0.524	0.726	0.456	0.357	0.286

Table IV Panel B: Controlling for Bank-Specific Time Trends

Controlling for Bank-Specific Time Trends					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>Post TARP x TARP Recipient</i>	-63.786*** (-2.623)	0.282** (2.058)	0.266*** (3.854)	-0.084 (-1.582)	-0.693*** (-2.922)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank-Specific Time Trends</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,355	5,952	5,848	5,952	5,952
<i>Adjusted R-squared</i>	0.538	0.666	0.396	0.327	0.259

Table V: Alternative Measure of TARP

This table reports difference-in-difference (DID) regression estimates for the effects of TARP on loan contract terms using an alternative measure for TARP Support: *Log (1+Bailout Amount)*. The dependent variables are the five loan contract terms: loan spread, size, maturity, collateral, and covenant intensity index. The explanatory variables are *Log (1+Bailout Amount)*, *Post TARP* (a dummy equal to one in 2009-2012, the period after TARP program initiation), their interaction, as well as borrower and other bank characteristics. Borrower characteristics are borrower size, market-to-book, leverage, profitability, tangibility, cash flow volatility, cash holdings ratio. Borrower rating dummies are borrower S&P credit rating dummies. Bank characteristics are bank size, capital adequacy, asset quality, management quality, earnings, liquidity, sensitivity to market risk, HHI, percent metropolitan, fee income, diversification, and DWTAF (Discount Window and/or Term Auction Facility programs). Models also include loan type dummies, industry (2-digit SIC) fixed effects and year-fixed effects. The estimation results are for 2005-2012. All variables are defined in Table I. *, **, and *** denote significance at 10%, 5%, and 1% level.

	Log (1+ Bailout Amount)				
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	2.958*** (5.715)	0.000 (0.041)	-0.002 (-0.729)	-0.003 (-1.284)	-0.021** (-2.305)
<i>Post TARP × TARP Recipient</i>	-2.422** (-2.543)	0.015** (2.520)	0.011*** (3.339)	-0.005** (-2.073)	-0.034*** (-3.192)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,372	5,973	5,869	5,973	5,973
<i>Adjusted R-squared</i>	0.530	0.666	0.383	0.321	0.249

Table VI: Alternative Econometric Models

This table reports difference-in-difference (DID) regression estimates for the effects of TARP on loan contract terms using alternative econometric models: bank and year fixed effects in Panel A, bank, year and SIC fixed effects in Panel B, borrower state, year and SIC fixed effects in Panel C, state, year and SIC fixed effects with errors clustered at the borrower level in Panel D, borrower state and year fixed effects with errors clustered at the borrower level in Panel E, borrower state and year fixed effects with errors clustered at the borrower-bank level in Panel F, models excluding all bank-related controls other than proxies for CAMELS in Panel G, models excluding all bank-related controls in Panel H, models excluding all borrower-related controls in Panel I, models excluding all bank and borrower-related controls in Panel J and alternative econometric models for collateral: probit model with year fixed effects, logit model with year fixed effects, conditional loglog model with year fixed effects, probit model with year and SIC fixed effects, logit model with year and SIC fixed effects, and conditional loglog model with year fixed effects and errors clustered at the SIC level in Panel K. The dependent variables are the five loan contract terms: loan spread, size, maturity, collateral, and covenant intensity index. The explanatory variables are *TARP Recipient* (a dummy equal to one if the bank was provided TARP capital support), *Post TARP* (a dummy equal to one in 2009-2012, the period after TARP program initiation), their interaction, as well as borrower and other bank characteristics. Borrower characteristics are borrower size, market-to-book, leverage, profitability, tangibility, cash flow volatility, cash holdings ratio. Borrower rating dummies are borrower S&P credit rating dummies. Bank characteristics are bank size, capital adequacy, asset quality, management quality, earnings, liquidity, sensitivity to market risk, HHI, percent metropolitan, fee income, diversification, and DWTAFF (Discount Window and/or Term Auction Facility programs). Models also include loan type dummies, industry (2-digit SIC) fixed effects and year-fixed effects. The estimation results are for 2005-2012. All variables are defined in Table I. *, **, and *** denote significance at 10%, 5%, and 1% level.

Table VI Panel A: Regression Parameters – Bank, Year, and SIC Fixed Effects

	Bank, Year and SIC Fixed Effects				
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>Post TARP × TARP Recipient</i>	-45.284** (-2.496)	0.264** (2.370)	0.204*** (3.512)	-0.095** (-2.123)	-0.657*** (-3.441)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,372	5,973	5,869	5,973	5,973
<i>Adjusted R-squared</i>	0.534	0.668	0.393	0.328	0.257

Table VI Panel B: Regression Parameters – Bank and Year Fixed Effects

	Bank and Year Fixed Effects				
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>Post TARP × TARP Recipient</i>	-34.458* (-1.954)	0.310*** (2.675)	0.197*** (3.468)	-0.099** (-2.317)	-0.676*** (-3.696)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	No	No	No	No	No
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,855	6,508	6,393	6,508	6,508
<i>Adjusted R-squared</i>	0.520	0.616	0.410	0.313	0.246

Table VI Panel C: Regression Parameters – Borrower State, Year, and SIC Fixed Effects

	Borrower State, Year, and SIC Fixed Effects				
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	46.491*** (5.692)	-0.032 (-0.472)	-0.025 (-0.563)	-0.025 (-0.728)	-0.268* (-1.913)
<i>Post TARP × TARP Recipient</i>	-38.434** (-2.505)	0.262*** (2.665)	0.156*** (2.955)	-0.084** (-2.043)	-0.496*** (-2.823)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>State Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,304	5,891	5,788	5,891	5,891
<i>Adjusted R-squared</i>	0.539	0.672	0.388	0.331	0.255

Table VI Panel D: Regression Parameters – Borrower State, Year, and SIC Fixed Effects and Borrower Clusters

Borrower State, Year, and SIC Fixed Effects and Borrower Clusters					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	46.491*** (4.601)	-0.032 (-0.380)	-0.025 (-0.487)	-0.025 (-0.566)	-0.268 (-1.474)
<i>Post TARP × TARP Recipient</i>	-38.434** (-2.141)	0.262*** (2.677)	0.156** (2.240)	-0.084* (-1.811)	-0.496** (-2.304)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>State Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Clusters</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,304	5,891	5,788	5,891	5,891
<i>Adjusted R-squared</i>	0.539	0.672	0.388	0.331	0.255
<i>No. Clusters</i>	1985	2056	2041	2056	2056

Table VI Panel E: Regression Parameters – SIC and Year Fixed Effects and Borrower Clusters

SIC and Year Fixed Effects and Borrower Clusters					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	45.885*** (4.565)	-0.006 (-0.070)	-0.031 (-0.599)	-0.035 (-0.818)	-0.282 (-1.580)
<i>Post TARP × TARP Recipient</i>	-41.974** (-2.299)	0.257*** (2.680)	0.185*** (2.668)	-0.083* (-1.878)	-0.484** (-2.234)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Clusters</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,372	5,973	5,869	5,973	5,973
<i>Adjusted R-squared</i>	0.531	0.666	0.383	0.321	0.249
<i>No. Clusters</i>	2020	2099	2083	2099	2099

Table VI Panel F: Regression Parameters – SIC and Year Fixed Effects and Borrower-Bank Clusters

SIC and Year Fixed Effects and Borrower-Bank Clusters					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	45.885*** (4.567)	-0.006 (-0.069)	-0.031 (-0.595)	-0.035 (-0.842)	-0.282 (-1.570)
<i>Post TARP × TARP Recipient</i>	-41.974** (-2.306)	0.257*** (2.636)	0.185*** (2.673)	-0.083* (-1.856)	-0.484** (-2.233)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower × Bank Clusters</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,372	5,973	5,869	5,973	5,973
<i>Adjusted R-Squared</i>	0.531	0.666	0.383	0.321	0.249
<i>No. Clusters</i>	2374	2522	2498	2522	2522

Table VI Panel G: Regression Parameters – Exclude Bank Characteristics Other than Proxies for CAMELS

Excluding Bank Characteristics Other than Proxies for CAMELS					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	27.139*** (3.600)	0.139** (2.232)	0.047 (1.121)	-0.060** (-2.008)	-0.370*** (-3.064)
<i>Post TARP × TARP Recipient</i>	-33.661** (-2.205)	0.211** (2.232)	0.189*** (3.687)	-0.078** (-2.023)	-0.380** (-2.276)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>					
<i>Other Than CAMELS</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,396	5,999	5,895	5,999	5,999
<i>Adjusted R-Squared</i>	0.524	0.666	0.381	0.319	0.247

Table VI Panel H: Regression Parameters – Exclude All Bank Characteristics

Excluding All Bank Characteristics					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	20.515*** (3.040)	0.141** (2.518)	0.037 (1.052)	-0.058** (-2.075)	-0.203* (-1.768)
<i>Post TARP × TARP Recipient</i>	-31.711** (-2.191)	0.248*** (2.821)	0.188*** (3.935)	-0.073** (-2.056)	-0.187 (-1.188)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	No	No	No	No	No
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,398	6,001	5,897	6,001	6,001
<i>Adjusted R-Squared</i>	0.520	0.664	0.379	0.317	0.240

Table VI Panel I: Regression Parameters – Exclude All Borrower Characteristics

Excluding All Borrower Characteristics					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	44.641*** (5.140)	-0.241*** (-2.765)	-0.128*** (-3.195)	0.007 (0.221)	-0.168 (-1.283)
<i>Post TARP × TARP Recipient</i>	-58.612*** (-3.465)	0.238* (1.875)	0.255*** (5.111)	-0.113*** (-2.661)	-0.454*** (-2.675)
<i>Borrower Characteristics</i>	No	No	No	No	No
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	6,652	7,380	7,234	7,380	7,380
<i>Adjusted R-Squared</i>	0.359	0.261	0.348	0.130	0.151

Table VI Panel J: Regression Parameters – Using 2-Digit NAICS Industries

	2-Digit NAICS Industries				
Dependent Variables:	(1) <i>Loan Spread</i>	(2) <i>Log (Loan Amount)</i>	(3) <i>Log (Loan Maturity)</i>	(4) <i>Collateral</i>	(5) <i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	46.473*** (5.834)	-0.029 (-0.432)	-0.043 (-0.978)	-0.025 (-0.741)	-0.274** (-1.997)
<i>Post TARP × TARP Recipient</i>	-41.588*** (-2.689)	0.257*** (2.652)	0.197*** (3.707)	-0.094** (-2.367)	-0.509*** (-2.897)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>2-Digit NAICS Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,372	5,973	5,869	5,973	5,973
<i>Adjusted R-Squared</i>	0.526	0.665	0.379	0.318	0.238

Table VI Panel K: Regression Parameters – Using Fama-French 48 Industries

	Fama-French 48 Industries				
Dependent Variables:	(1) <i>Loan Spread</i>	(2) <i>Log (Loan Amount)</i>	(3) <i>Log (Loan Maturity)</i>	(4) <i>Collateral</i>	(5) <i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	45.118*** (5.667)	-0.019 (-0.280)	-0.039 (-0.900)	-0.035 (-1.035)	-0.281** (-2.039)
<i>Post TARP × TARP Recipient</i>	-44.858*** (-2.875)	0.208** (2.180)	0.194*** (3.708)	-0.090** (-2.237)	-0.502*** (-2.868)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Ff48 Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,343	5,940	5,837	5,940	5,940
<i>Adjusted R-Squared</i>	0.531	0.669	0.383	0.320	0.246

Table VI Panel L: Regression Parameters – Alternative Models for Collateral

	Alternative Models for Collateral					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)	(6)
Independent Variables:	<i>Probit</i>	<i>Logit</i>	<i>Cloglog</i>	<i>Probit</i>	<i>Logit</i>	<i>Cloglog</i>
<i>TARP Recipient</i>	0.007 (0.063)	-0.007 (-0.036)	0.051 (0.451)	-0.038 (-0.329)	-0.099 (-0.501)	0.018 (0.152)
<i>Post TARP × TARP Recipient</i>	-0.417*** (-2.829)	-0.683*** (-2.679)	-0.576*** (-3.788)	-0.419*** (-2.653)	-0.637** (-2.304)	-0.544*** (-3.388)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	No	No	No	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	6,463	6,463	6,463	5,831	5,831	5,831
<i>Pseudo R-Squared (Or R-Squared)</i>	0.265	0.266		0.275	0.277	

Table VII: Additional Robustness Tests

This table reports difference-in-difference (DID) regression estimates for the effects of TARP on loan contract terms from additional robustness tests. Panel A reports estimates when excluding borrowers with missing S&P credit rating. Panel B reports estimates when excluding borrowers with only 1 loan. Panel C reports estimates when excluding foreign banks. Panel D reports estimates for the timing of the impact of TARP on loan contract terms. The dependent variables are the five loan contract terms: loan amount, spread, maturity, collateral, and covenant intensity index. The explanatory variables are *TARP Recipient* (a dummy equal to one if the bank was provided TARP capital support), *Post TARP* (a dummy equal to one in 2009-2012, the period after TARP program initiation), their interaction (Panel A, B, C, and D). In Panel D, the coefficients are the interactions of the TARP Recipient variable with year dummies for each year after the TARP program was implemented (2009, 2010, 2011, and 2012). In Panel E, we examine effects of TARP on loan contract terms for involuntary and voluntary TARP participants. In all regression, we also control for borrower and other bank characteristics. Borrower characteristics are borrower size, market-to-book, leverage, profitability, tangibility, cash flow volatility, cash holdings ratio. Borrower rating dummies are borrower S&P credit rating dummies. Bank characteristics are bank size, capital adequacy, asset quality, management quality, earnings, liquidity, sensitivity to market risk, HHI, percent metropolitan, fee income, diversification, and DWTAFF (Discount Window and/or Term Auction Facility programs). Models also include loan type dummies, industry (2-digit SIC) fixed effects and year-fixed effects. The estimation results are for 2005-2012. All variables are defined in Table I. *, **, and *** denote significance at 10%, 5%, and 1% level.

Table VII Panel A: Regression Parameters – Exclude Borrowers with Missing S&P Credit Rating

Exclude Borrowers With Missing Credit Ratings					
Dependent Variables:	(1) <i>Loan Spread</i>	(2) <i>Log (Loan Amount)</i>	(3) <i>Log (Loan Maturity)</i>	(4) <i>Collateral</i>	(5) <i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	36.298** (2.405)	0.011 (0.070)	-0.024 (-0.264)	-0.197*** (-2.666)	-0.163 (-0.549)
<i>Post TARP × TARP Recipient</i>	-50.990*** (-2.606)	0.429*** (2.717)	0.199** (2.483)	-0.090* (-1.664)	-1.043*** (-3.858)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	2,664	3,014	2,949	3,014	3,014
<i>Adjusted R-Squared</i>	0.661	0.520	0.496	0.447	0.351

Table VII Panel B: Regression Parameters – Exclude Borrowers with Only 1 Loan

Exclude Borrowers With Only 1 Loan					
Dependent Variables:	(1) <i>Loan Spread</i>	(2) <i>Log (Loan Amount)</i>	(3) <i>Log (Loan Maturity)</i>	(4) <i>Collateral</i>	(5) <i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	43.931*** (4.919)	-0.044 (-0.556)	-0.009 (-0.180)	-0.057 (-1.533)	-0.323** (-2.073)
<i>Post TARP × TARP Recipient</i>	-44.434*** (-2.653)	0.322*** (2.989)	0.194*** (3.440)	-0.082* (-1.883)	-0.515*** (-2.717)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	4,817	5,372	5,278	5,372	5,372
<i>Adjusted R-squared</i>	0.538	0.647	0.386	0.329	0.267

Table VII Panel C: Regression Parameters – Exclude Foreign Banks

	Exclude Foreign Banks				
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	36.746*** (2.631)	-0.135 (-1.259)	0.077 (1.103)	-0.007 (-0.120)	-0.363 (-1.527)
<i>Post TARP × TARP Recipient</i>	-48.900** (-2.214)	0.467*** (3.575)	0.302*** (4.554)	-0.101** (-2.028)	-0.520** (-2.217)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	4,663	5,212	5,119	5,212	5,212
<i>Adjusted R-Squared</i>	0.540	0.643	0.397	0.326	0.262

Table VII Panel D: Regression Parameters – Timing of the Effects

	Timeline of TARP Effects				
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	47.114*** (5.889)	-0.013 (-0.192)	-0.033 (-0.748)	-0.036 (-1.073)	-0.276** (-2.003)
<i>Post TARP 2009 × TARP Recipient</i>	-35.537** (-2.112)	0.207** (2.002)	0.161*** (2.925)	-0.083** (-2.017)	-0.383** (-2.056)
<i>Post TARP 2010 × TARP Recipient</i>	-56.874*** (-3.633)	0.352*** (3.073)	0.202*** (3.367)	-0.091* (-1.799)	-0.587*** (-2.720)
<i>Post TARP 2011 × TARP Recipient</i>	-52.606*** (-3.145)	0.358*** (2.852)	0.247*** (3.766)	-0.087 (-1.454)	-0.739*** (-3.099)
<i>Post TARP 2012 × TARP Recipient</i>	-58.945*** (-2.798)	0.310* (1.947)	0.260*** (3.265)	-0.002 (-0.028)	-0.540* (-1.809)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,372	5,973	5,869	5,973	5,973
<i>Adjusted R-Squared</i>	0.531	0.666	0.383	0.321	0.249

Table VII Panel E: Regression Parameters – Involuntary and Voluntary Participants

Involuntary and Voluntary Participants					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient INVOL</i>	78.213*** (7.568)	-0.127 (-1.464)	-0.136** (-2.322)	0.068 (1.539)	-0.411** (-2.232)
<i>TARP Recipient VOL</i>	38.490*** (4.676)	0.020 (0.280)	-0.027 (-0.574)	-0.056 (-1.567)	-0.341** (-2.325)
<i>Post TARP × TARP Recipient INVOL</i>	-34.444** (-2.061)	0.232** (2.252)	0.142*** (2.607)	-0.061 (-1.439)	-0.616*** (-3.356)
<i>Post TARP × TARP Recipient VOL</i>	-32.146** (-1.990)	0.218** (2.013)	0.193*** (3.142)	-0.054 (-1.098)	-0.315 (-1.529)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,372	5,973	5,869	5,973	5,973
<i>Adjusted R-Squared</i>	0.532	0.666	0.384	0.322	0.249

Table VII Panel F: Regression Parameters – Stress Test and Non-Stress Test Participants

Stress Tests (SCAP and CCAR) And Non-Stress Tests Participants					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>Stress-Test TARP Recipient</i>	35.412*** (4.016)	0.089 (1.169)	-0.035 (-0.729)	-0.089** (-2.317)	-0.306* (-1.906)
<i>Non-Stress-Test TARP Recipient</i>	78.954*** (6.424)	-0.296*** (-2.761)	-0.047 (-0.681)	0.115** (2.416)	-0.271 (-1.218)
<i>Post TARP × Stress-Test TARP Recipient</i>	-37.936** (-2.438)	0.231** (2.324)	0.174*** (3.319)	-0.076* (-1.836)	-0.505*** (-2.837)
<i>Post TARP × Non-Stress-Test TARP Recipient</i>	-84.244*** (-2.973)	0.541*** (3.497)	0.286*** (2.641)	-0.184** (-2.326)	-0.303 (-0.892)
<i>Borrower Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Characteristics</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	5,372	5,973	5,869	5,973	5,973
<i>Adjusted R-Squared</i>	0.531	0.666	0.383	0.322	0.249

Table VIII: Effects of TARP on Loan Contract Terms: Borrower Risk

This table shows additional subsample tests for analyzing the effects of TARP on loan contract terms. It reports difference-in-difference (DID) regression estimates when differentiating between low versus high risk borrowers. Panel A reports the difference-in-difference (DID) regression estimates for TARP lending to high risk borrowers (BB and below S&P credit rating borrowers) and low risk borrowers (BBB and above S&P credit rating borrowers) in Panel A1 and the tests of the equality of the effects of TARP lending for the two different types of borrowers in Panel A2. Panel B reports the difference-in-difference (DID) regression estimates for TARP lending to low risk borrowers (low leverage borrowers, that is leverage \leq median) and high-risk borrowers (high leverage borrowers, that is leverage $>$ median) in Panel B1 and the tests of the equality of the effects of TARP lending for the two different types of borrowers in Panel B2. Panel C reports the difference-in-difference (DID) regression estimates for TARP lending to low risk borrowers (low cash flow volatility borrowers, that is cash flow volatility \leq median) and high risk borrowers (high cash flow volatility borrowers, that is cash flow volatility $>$ median) in Panel C1 and the tests of the equality of the effects of TARP lending for the two different types of borrowers in Panel C2. The dependent variables are the five loan contract terms: loan spread, size, maturity, collateral, and covenant intensity index. The explanatory variables are *TARP Recipient* (a dummy equal to one if the bank was provided TARP capital support), *Post TARP* (a dummy equal to one in 2009-2012, the period after TARP program initiation), their interaction, as well as borrower and other bank characteristics. Borrower characteristics are borrower size, market-to-book, leverage, profitability, tangibility, cash flow volatility, cash holdings ratio. Borrower rating dummies are borrower S&P credit rating dummies. Bank characteristics are bank size, capital adequacy, asset quality, management quality, earnings, liquidity, sensitivity to market risk, HHI, percent metropolitan, fee income, diversification, and DWTAFF (Discount Window and/or Term Auction Facility programs). Models also include loan type dummies, industry (2-digit SIC) fixed effects and year-fixed effects. The estimation results are for 2005-2012. All variables are defined in Table I. *, **, and *** denote significance at 10%, 5%, and 1% level.

Table VIII Panel A: Effects by Borrower Risk: S&P Credit Rating**Table VIII Panel A1: Regression Estimates**

High Risk Borrowers (S&P Credit Rating BB and below)					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	72.453*** (3.466)	-0.009 (-0.044)	-0.034 (-0.268)	-0.240** (-2.476)	0.213 (0.504)
<i>Post TARP × TARP Recipient</i>	-63.352** (-2.108)	0.526** (2.466)	0.313*** (2.834)	-0.198** (-2.301)	-1.980*** (-4.900)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	1,453	1,590	1,533	1,590	1,590
<i>Adjusted R-Squared</i>	0.524	0.484	0.246	0.088	0.168
Low Risk Borrowers (S&P Credit Rating BBB And Above)					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	-50.191** (-2.292)	0.150 (0.530)	-0.012 (-0.103)	-0.243* (-1.850)	-0.191 (-0.542)
<i>Post TARP × TARP Recipient</i>	-7.846 (-0.374)	0.282 (1.044)	-0.070 (-0.782)	0.055 (0.694)	0.246 (0.678)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	1,211	1,424	1,416	1,424	1,424
<i>Adjusted R-Squared</i>	0.732	0.471	0.662	0.157	0.287

Table VIII Panel A2: Tests of the Equality of the Effects of TARP for Different Types of Borrowers

Variables	Borrower Risk (S&P Credit Rating)				
	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>t-stat</i> : Effect for high risk borrowers =					
Effect for low risk borrowers	-1.514	0.710	2.695***	-2.167**	-4.099***

Table VIII Panel B: Effects by Borrower Risk: High Leverage vs. Low Leverage**Table VIII Panel B1: Regression Estimates**

Dependent Variables:	High Risk Borrowers (Leverage > Median)				
	(1) <i>Loan Spread</i>	(2) <i>Log (Loan Amount)</i>	(3) <i>Log (Loan Maturity)</i>	(4) <i>Collateral</i>	(5) <i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	27.066** (2.274)	0.110 (0.965)	-0.065 (-0.970)	-0.007 (-0.138)	-0.132 (-0.595)
<i>Post TARP × TARP Recipient</i>	-45.707** (-2.333)	0.183 (1.449)	0.135** (2.049)	-0.157*** (-3.056)	-0.873*** (-3.755)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	2,609	2,865	2,802	2,865	2,865
<i>Adjusted R-Squared</i>	0.560	0.597	0.335	0.320	0.248

Dependent Variables:	Low Risk Borrowers (Leverage ≤ Median)				
	(1) <i>Loan Spread</i>	(2) <i>Log (Loan Amount)</i>	(3) <i>Log (Loan Maturity)</i>	(4) <i>Collateral</i>	(5) <i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	44.304*** (4.525)	-0.094 (-1.132)	0.019 (0.361)	-0.088** (-1.976)	-0.394** (-2.266)
<i>Post TARP × TARP Recipient</i>	-26.788 (-1.173)	0.309** (2.084)	0.212** (2.410)	0.006 (0.083)	0.044 (0.166)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	2,763	3,108	3,067	3,108	3,108
<i>Adjusted R-Squared</i>	0.460	0.732	0.452	0.334	0.290

Table VIII Panel B2: Tests of the Equality of the Effects of TARP for Different Types of Borrowers

Variables	Borrower Risk (Leverage, Median Cutoff)				
	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>t-stat</i> : Effect for high risk borrowers =					
Effect for low risk borrowers	-0.629	-0.648	-0.700	-1.954*	-2.615**

Table VIII Panel C: Effects by Borrower Risk: Cash Flow Volatility

Table VIII Panel C1: Regression Estimates

High Risk Borrowers (Cash Flow Volatility > Median)					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	62.459*** (5.579)	0.001 (0.010)	-0.138** (-2.384)	-0.057 (-1.379)	-0.256 (-1.479)
<i>Post TARP × TARP Recipient</i>	-48.099** (-2.272)	0.238* (1.941)	0.228*** (3.491)	-0.108** (-2.266)	-0.666*** (-3.016)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	2,731	2,986	2,937	2,986	2,986
<i>Adjusted R-Squared</i>	0.479	0.670	0.309	0.278	0.199

Low Risk Borrowers (Cash Flow Volatility ≤ Median)					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	8.916 (0.779)	0.020 (0.168)	0.159** (2.386)	-0.049 (-0.773)	-0.242 (-1.017)
<i>Post TARP × TARP Recipient</i>	-28.013 (-1.543)	0.287* (1.886)	0.093 (1.113)	-0.026 (-0.340)	-0.094 (-0.321)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	2,641	2,987	2,932	2,987	2,987
<i>Adjusted R-Squared</i>	0.561	0.639	0.475	0.326	0.302

Table VIII Panel C2: Tests of the Equality of the Effects of TARP for Different Types of Borrowers

Borrower Risk (Cash Flow Volatility, Median Cutoff)					
Variables	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>t-stat: Effect for high risk borrowers =</i> <i>Effect for low risk borrowers</i>	-0.720	-0.251	1.271	-0.895	-2.071**

Table IX: Effects of TARP on Loan Contract Terms: Borrower Financial Constraints

This table shows additional subsample tests for analyzing the effects of TARP on loan contract terms. It reports the difference-in-difference (DID) regression estimates for the effect of TARP on loan terms to borrowers with different characteristics: effect of TARP on large and small size borrowers (using median as a cutoff for the *BORROWER SIZE* in terms of total assets) in Panel A1 and public versus private status borrowers in Panel B1. The tests of the equality of the effects of TARP lending for the different types of borrowers are reported in Panels A2 and B2, respectively. The dependent variables are the five loan contract terms: loan spread, size, maturity, collateral, and covenant intensity index. The explanatory variables are *TARP RECIPIENT* (a dummy equal to one if the bank was provided TARP capital support), *POST TARP* (a dummy equal to one in 2009-2012, the period after TARP program initiation), their interaction, as well as borrower and other bank characteristics. Borrower characteristics are borrower size, market-to-book, leverage, profitability, tangibility, cash flow volatility, cash holdings ratio. Borrower rating dummies are borrower S&P credit rating dummies. Bank characteristics are bank size, capital adequacy, asset quality, management quality, earnings, liquidity, sensitivity to market risk, HHI, percent metropolitan, fee income, diversification, and DWTAFF (Discount Window and/or Term Auction Facility programs). Models also include loan type dummies, industry (2-digit SIC) fixed effects and year-fixed effects. The estimation results are for 2005-2012. All variables are defined in Table I. *, **, and *** denote significance at 10%, 5%, and 1% level.

Table IX Panel A: Effects by Borrower Financial Constraints: Large versus Small Borrowers**Table IX Panel A1: Regression Estimates**

Large Borrowers (Borrower Size > Median)					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	38.950** (2.414)	0.154 (0.804)	-0.273** (-2.333)	-0.177** (-2.055)	-0.181 (-0.630)
<i>Post TARP × TARP Recipient</i>	-67.952*** (-2.919)	0.403** (2.385)	0.244*** (2.777)	-0.046 (-0.772)	-0.662** (-2.387)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	2,315	2,665	2,625	2,665	2,665
<i>Adjusted R-Squared</i>	0.638	0.381	0.524	0.418	0.325
Small Borrowers (Borrower Size ≤ Median)					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	40.467*** (4.202)	0.038 (0.510)	-0.001 (-0.020)	-0.017 (-0.417)	-0.221 (-1.343)
<i>Post TARP × TARP Recipient</i>	-15.631 (-0.795)	0.072 (0.624)	0.186*** (2.855)	-0.035 (-0.633)	-0.221 (-0.963)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	3,057	3,308	3,244	3,308	3,308
<i>Adjusted R-Squared</i>	0.445	0.555	0.261	0.156	0.113

Table IX Panel A2: Tests of the Equality of the Effects of TARP for Different Types of Borrowers

Borrower Size (Median Cutoff)					
Variables	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>t-stat</i> : Effect for large borrowers = Effect for small borrowers	-1.717*	1.615	0.530	-0.134	-1.225

Table IX Panel B: Effects by Borrower Financial Constraints: Public versus Private Borrowers**Table IX Panel B1: Regression Estimates**

Public Borrowers (Public =1)					
Dependent Variables:	(1) <i>Loan Spread</i>	(2) <i>Log (Loan Amount)</i>	(3) <i>Log (Loan Maturity)</i>	(4) <i>Collateral</i>	(5) <i>Covenant Intensity Index</i>
<i>Independent Variables:</i>					
<i>TARP Recipient</i>	47.806*** (5.575)	-0.053 (-0.730)	-0.037 (-0.819)	-0.029 (-0.793)	-0.263* (-1.801)
<i>Post TARP × TARP Recipient</i>	-51.874*** (-3.145)	0.235** (2.229)	0.203*** (3.537)	-0.098** (-2.229)	-0.565*** (-3.039)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	4,235	4,716	4,652	4,716	4,716
<i>Adjusted R-Squared</i>	0.575	0.701	0.416	0.341	0.273
Private Borrowers (Public =0)					
Dependent Variables:	(1) <i>Loan Spread</i>	(2) <i>Log (Loan Amount)</i>	(3) <i>Log (Loan Maturity)</i>	(4) <i>Collateral</i>	(5) <i>Covenant Intensity Index</i>
<i>Independent Variables:</i>					
<i>TARP Recipient</i>	42.711** (2.012)	0.279 (1.577)	0.054 (0.493)	0.008 (0.090)	0.046 (0.122)
<i>Post TARP × TARP Recipient</i>	-8.560 (-0.244)	0.249 (1.160)	-0.043 (-0.346)	-0.031 (-0.323)	-0.538 (-1.248)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	1,137	1,257	1,217	1,257	1,257
<i>Adjusted R-Squared</i>	0.431	0.552	0.308	0.281	0.218

Table IX Panel B2: Tests of the Equality of the Effects of TARP for Different Types of Borrowers

Public Vs. Private Borrowers					
Variables	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>t-stat</i> : Effect for publicly listed borrowers = Effect for private borrowers	-1.117	-0.058	1.791*	-0.640	-0.058

Table X: Effects of TARP on Loan Contract Terms: Relationship Lending

This table shows additional subsample tests for analyzing the effects of TARP on loan contract terms. It reports the difference-in-difference (DID) regression estimates for TARP lending to relationship borrowers (borrowers with a prior relationship to a TARP bank in the pre-TARP period) and non-relationship borrowers (borrowers without a prior relationship to a TARP bank in the pre-TARP period) in Panel A1 and the tests of the equality of the effects of TARP lending for the two different types of borrowers in Panel A2. The dependent variables are the five loan contract terms: loan spread, size, maturity, collateral, and covenant intensity index. The explanatory variables are *TARP Recipient* (a dummy equal to one if the bank was provided TARP capital support), *Post TARP* (a dummy equal to one in 2009-2012, the period after TARP program initiation), their interaction, as well as borrower and other bank characteristics. Borrower characteristics are borrower size, market-to-book, leverage, profitability, tangibility, cash flow volatility, cash holdings ratio. Borrower rating dummies are borrower S&P credit rating dummies. Bank characteristics are bank size, capital adequacy, asset quality, management quality, earnings, liquidity, sensitivity to market risk, HHI, percent metropolitan, fee income, diversification, and DWTAFF (Discount Window and/or Term Auction Facility programs). Models also include loan type dummies, industry (2-digit SIC) fixed effects and year-fixed effects. The estimation results are for 2005-2012. All variables are defined in Table I. *, **, and *** denote significance at 10%, 5%, and 1% level.

Table X Panel A: Effects by Borrower Relationship Lending Status: Borrowers with a prior relationship to TARP banks versus those without one**Table X Panel A1: Regression Estimates**

Borrowers With A Prior Relationship to TARP Banks					
Dependent Variables:	(1) <i>Loan Spread</i>	(2) <i>Log (Loan Amount)</i>	(3) <i>Log (Loan Maturity)</i>	(4) <i>Collateral</i>	(5) <i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	17.275 (0.530)	-0.136 (-0.596)	0.060 (0.430)	-0.302*** (-2.666)	-0.845* (-1.744)
<i>Post TARP × TARP Recipient</i>	-87.386** (-2.214)	0.455** (2.300)	0.151* (1.727)	-0.102 (-1.318)	-0.200 (-0.540)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	1,519	1,749	1,723	1,749	1,749
<i>Adjusted R-Squared</i>	0.596	0.643	0.522	0.404	0.318
Borrowers Without A Prior Relationship to TARP Banks					
Dependent Variables:	(1) <i>Loan Spread</i>	(2) <i>Log (Loan Amount)</i>	(3) <i>Log (Loan Maturity)</i>	(4) <i>Collateral</i>	(5) <i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	47.880*** (5.951)	-0.032 (-0.453)	-0.042 (-0.899)	0.002 (0.050)	-0.109 (-0.727)
<i>Post TARP × TARP Recipient</i>	-27.487* (-1.788)	0.186* (1.649)	0.203*** (3.212)	-0.083* (-1.732)	-0.542*** (-2.691)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	3,853	4,224	4,146	4,224	4,224
<i>Adjusted R-Squared</i>	0.517	0.658	0.340	0.304	0.232

Table X Panel A2: Tests of the Equality of the Effects of TARP for Different Types of Borrowers

Borrowers with a Prior Relationship to TARP Banks vs. Those without One					
Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>t-stat</i> : Effects for relationship borrowers					
= Effects for non-relationship borrowers	-1.414	1.126	-0.484	-0.209	0.811

Table XI: Effects of TARP on Credit Availability (Credit Supply at the Extensive Margin)

This table reports regression estimates for examining how the TARP program affects the *extensive margin* by focusing on credit availability. The dependent variable is the probability that, for each pre-TARP loan granted by bank i to borrower j , there will be at least one loan with the same bank-borrower pair during the post-TARP period. Models (1)-(4) report estimates when using a probit model. Models (5)-(8) report estimates when using a logit model. Models (9)-(12) report estimates when using an OLS model. The explanatory variable is *TARP Recipient* (a dummy equal to one if the bank was provided TARP capital support). We also control for borrower and other bank characteristics in a number of the specifications. Borrower characteristics are borrower size, market-to-book, leverage, profitability, tangibility, cash flow volatility, cash holdings ratio. Borrower rating dummies are borrower S&P credit rating dummies. Bank characteristics are bank size, capital adequacy, asset quality, management quality, earnings, liquidity, sensitivity to market risk, HHI, percent metropolitan, fee income, diversification, and DWTA (Discount Window and/or Term Auction Facility programs). Models also include industry (2-digit SIC) fixed effects. All variables are defined in Table I. *, **, and *** denote significance at 10%, 5%, and 1% level.

Credit Supply at the Extensive Margin												
Dependent Variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Model:	$Y=Prob(Loan\ Post-TARP / Loan\ Pre-TARP)$				$Y=Prob(Loan\ Post-TARP / Loan\ Pre-TARP)$				$Y=Prob(Loan\ Post-TARP / Loan\ Pre-TARP)$			
Independent Variables:	Probit	Probit	Probit	Probit	Logit	Logit	Logit	Logit	OLS	OLS	OLS	OLS
<i>TARP Recipient</i>	0.880*** (10.077)	0.933*** (9.960)	0.785*** (7.446)	0.627*** (3.538)	1.512*** (9.252)	1.578*** (9.301)	1.337*** (7.006)	1.109*** (3.432)	0.269*** (14.287)	0.274*** (13.330)	0.217*** (9.299)	0.148*** (3.694)
<i>Borrower Size</i>			0.203*** (11.836)	0.184*** (9.455)			0.332*** (11.589)	0.312*** (9.307)			0.066*** (11.949)	0.056*** (9.664)
<i>Market-To-Book</i>			0.000 (0.229)	0.000 (0.499)			0.000 (0.148)	0.000 (0.362)			0.000 (0.135)	0.000 (0.323)
<i>Leverage</i>			-0.394*** (-2.777)	-0.575*** (-3.807)			-0.650*** (-2.744)	-0.955*** (-3.729)			-0.135*** (-2.895)	-0.178*** (-3.957)
<i>Cash Flow Volatility</i>			-0.307 (-1.369)	-0.448 (-1.331)			-0.521 (-1.467)	-0.789 (-1.558)			-0.043** (-2.413)	-0.047** (-2.094)
<i>Profitability</i>			1.346 (1.470)	1.578 (1.576)			2.128 (1.401)	2.519 (1.470)			0.201 (0.772)	0.172 (0.648)
<i>Tangibility</i>			0.197 (1.335)	0.149 (0.942)			0.324 (1.326)	0.298 (1.083)			0.072 (1.442)	0.051 (1.038)
<i>Cash Holdings Ratio</i>			-1.548*** (-6.107)	-1.574*** (-5.270)			-2.632*** (-6.030)	-2.783*** (-5.425)			-0.401*** (-6.469)	-0.345*** (-5.364)
<i>Borrower Rating Dummies</i>	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
<i>Bank Controls</i>	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes
<i>Industry Fixed Effects</i>	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
<i>Observations</i>	6,171	5,029	4,280	4,257	6,171	5,029	4,280	4,257	6,171	5,060	4,330	4,307
<i>Adjusted R-Squared</i>	0.0145	0.0668	0.126	0.210	0.0145	0.0667	0.125	0.213	0.016	0.074	0.144	0.231

APPENDIX Y – ADDITIONAL TESTS

This appendix contains additional tests on which borrowers benefited from the TARP bailout program. Specifically, we investigate whether borrowers using term loans and revolvers benefited and how benefits differ according to borrower market concentration (relatively low and high industry HHI borrowers).

Y.1 Different Loan Types

The DealScan dataset contains term loans, revolvers, and other loans. A term loan is for a specific amount that has a specified repayment schedule, while a revolver allows a borrower to drawdown, repay, and redraw up to a certain amount at any point over the life of the agreement. As noted in Ivashina (2009), there may be differences between term loans and revolvers. We explore whether borrowers using term loans benefited more or less relative to those using revolvers.

Theoretically, term loan or revolver borrowers may be treated differently because they differ in risk and relationship characteristics, both of which may have ambiguous effects as shown in Hypotheses H2a-b and H4a-b in Section 6. Either term loans or revolvers could be safer for banks. Term loans may be safer because of the extra takedown or liquidity risk associated with revolvers. Revolvers may be safer because they may be more often given to the safer borrowers. In addition, revolvers may be more often associated with banking relationships (Berger and Udell, 1995; Dennis, Nandy, and Sharpe, 2000). We rerun our analysis according to whether borrowers use term loans or revolvers.

Regression estimates are shown in Table Y.1 Panel A1, while the tests of equality between the different types of loans are shown in Panel A2. All loan contract terms improved more for term-loan borrowers, although the differences between term-loan and revolver borrowers are not statistically significant, except for LOAN AMOUNT. Overall, TARP banks appear to have provided more favorable terms to borrowers using both loan types but more so for term-loan borrowers.

Y.2 Other Borrower Characteristics: Borrower Industry Concentration

Borrower market power may also affect loan contract term results. We do not have information on the market power of the borrower vis-à-vis the bank. However, following Giroud and Mueller (2011), we measure the borrower industry concentration (HHI), which may be relatively correlated with the borrower market power.³⁹ We group borrowers according to whether they are in relatively concentrated industries (industry HHI > median) or relatively unconcentrated industries (industry HHI ≤ median). We compare the net impact of TARP on changes in loan contract terms for the two different types of borrowers.

Regression estimates are shown in Table Y.2 Panel A1, while the tests of equality between the different groups are shown in Panel A2. We find that borrowers from both relatively concentrated and relatively unconcentrated industries experience improvements in contract terms as a result of TARP. Although the coefficients for loan spread and maturity are larger for the borrowers in relatively concentrated industries, the coefficients for LOAN AMOUNT and covenant intensity are larger for the borrowers in relatively unconcentrated industries. However, the differences between the two types are not statistically significant.⁴⁰

³⁹ The HHI is computed as the sum of squared market shares of the firms in each industry, where the market shares are computed from Compustat using the firms' total sales. When computing the HHI, we use all available Compustat firms, except firms for which sales are either missing or negative.

⁴⁰ In unreported tests, we also perform tests using an alternative proxy for borrower industry concentration – the top four firms in the industry concentration ratio – and we obtain consistent results.

Table Y.1: Effects of TARP on Loan Contract Terms: Loan Types

This table shows additional subsample tests for analyzing the effects of TARP on loan contract terms. It reports the difference-in-difference (DID) regression estimates for the effect of TARP on loan terms to borrowers for different loan types (term loans versus revolving) in Panel A1. The tests of the equality of the effects of TARP lending for the two different types of loans are reported in Panel A2. The dependent variables are the five loan contract terms: loan spread, size, maturity, collateral, and covenant intensity index. The explanatory variables are *TARP Recipient* (a dummy equal to one if the bank was provided TARP capital support), *Post TARP* (a dummy equal to one in 2009-2012, the period after TARP program initiation), their interaction, as well as borrower and other bank characteristics. Borrower characteristics are borrower size, market-to-book, leverage, profitability, tangibility, cash flow volatility, cash holdings ratio. Borrower rating dummies are borrower S&P credit rating dummies. Bank characteristics are bank size, capital adequacy, asset quality, management quality, earnings, liquidity, sensitivity to market risk, HHI, percent metropolitan, fee income, diversification, and DWTA (Discount Window and/or Term Auction Facility programs). Models also include loan type dummies, industry (2-digit SIC) fixed effects and year-fixed effects. The estimation results are for 2005-2012. All variables are defined in Table I. *, **, and *** denote significance at 10%, 5%, and 1% level.

Table Y.1 Panel A: Effects for Different Types of Loans: Term Loans versus Revolvers**Table Y.1 Panel A1: Regression Estimates**

Loan Type: Term Loans					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	107.423*** (4.609)	-0.013 (-0.096)	-0.203** (-2.034)	0.021 (0.291)	-0.199 (-0.601)
<i>Post TARP × TARP Recipient</i>	-78.453* (-1.868)	0.591*** (2.840)	0.385*** (2.934)	-0.173** (-2.011)	-0.906** (-2.285)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	1,313	1,400	1,358	1,400	1,400
<i>Adjusted R-Squared</i>	0.406	0.625	0.198	0.173	0.154
Loan Type: Revolvers					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
Independent Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>TARP Recipient</i>	27.767*** (3.395)	0.000 (0.000)	-0.008 (-0.177)	-0.044 (-1.092)	-0.242 (-1.507)
<i>Post TARP × TARP Recipient</i>	-30.193** (-1.962)	0.088 (0.845)	0.137** (2.376)	-0.059 (-1.130)	-0.292 (-1.408)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	3,753	4,067	4,032	4,067	4,067
<i>Adjusted R-Squared</i>	0.600	0.696	0.196	0.336	0.242

Table Y.1 Panel A2: Tests of the Equality of the Effects of TARP for Different Types of Loans

Term Loans versus Revolvers					
Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>t-stat: Effect for term loans</i>					
= Effect for revolvers	-1.079	2.159**	1.731	-1.134	-1.374

Table Y.2: Effects of TARP on Loan Contract Terms: Other Borrower Characteristics

This table shows additional subsample tests for analyzing the effects of TARP on loan contract terms. It reports the difference-in-difference (DID) regression estimates for the effect of TARP on loan terms to borrowers from relatively concentrated and unconcentrated industries (using median as a cutoff for the borrower industry HHI) in Panel A1. The tests of the equality of the effects of TARP lending for the different types of borrowers are reported in Panel A2. The dependent variables are the five loan contract terms: loan spread, size, maturity, collateral, and covenant intensity index. The explanatory variables are *TARP Recipient* (a dummy equal to one if the bank was provided TARP capital support), *Post TARP* (a dummy equal to one in 2009-2012, the period after TARP program initiation), their interaction, as well as borrower and other bank characteristics. Borrower characteristics are borrower size, market-to-book, leverage, profitability, tangibility, cash flow volatility, cash holdings ratio. Borrower rating dummies are borrower S&P credit rating dummies. Bank characteristics are bank size, capital adequacy, asset quality, management quality, earnings, liquidity, sensitivity to market risk, HHI, percent metropolitan, fee income, diversification, and DWTA (Discount Window and/or Term Auction Facility programs). Models also include loan type dummies, industry (2-digit SIC) fixed effects and year-fixed effects. The estimation results are for 2005-2012. All variables are defined in Table I. *, **, and *** denote significance at 10%, 5%, and 1% level.

Table Y.2 Panel A: Effects for Borrowers in Relatively Concentrated (High HHI) and Unconcentrated (Low HHI) Industries**Table Y.2 Panel A1: Regression Estimates**

Borrowers in Relatively Unconcentrated Industries (Borrower Industry HHI ≤ Median)					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	54.840*** (4.958)	-0.031 (-0.310)	0.027 (0.411)	-0.015 (-0.300)	-0.108 (-0.540)
<i>Post TARP × TARP Recipient</i>	-36.647* (-1.784)	0.342** (2.227)	0.141* (1.779)	-0.060 (-1.029)	-0.495** (-1.988)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	2,376	2,627	2,574	2,627	2,627
<i>Adjusted R-Squared</i>	0.507	0.659	0.354	0.329	0.272
Borrowers in Relatively Concentrated Industries (Borrower Industry HHI > Median)					
Dependent Variables:	(1)	(2)	(3)	(4)	(5)
	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
Independent Variables:					
<i>TARP Recipient</i>	26.818** (2.287)	0.005 (0.057)	-0.050 (-0.887)	-0.041 (-0.846)	-0.466** (-2.388)
<i>Post TARP × TARP Recipient</i>	-49.436** (-2.054)	0.170 (1.406)	0.203*** (2.912)	-0.060 (-1.079)	-0.381 (-1.557)
<i>Borrower Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Borrower Rating Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Bank Controls</i>	Yes	Yes	Yes	Yes	Yes
<i>Loan Type Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Industry Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	2,996	3,346	3,295	3,346	3,346
<i>Adjusted R-Squared</i>	0.567	0.674	0.408	0.329	0.249

Table Y.2 Panel A2: Tests of the Equality of the Effects of TARP for Different Types of Borrowers

Borrowers in Relatively Unconcentrated (Low HHI) and Concentrated (High HHI) Industries					
Variables:	<i>Loan Spread</i>	<i>Log (Loan Amount)</i>	<i>Log (Loan Maturity)</i>	<i>Collateral</i>	<i>Covenant Intensity Index</i>
<i>t-stat: Effects for low HHI borrower</i>					
= Effects for high HHI borrower	0.404	0.878	-0.587	0.000	-0.327