The Carrot and the Stick: Bank Bailouts and the Disciplining Role of Board Appointments*

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Abstract

We empirically examine the Capital Purchase Program (CPP) used by the US government to bail out distressed banks and its implications for regulatory policy. We find strong evidence that a feature of the CPP – the government's ability to appoint independent directors on the board of an assisted bank that missed six dividend payments to Treasury – had a significant effect on bank behavior. Banks were averse to these appointments – the empirical distribution of missed payments exhibits a sharp discontinuity at five. Director appointments by Treasury were associated with improved bank performance and lower CEO pay. Political connections did not affect appointment decisions.

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1 Introduction

Despite the well-publicized negative effect of bailouts on ex ante incentives[1], it is often practically infeasible for governments to avoid bailing out failing banks, especially if many banks fail together, i.e., in the presence of systemic risk. This is the "too many to fail" phenomenon that has been noted in previous research (e.g., Acharya and Yorulmazer (2007), and Farhi and Tirole (2012)). We last witnessed this in spectacular fashion during the 2007-09 financial crisis, as governments all over the world scrambled to save scores of troubled institutions to prevent a cratering of their economies. Once governments realized that this was an insolvency risk crisis triggered by sharp declines in bank equity, many sought to rapidly recapitalize banks (see, e.g., Berger and Roman (2020), Greenwood, Hanson, Stein and Sunderam (2017), Thakor (2018*a*,*b*)) to harvest the private and social benefits of higher bank capital (Berger and Bouwman (2013)). But private recapitalization by banks is daunting because raising equity during a crisis may be difficult and expensive, so the government may provide the necessary capital by buying equity in troubled banks.

During the 2007-09 financial crisis, the Federal Reserve and the U.S. Treasury did this by designing the Capital Purchase Program (CPP) that was used to infuse equity capital into banks under the funding authorization provided by the Troubled Asset Relief Program (TARP). Under this program, started in October 2008, funding was provided by the U.S. Treasury to 707 banks using dividend-paying preferred stock and subordinated debt. In this paper, we empirically examine the effects of the CPP, within the potential distortionary effects of bailouts as the backdrop. Whenever such funding is provided, it raises the specter of both *ex ante* and *ex post* moral hazard. If banks anticipate receiving subsidized equity during a crisis, their ex ante incentives to be well capitalized may be weakened, and they will welcome government assistance during a crisis. Once capital is infused, bank managers may have an ex post incentive to avoid making dividend payments on the preferred stock purchased by the government; indeed, the preferred stock infusion may create risk-shifting moral hazard (see, e.g., Acharya, Gujral, Kulkarni and Shin (2011)). Such considerations often limit the size and scope of government bailouts.

There were, however, features of the CPP that seemed to be, in principle, motivated by these concerns, and thereby could potentially lessen the distortions associated with the government assistance. One key feature was the linking of quarterly payments made on the Treasury preferred stock and subordinated debt to the say the government had in the bank's corporate governance. If the bank missed six quarterly dividend payments on the securities held by Treasury, then it gave Treasury the option to appoint up to two (voting) directors on the bank's board[2]. This covenant is often included in capital-market issues of preferred stock

1. Merton (1977) was the first to recognize that a *de jure* safety net like deposit insurance will generate risk-shifting incentives in banks and also encourage banks to use too little capital. A bailout, if anticipated, is a *de facto* safety net.

2. As we discuss in Section 2.1, the vast majority of capital assistance by Treasury involved preferred stock, so the payments made to Treasury were dividend payments. There was a small fraction of the assistance capital that was provided in the

to protect preferred shareholders' interests, as we discuss later. It is clear that putting its own directors on the board allows the government to *potentially* exercise corporate governance influence to limit ex post moral hazard. But whether the potential is realized to make this an effective mechanism depends on whether these are ceremonial appointments or involve directors capable of flexing their corporate governance muscles to affect decision-making and bank performance. Moreover, this governance intrusion feature makes the *ex ante* incentive effects unclear. For example, if banks welcome the subsidized funding during a future crisis and view the government directors as ceremonial appointments, they may choose to be thinly capitalized in order to make such access to subsidies possible. On the other hand, if they view the accompanying corporate governance intrusion by the government as unwelcome, they will take steps to avoid it, which makes the adverse ex ante incentive effect a less serious concern.

Since the theoretically-predicted effect of the CPP can go either way, the issue needs to be adjudicated empirically. We do this by addressing the following research questions. First, do banks view the access to government bailout funding and the affiliated director appointments favorably or unfavorably? In particular, do banks try to avoid these appointments? This addresses ex ante incentives and whether the government directors play a meaningful role in bank governance or are viewed as ceremonial appointments. Second, how does the appointment of government directors affect the ex post performance of the bank?

We establish the following main results. First, banks strongly attempt to avoid triggering the appointment of government directors on their boards. We show that there is a clear discontinuity in the empirical distribution of missed dividend payments to the U.S. Treasury between five and six. While the number of bank-quarters with five missed dividend payments is 3.4% lower than the number of observations with four missed dividend payments, the empirical frequency drops by 24% when we move from bank-quarters with five missed payments to bank-quarters with six missed payments.

We then analyze the relationship between the number of missed payments to Treasury and its average change to the next quarter. To have a theoretical foundation for this relationship, we develop a simple model in which the bank manager (CEO) enjoys a private benefit of control and stands to lose it with government directors. The bank gets equity funding from the government and, as per the structure of the CPP, it must make dividend payments on it, with the stipulation that the government will appoint directors on the board if a certain number of dividend payments are missed. It takes (privately observed) costly effort by the manager to generate the cash for the dividend payments to the government in any period. The model predicts that the manager will work harder to generate this cash as the bank gets closer to the threshold number of missed payments that will trigger the appointment of government directors. Consequently, the probability

form of subordinated debt; in this case, the payments on the securities owned by Treasury were in fact interest on debt. For expositional convenience, we will sometimes slightly abuse terminology and refer to all payments as dividends, even though some were interest.

of a missed dividend payment declines most precipitously right below the threshold for government director appointments, and is higher on either side of the threshold.

We then take this prediction to the data. For banks that have missed one, two, or three dividend payments to Treasury, we find that the number of missed payments increases on average by 0.78–0.80 in the next quarter. Banks that have missed four dividend payments are more "disciplined" and the average change in the number of missed payments drops to 0.62. For banks that have missed five payments (these are the banks on the edge of the precipice), the number of missed payments increases, on average, by only 0.43. Once the bank has crossed the Rubicon and missed six payments, the average change in the number of missed payments rises sharply, to 0.78. These findings are consistent with our theoretical framework and are validated by a more rigorous econometric analysis, where we examine their statistical robustness and control for potential confounding variables[3].

We also show that this pattern is much stronger for banks that have discretion in making dividend payments, i.e., those that are not so distressed that it is infeasible to pay dividends. Indeed, the discontinuity in dividend payment behavior is driven by relatively "healthy" banks, in terms of profitability and nonperforming loans. Less healthy banks, by contrast, exhibit a high likelihood of missing payments on both sides of the cutoff. Interestingly, the two groups of banks behave similarly once they have missed six payments. Hence, even banks that could in principle afford to make the required dividend payments lose incentives to do so after crossing the cutoff. This evidence is also consistent with our theoretical model, where we capture this heterogeneity by varying the marginal cost of the payment to banks. This cross-sectional heterogeneity is important because it underscores that financially-able banks strenuously try to avoid the governance intrusion accompanying government capital assistance.

An important question has to do with *how* banks are able to make the dividend payments required to avoid the Treasury appointments. During a crisis, it is ostensibly difficult for banks to raise equity capital in the secondary market – and banks tend to raise capital mainly through retained earnings even during normal times (see Uluc and Wieladek (2018)) – so paying a dividend is costly because it depletes capital. Thus, in order to have adequate capital ratios to absorb future shocks to earnings and yet be able to pay dividends on Treasury's preferred stock, banks may accumulate capital by lowering dividend payments overall[4] or cutting back on lending, while continuing to pay Treasury dividends well before they get to the six-missed payments threshold. According to this hypothesis, banks will increase their capital ratios only as long as there is a

3. As we discuss in Section 2.1, there are also other provisions applying to banks that miss dividend payments to Treasury. For example, banks recapitalized with cumulative preferred shares were not allowed to make dividend payments on common shares as soon as they missed even a single dividend payment on the preferred shares. Importantly, *no other restriction takes effect at the 6-missed payment cutoff*, allowing us to isolate the effect of the threat of directors' appointments from other provisions of the CPP.

4. Notice however that the CPP allowed banks to pay dividends to common shareholders only under certain conditions. See Section 2 for details.

threat of Treasury-appointed directors, and not otherwise.

We first document that banks appear to *reduce* their capital ratios once they cross the six-missed payment threshold, consistent with weaker precautionary capital accumulation incentives. More importantly, we can estimate the causal effect of the director appointment threat on capital ratios by taking advantage of a natural experiment. In 2013, Treasury announced its intention to abandon the policy of appointing directors on banks' boards. We show that the banks that, prior to the announcement, had missed less than six payments, and thus had strong incentives to keep making payments, decreased their capital ratios after this announcement. The magnitudes are economically large, ranging between 49 basis points for the leverage ratio, to 127 basis points for the tier 1 capital ratio. Thus, the threat of director appointments induced banks to keep high capital ratios to enable them to continue making dividend payments without risking undercapitalization through negative shocks. But once this threat was removed, banks reduced their capital ratios.

We are *a priori* agnostic about why bank managers may dislike Treasury appointments. It may be because they believe that the appointees may be bureaucrats who will negatively impact board decision-making and diminish bank value. Alternatively, managers may be protecting *their own* interests, fearing that the new directors may reduce managerial entrenchment and rent-seeking. We will let the data speak to this issue, which takes us to our second research question.

In addressing this question, first we show that poor performance is correlated with the likelihood of missing dividend payments to Treasury. Banks that missed at least one dividend payment (these comprise roughly one-third of the institutions in our sample) were less profitable (based on ROA and ROE) and had lower capital ratios than banks that had not missed any dividend payments to Treasury.

We then examine changes in bank performance around *actual* director appointments. Of the 162 banks that, at any given point in time, become eligible for a director appointment, 16 received at least one Treasury-appointed director. We match "treated" banks with institutions in the CPP that are similar in terms of numerous observable characteristics[5]. After government directors come on board, ROA and ROE both improve, and the ratio of nonperforming loans to total loans declines. In addition, treated banks become less prone to engage in earnings management. We do not observe differences in the trends of these variables prior to the appointments, suggesting that our matching procedure does a good job addressing selection concerns. Moreover, there is some evidence of agency costs declining as well, since CEO compensation drops after the government directors join the board. As we discuss in our analysis of the institutional context, Treasury did not possess confidential information regarding the financial conditions of banks and their prospects, and

5. To increase power, we match each treated bank with (at most) four control banks. After losing four treated banks due to missing control variables or lack of adequate matches, our sample for this analysis includes 12 treated and 44 control banks.

the likelihood of receiving an appointment was primarily determined by bank size, attenuating concerns of other factors driving our results. We should stress that this evidence cannot be viewed as making a causal assertion, since we do not have exogenous variation in the probability of receiving a director appointment. Yet, the results are suggestive that Treasury-appointed board members are unlikely to have destroyed value[6].

We then use a "case study" to further test the hypothesis that – the post-appointment improved performance notwithstanding – banks participating in the CPP did not want Treasury director appointments. For this test, we study what we call the "Vikram Pandit shock". In February 2009, Citigroup asked Treasury to convert a portion of its $20 billion of TARP preferred stock investment to common equity to strengthen its capital structure. In exchange, Citigroup agreed to alter the Board of Directors to have a majority of independent directors. Six directors were appointed, three of whom had previous experience in government or banking supervision. Michael O'Neill, a former bank CEO, was appointed as chairman of the board. On October 15, 2012, O'Neill told Pandit that the board had lost confidence in him and that he should resign as CEO, which he did the following day[7]. This suggests that at least some of these directors were active in corporate governance, and that bank CEOs may be averse to such activism.

We analyze the impact of the "Vikram Pandit shock" on the behavior of the other banks in the CPP. For each quarter, we examine the number of banks that are in the CPP and that are eligible for director appointments – these are the banks whose CEOs face the biggest "threat" of being fired. We focus on a $(-2, +2)-$year window surrounding Q4-2012, the quarter of the "Pandit" shock. We find a sharp discontinuity in the rate of growth of the number of "undisciplined" banks in the program, whose number starts dropping precisely after Pandit's firing. We further show that the rate of exit from the CPP due to redemption of Treasury stock increases rapidly after this event, consistent with our hypothesis that Pandit's firing made the consequences of unfriendly boards more *salient* to CEOs of banks funded by Treasury. Moreover, we do not observe a similar pattern for banks that are not eligible for director appointments. For these banks, the exit rate, if anything, appears to decline over the same time window.

Our paper is related to many strands of the literature. One is the literature specifically on TARP and the CPP. Bayazitova and Shivdasani (2012) provide a review, and institutional details of these programs are discussed by Berger and Roman (2020) and Calomiris and Khan (2015). Wilson and Wu (2012) argue

6. In an additional analysis that we report in an online Appendix, we zoom on the publicly-listed banks and examine the market reaction of CPP banks to the *first* appointments made by Treasury, on July 19, 2011. We hypothesize that this announcement was perceived by investors as a strong signal that Treasury was willing to exercise its rights. We find that banks that had missed payments prior to the appointment, and were thus exposed to the possibility of receiving appointments in the future, outperform the other CPP banks by 3.1%–3.8% in a three-day window around the event. We buttress this analysis with an examination of short-run and long-run buy-and-hold returns of the treated banks in our sample after Treasury director appointments. We find that the banks treated with Treasury directors outperform control banks substantially in the year after the appointments.
7. One of the arguments O'Neill made to oust Pandit was that Citigroup's request to resume dividend payments was turned down by the Federal Reserve, and that this was because Pandit did not have a good relationship with regulators (see Silver-Greenberg and Craig (2012))

that banks that exited the program early due to restrictions on CEO compensation and diminished ability to raise private funding. Duchin and Sosyura (2014) show that TARP-assisted banks made riskier loans, i.e., there was ex post (risk-shifting) moral hazard. We differ from this literature in our novel focus on how the anticipation of the change in corporate governance due to government director appointments influenced bank behavior both prior to and, possibly, after the appointments.

This paper is also related to the broader literature on bank bailouts, which acknowledges the ex post benefits of preventing failures but focuses on ex ante costs. These costs are analyzed in many theoretical papers, and include the creation of inefficiencies where none existed (Chari and Kehoe (2016)), altering liquidity in the economy (Diamond and Rajan (2002); Keister (2016)), and inducing excess leverage, especially in large banks (Dávila and Walther (2020))[8]. Clayton and Schaab (2020) find that in the optimal regulatory regime, bail-ins generally dominate bailouts. On the empirical side, Dam and Koetter (2012) provide evidence that changes in bailout expectations affect the probability of official distress of German banks.

These costs notwithstanding, it is widely recognized that bailouts may sometimes be necessary to reduce systemic risk and avoid bank runs (Iyer and Puri (2012)). For this reason, numerous papers focus on their optimal design and the consequences of different design choices. Casey (2015) provides a framework for structuring bailout regulation. Philippon and Skreta (2012) and Tirole (2012) study the cost-minimizing interventions to restore lending and investment in markets frozen by adverse selection. Philippon and Wang (2022) develop a model in which a tournament among banks that may face the prospect of future bailouts can be designed ex ante to reduce the moral hazard engendered by these recapitalizations. Philippon and Schnabl (2013) show that a combination of preferred stock plus warrants reduces opportunistic participation by banks not in need of recapitalization. Acharya and Thakor (2016) develop a model in which the government bails out some banks to prevent "contagious liquidations" caused by creditors of even healthy banks liquidating their banks because they draw adverse (and sometimes erroneous) inferences about the values of commonly-held assets based on the liquidations of other banks. Bailing out troubled banks can be better than letting them fail also because potential acquirers may be poorly capitalized[9].

In sharp contrast to these theoretical papers, our findings suggest that a potentially fruitful mechanism for the government to bail out banks with capital may be to require in exchange an active role in bank governance along the lines of what established by the CPP. This connects our paper to the earlier research dealing with policy prescriptions related to the post-crisis bank governance (e.g., Macey and O'Hara (2016), and Mehran, Morrison and Shapiro (2011)). Relatedly, Berger, Nistor, Ongena and Tsyplakov (2020) empirically examine the restrictions imposed on assisted banks following recapitalization. Their analysis does not examine the

8. Bianchi (2016), instead, finds that systemic and broad-based bailouts can be efficient, as moral hazard effects are limited.
9. Granja, Matvos and Seru (2017) show that auctions of failed banks during the Great Recession led to significant misallocation.

separate effect of governance intrusions via government board appointments, but rather analyzes them together with other restrictions, such as those on executive pay and dividend payments, to construct a "harshness" index.

This paper also contributes to the literature on the role of independent directors for firm performance. As discussed by Hermalin and Weisbach (1998) drawing causal inferences regarding the effect of board structure on firm value is difficult, as board independence can be endogenously fine-tuned to alleviate agency problems. For this reason, researchers have employed a variety of approaches to circumvent endogeneity concerns. Nguyen and Nielsen (2010) exploit sudden deaths of directors and find more negative stock market reactions for events involving independent directors. Masulis and Zhang (2019) show that firm value and performance decline when independent directors are distracted by exogenous personal or professional events. Although related, these results do not naturally extend to our setting, as the directors' appointments we study are imposed by a single shareholder with statutory regulatory authority. Moreover, these appointments are triggered by covenant violations, events that lead to sharp drops in investment (Chava and Roberts (2008)).

The rest of the paper is organized as follows. Section 2 discusses institutional details of TARP and CPP, and also describes the data. Section 3 presents a simple model and descriptive evidence on banks' dividend repayment behavior. Section 4 presents the main empirical results. Section 5 examines bank outcomes around board appointments. Section 6 concludes. Additional information, including the proof of a proposition in the theoretical model, institutional details of the CPP, information on Treasury directors, and additional robustness tests, are in the Appendices.

2 Institutional Context and Data

In this section we provide a description of the relevant institutional details and the data.

2.1 Institutional Context

During the 2007–09 financial crisis, the United States Treasury set up the Troubled Asset Relief Program (TARP) to stabilize the U.S. economy[10]. TARP included government funding for several programs that focused on different sectors of the economy. Among them were capital-infusion programs targeted at banks, such as the Capital Purchase Program (CPP), which began in October 2008, and the Community Development Capital Initiative (CDCI), which began in 2010. The CPP was by far the largest capital-infusion program, and it sought to recapitalize banks. 707 participating banks got recapitalized between October

10. Besides TARP, other policies were enacted during the Great Recession, generally set up to help homeowners struggling with mortgage payments, such as the "Home Affordable Modification Program" (Agarwal et al., 2017) and the "Home Affordable Refinancing Program" (Agarwal et al., 2022).

2008 and December 2009, for a total of $205 billion invested by Treasury.

Under the CPP, Treasury offered to buy three different types of securities from participating institutions – cumulative preferred shares (81% of the banks in the program), non-cumulative preferred shares (12%), and subordinated debt (7%). For the preferred shares, Treasury also acquired warrants for newly issued equity of the institutions. The maximum amount an institution could receive from Treasury was the minimum of $25 billion and 3% of the institution's total risk weighted assets.

The securities could be redeemed subject to certain restrictions, which were changed by the American Recovery and Reinvestment Act (ARRA) in February 2009 (see Wilson and Wu (2012)). Prior to the ARRA, participants could redeem the shares in the first three years after the recapitalization only through newly-issued equity, whereas post-ARRA redemption was also possible without issuing equity.

Given their structure, the three types of securities were senior to the participating institution's common stock in terms of dividend payments and cash flow rights. The dividend payments on the preferred shares were to be made quarterly, and the payment was set at 5% per annum for the first 5 years and 9% thereafter. Interest rates on the subordinated debt were 7.7% and 9%, respectively[11]. Missing three dividend payments put the respective institution under "enhanced" monitoring by Treasury[12].

The U.S. Treasury included an additional covenant related to the appointment of board directors. If the bank missed six quarterly dividend payments, Treasury had the option to appoint up to two additional directors to the bank's board, which would then have to be expanded. These directors would be paid by the bank and were required to act in the best interests of the bank and all its shareholders. This provision is fairly common in issuances of preferred shares[13]. Given that preferred stock does not have voting rights, they can elect two directors in the presence of significant "default events," namely a certain number of dividend payments being missed. The CPP thus incorporated a standard covenant used, in the private sector, as a mechanism to discipline management. In August 2010, as several banks were beginning to cross this cutoff, Treasury announced that board directors appointments would be prioritized for institutions in which it had invested more than $25 million.[14] Since the announcement was made only after the banks had entered the

11. See "Initial Report to the Congress" from the Office of the Special Inspector General for the Troubled Assets Relief Program, July 21, 2009.

12. In these circumstances, Treasury "dedicates more resources to monitoring the institution and may talk to the institution on a more frequent basis" (see "Quarterly Report to Congress" from the Office of the Special Inspector General for the Troubled Assets Relief Program, October 26, 2010).

13. To check that, we download all the corporate filings containing the phrases *elect two directors* and *preferred* available in Edgar, the search engine of the Securities and Exchange Commission, for the third quarter of 2021. We then manually check the 263 resulting filings and find thirty-two examples of this provision, included in issues of preferred shares of financial institutions such as American Express, Wells Fargo, Bank of America, but also non-financial corporations, such as Dominion Energy or Baxter International. The number of missed quarterly dividend payments needed to trigger the election of directors was six in all but one case (when it was four instead).

14. See "Troubled Asset Relief Program – Status of Programs and Implementation of GAO Recommendations" (U.S. Government Accountability office, January 2011). This criterion was motivated by the difficulties Treasury had in appointing directors in small institutions (see Section 5.1), and the funding amount was of course strongly related to bank size. This criterion was not binding, however, as five out of sixteen institutions that received appointments had less than $25 million in funding amount. At the same time Treasury also announced that, if the institution missed five dividend payments, it could ask for permission to

program, there is no concern about "selection into the treatment". To verify that, in *Appendix-Figure A1* we plot the empirical distribution of the funds granted to CPP banks (see Appendix A4). While there is a spike in the distribution at $25 million, we find similar, or larger, spikes for any multiple of $5-million, suggesting that institutions tended to round their funding needs to multiples of $5 million. Thus, as expected, banks could not foresee that funding requests above $25 million could potentially lead to additional monitoring.

For *cumulative* preferred shares, a bank that missed a dividend payment on the CPP preferred stock was not allowed to distribute dividends to common shareholders until all the missed preferred dividend payments were made. In similar vein, the option of Treasury to appoint board directors could be extinguished only after *all* missed dividend payments were made. If banks disliked such corporate governance intrusion by the government, then these features provided banks with strong incentives to expeditiously make all missed dividend payments after crossing the threshold of six missed payments, as long as their financial condition permitted it.

For *non-cumulative* preferred shares, the restriction was weaker but still significant. The bank simply had to make the latest dividend payment on the CPP preferred stock in order to be allowed to pay common stock dividends. However, Treasury's option to appoint board directors after missing six dividend payments was abrogated only if dividends on the preferred shares were paid for *four consecutive* periods.

Banks funded with subordinated debt faced the same mechanism that was used with cumulative preferred stock, meaning that a missed interest payment to Treasury would prevent them from distributing dividends to common shareholders, and that six missed interest payments would give Treasury the option to appoint up to two directors. Given the similarity of the schemes and the fact that only 7% of banks received funding through subordinated debt, throughout the paper we will use "dividend payments" to refer to both dividends on CPP preferred stock and interest payments on the subordinated debt[15]. See *Appendix-Table A1* (Appendix A2) for a summary of the relevant information about the types of securities used.

2.2 Data

We now describe the data sources used in this study. We begin with the data on the dividend payments on CPP securities, which we obtain from the monthly Interest and Dividend Reports available on the Treasury website[16]. These reports list the dividend payments made by each participating institution as well as the outstanding number of missed payments. We also extract actual director appointment dates.

send a (non-voting) observer to board meetings. Observers did not come from the private sector but were Treasury employees and did not have the ability to influence governance in any way. Moreover, this was not a right established by a contractual obligation and, as such, CPP institutions had the option to reject observers, which they did in several cases.

15. Excluding banks funded through subordinated debt from the sample, as well as banks with non-cumulative preferred shares, does not affect our results.

16. Available at the following url:
`https://www.treasury.gov/initiatives/financial-stability/reports/Pages/Dividends-and-Interest-Reports.aspx`

Although the CPP program started in October 2008, the first report was made available only in May 2009, whereas outstanding missed dividend payments are reported from July 2010 onward. To fill the missing observations on the "stock" of outstanding missed dividends before July 2010, we count all the missed payment events and backfill to match the number of missed dividends in July 2010, taking repayments into account[17]. We complement this dataset with information available in the TARP Transaction Reports on program entry and exit of participating institutions. Out of the 707 participating institutions, 11 had already exited the program before or during May 2009, leaving 696 banks with dividend payment data in our dataset. To ensure that our result are not being driven by defaulting banks with no option to make any payment, we restrict the analysis to banks that, beyond being in the program, did not file for bankruptcy.

Annual and quarterly balance sheet and income data covering the time period from 2005 until 2019 are obtained from SNL Financials. We rely on the U.S. Regulated Depository dataset due to its broader coverage. We match the institutions in the CPP by name, city and state with banks in the SNL data flagged as being in the TARP program. Out of 696 CPP institutions, we match 693 banks, of which 572 have non-missing quarterly financial data. There were 162 banks that had, at some point, missed at least 6 payments, and 16 received at least one board appointment.

To analyze the implications of this rule on executives' turnover and compensation, we use BoardEx and SNL data on director and executive positions and their compensation for the period 2007–2019. Fuzzy matching is applied on standardized names to identify the same person in both datasets, and each match is manually checked. To further fill gaps in the panel and extend our dataset, we also hand-collect data using FR Y-6 filings from the Federal Reserve and DEF 14A filings from SEC and FDIC.

The final dataset is an unbalanced panel for the period 2007–2019 incorporating financial data, information on CPP dividend payments, and board members and executives as well as, when available, their compensation.

3 Descriptive Evidence

We begin this section with a simple theoretical model which shows how the likelihood of government-appointed directors can influence the bank's dividend payment strategy. The purpose of the model is mainly to sharpen the intuition for the results of the empirical analysis. Specifically, we make predictions regarding bank behavior under the CPP provisions but do not make normative statements. We also do not take a stand on how an "optimal" mechanism should be designed. Then we present the summary statistics and some graphical evidence.

17. Results are very similar if we do not fill in the missing observations and include only observations from July 2010 onward.

3.1 A Simple Model

We model the bank's dividend repayment behavior to derive a relationship between the outstanding number of missed dividend payments to the government and the likelihood of missing an extra payment.

The time horizon is infinite and the periodic discount rate is β. In every period, the bank has sufficient funds to make the dividend payment with probability e. The manager of the bank can affect this probability by expending effort at a privately-observed cost $c(e) \equiv ke^2/2$. The effort cost $c(e)$ may be thought of as the work the bank manager has to put into risk management and in preserving funds to overcome potential liquidity shortfalls. The manager of a bank without a Treasury-appointed director enjoys a private benefit B. The idea is that government-appointed directors may deny the bank's CEO operating flexibility and perks that directors hand–picked by the CEO would not[18]. To simplify the analysis, our theoretical framework differs from the real-world setting in two respects. First, we assume that the bank cannot make extra payments to make up previously missed dividend payments. Hence, at any point in time, the only two options available to the manager are making or missing the dividend payment. Second, we assume that once the number of missed payments reaches a cutoff N^*, the private benefit B is lost forever, which can be interpreted as a director chosen by Treasury being appointed with probability 1. We make the parametric assumptions $k > 4\beta^2 B$ and $k > \beta B/(1-\beta)$, which ensure the existence of a real and unique solution.

Let n be the number of missed dividend payments. We prove in Appendix A1 the following simple result.

Proposition 1. *The probability of missing an additional dividend payment is equal to 1 if the number of missed payments is $n \geq N^*$. It is decreasing in n if $n < N^*$.*

Proof. *See Appendix A1.*

The first part of the proposition is straightforward: Once the cutoff N^* has been crossed, the manager has no incentive to make any payment, as a positive e will generate an effort cost without any benefit for the manager. In Appendix A1, we show that the optimal effort e^*, and hence, the probability of making a payment for $n < N^*$, satisfies:

$$e^* = \frac{\beta(V_n^* - V_{n+1}^*)}{k} \tag{1}$$

where V_n^* is the value function, in equilibrium, of a bank that has missed n dividend payments. When deciding whether to exert an additional unit of effort, the manager trades off the benefit of an increase in the likelihood of remaining in office the next period with n, rather than $n+1$ missed payments, against the cost of exerting effort. We show that $V_n^* - V_{n+1}^* > 0$ and that this difference is increasing in n. Intuitively,

18. Huang, Maharjan and Thakor (2020) provide evidence that disagreement between the CEO and the Board of Directors (representing shareholders) is of first-order importance in determining the CEO's operating flexibility and the relationship between firm performance and CEO turnover.

missing a payment when a bank is approaching the cutoff N^* can be very costly for the manager, as it makes the likelihood of eventually losing the private benefit B approach one. Hence, e^* is increasing in n and, as a result, the probability of missing an extra dividend payment $1 - e^*$ is *decreasing* in n for $n \leq N^*$.

Banks are likely be heterogeneous with regard to how easy it is for them to make the required dividend payment. For some banks, even though the manager is exerting very high effort, poor bank conditions, in terms of profitability or outstanding pool of loans, may make paying a dividend extremely costly. This aspect is intuitively captured by the parameter k that multiplies the manager's effort cost. Banks with a relatively low k do face a meaningful tradeoff between the choices of making and not making the required dividend payment. Conversely, banks in worse shape may find paying a dividend to be close to prohibitively costly.

Figure 1 plots the relationship between the number of outstanding missed payments and the average change in missed payments in an example with $N^* = 6$, $\beta = 0.5$, $B = 5$, and several values of k, equal to 6, 9, or 18. The dividend payment behavior for banks with different k are identical on the right of the cutoff and are similar on the far left of it. However, as banks get closer to N^*, a substantial gap in repayment probability emerges, with banks with low k exhibiting a sharper drop in the probability of missing a payment. As we will see in Sections 3.4 and 4, this framework captures well the qualitative patterns of the data[19].

3.2 Going Beyond the Model: Some Remarks on the Incentive Effects of Bailouts

While the focus of our theoretical model and empirical analysis is on Treasury's option to appoint directors on the bank's board after six missed dividend payments to Treasury and the incentive effect of this on the bank's manager, it is important to note that this was not the only regulatory intervention that mattered to banks. Every recapitalization via Treasury's purchase of claims on the bank involved heightened regulatory scrutiny in various states of the world prior to the six-missed-payments threshold. For instance, three missed dividend payments led to "enhanced monitoring" by Treasury. Moreover, missing preferred stock dividend payments also meant no common stock dividends could be paid. Thus, missing *any* dividend payment on the preferred stock purchased by Treasury was costly for bank CEOs, with the biggest "hammer" being dropped on the bank when it missed six payments.

One implication of this is that there were no incentives for bank managers to play strategic games with the government, such as deliberately missing preferred stock dividends payments in order to create cash stockpiles for other uses and then making sure that only the event of the sixth-missed-payment was avoided. In other words, the structure of the government's contract under the CPP appears to have been designed

19. Notice that this analysis assumes an interior solution. Banks with k approaching 0 will find virtually costless to issue dividends and will simply refrain from missing any payment.

to incentivize banks to make all their dividend payments, with the strongest incentive being to not miss six payments.

3.3 Descriptive Statistics

Panels A and B of *Table 1* present descriptive statistics for the main variables used in the analysis. Panel A includes our entire starting sample of 572 banks and 6,832 bank-quarter observations.

The number of missed payments to Treasury is measured at the end of the quarter and indicates the total missed dividend payments a bank is facing at that point in time. Each quarter the bank has the choice to pay a dividend (leaving the number of missed dividends unchanged with respect to the previous quarter) and even repay all or a fraction of the previously missed dividends (reducing the number of missed dividend payments with respect to the previous quarter), or miss a dividend payment (increasing the number of missed dividends by one with respect to the previous quarter). Because of this, ΔMissed payments, the quarter-to-quarter change in missed dividend payments, can be equal to one, zero, or a negative number.

As for performance measures, we report ROA and ROE, where ROA represents net income over average total assets (i.e., beginning plus ending assets divided by two) in percentage points, and ROE represents net income over average total equity, also in percentage points[20]. NPLs/Loans is defined as non-accrual and restructured loans as a percentage of total loans and leases. Log(Revenues) represents the logarithm of the sum of net interest income, noninterest income, and gains on sales of securities. We also report three different capital ratios. The leverage ratio represents the tier 1 capital as a percentage of adjusted average assets. The risk–based capital ratio represents total regulatory capital as a percentage of risk-adjusted assets. The tier 1 capital ratio represents tier 1 capital as a percent of risk-adjusted assets. Finally, listed is an indicator variable for the company being publicly listed.

The average number of missed payments is 2.32. The distribution is skewed, with a median of 0 and a 99^{th} percentile equal to 21 missed dividend payments. The mean of ΔMissed payments is 0.25 (the median is equal to 0).

In Panel B, we zoom in on the banks with at least one missed payment (195 banks), and focus on the bank-quarters where at least one dividend payment is missed, which represents about one-third of the sample (2,081 observations). It is immediately apparent, from comparing Panels A and B, that banks with at least one missed payment are much less "disciplined," as their average change in missed payments is 0.74 (median equal to 1). However, the first percentile of the distribution is -5, suggesting that some banks are indeed successful in reducing the stock of outstanding missed payments.

20. These variables are the items *ROAA* and *ROAE*, respectively, in the SNL database.

Not surprisingly, banks with at least one missed payment are less profitable, with average ROA and ROE equal to -0.86% and -16.48%, respectively, relative to full sample means of -0.26% and -5.22%. They are also slightly less likely to be publicly listed (37%, relative to 46% in the full sample). Interestingly, however, banks with at least one missed payment have, on average, lower leverage and comparable risk-based capital ratio and tier 1 risk-based ratio.

3.4 Graphical Evidence

In this section we provide some descriptive descriptive evidence regarding the behavior of banks included in the CPP program. We start by showing the distribution of missed dividend payments to Treasury for each bank-quarter. As discussed previously, 66% of the banks in our sample have zero missed payments. For clarity, we exclude them from the figures presented in this section, but we include them in the econometric analysis that follows.

For each bank-quarter, we count the number of missed payments. The histogram in *Figure 2* shows that, of the remaining 2,081 observations, 1,110 crossed the six-missed payments threshold (53%). The histogram also shows a clearly decreasing pattern, with the frequency of observations declining almost monotonically with the number of missed payments.

While the distribution is relatively smooth, *Figure 2* also displays a clear "jump" between the five- and six-missed payments bars, with the empirical mass dropping discontinuously. To give a sense of the magnitude of the jump, the number of observations drops by 3.4% between the four- and five-missed payments bars and by 24% between the five- and six-missed payments bars (from 173 to 132 observations)[21].

This graphical evidence is consistent with our hypothesis: if managers dislike board appointments by Treasury, they will try strenuously to avoid hitting the six-missed payments threshold. As a result, once they miss five payments, they try avoiding missing an extra payment and may make additional payments to move far away from the threshold that could trigger the appointment of a director.

An alternative way to examine the effect of managers' incentives, motivated by the theoretical analysis in Section 3.1, is to inspect the *change* in the number of missed dividend payments between two consecutive quarters. This is the approach we take in the next section, where we establish the main empirical results.

21. A smaller discontinuity arises also between two and three missed payments. As we discuss in Section 2, it may be due to the threat of "enhanced" monitoring by Treasury of banks missing three dividend payments. Notice, however, that the discontinuity is much smaller, corresponding to a 14% drop in density, and that, once we focus on the dynamic regression model discussed below, we do not detect and unusual pattern in dividend payment between two and three missed payments.

4 Empirical Evidence

In this section, we present the results of our empirical analysis.

4.1 Prospect of Government-appointed Directors and Bank Behavior

Following up on the descriptive evidence of *Figure A4*, we now more formally test whether the possibility of the appointment of a board director by Treasury affects the dividend payment behavior of banks in the CPP program. Specifically, we estimate the following model:

$$\Delta Missed_{i,t+1} = \sum_j \beta_j \times \mathbb{1}(Missed_{i,t} = j) + \delta' X_{i,t} + \varepsilon_{i,t+1} \quad (2)$$

where i indexes banks, t indexes quarters, X is a vector of control variables which include year-quarter fixed effects, and ε is an error term. $Missed$ is the number of missed dividend payments to Treasury and Δ is the first-difference operator, so that $\Delta Missed_{i,t+1} \equiv Missed_{i,t+1} - Missed_{i,t}$; i.e., it represents the change in the number of missed dividend payments between two quarters. If the bank does not miss a payment at time $t+1$, this difference will, of course, be 0. Conversely, the difference will be equal to 1 if the bank misses a dividend payment in quarter $t+1$. Finally, this difference can be negative if the number of missed payments drops, an event that will occur if the bank not only makes a payment at time $t+1$ but also reduces the stock of outstanding missed payments by making some overdue payments left from previous periods. Our coefficients of interest are the β_js, which measure the expected change (relative to the omitted category) in the number of dividend payments between quarters $t+1$ and t conditional on having missed j dividend payments up to quarter t. We bin together all firms having missed more than ten dividend payments (i.e., $j > 10$). To avoid collinearity, one of the β coefficients needs to be set equal to zero. We exclude the coefficient β_5, so that all the coefficients can be interpreted as measuring the expected change in the number of missed payments relative to banks that have missed five payments.

Before moving to the results, we briefly discuss the assumptions underlying our approach. In the simple model presented in Section 3.1, we have assumed that the cost of making a dividend payment is independent of the number of outstanding missed payments, so that we can isolate the effect of the policy on dividend payment behavior. Suppose, however, that there is a latent variable Z, which (i) affects the cost the bank faces in making a dividend payment *and* (ii) also changes discontinuously once the bank crosses the six-missed payment cutoff. In this case, we would be attributing to the policy the effect of unobserved bank heterogeneity[22]. Thus, our maintained assumption is that the distribution of any such latent variable is

22. While we cannot find a plausible theoretical rationale for the existence of such latent variable in this setting, we note that distinguishing between state dependent and unobserved heterogeneity is a problem commonly discussed in the Labor Economics literature, for example when studying the effect of the duration of unemployment spells on the probability of re-employment (see for example Heckman and Singer (1984) and Kroft, Lange and Notowidigdo (2013))

smooth around the relevant cutoff; formally, that $\mathbb{E}[Z|Missed = 5] - \mathbb{E}[Z|Missed = 4] \approx \mathbb{E}[Z|Missed = 6] - \mathbb{E}[Z|Missed = 5]$.

We can provide some support to this assumption by examining the behavior of *observable* bank characteristics that affect the bank's dividend payment ability. In Section 4.2 we identify the ratio of nonperforming loans to total loans and two measures of profitability, return on assets and return on equity, as bank characteristics that may plausibly affect the ability of a bank to make a dividend payment. As we show in *Appendix-Figure A2*, *none* of these variables "jumps" between four and six missed payments. In addition, we run a simple "placebo test." We identify all the non-CPP banks that issued preferred shares during the time span of our analysis and analyze their propensity to make payments on such shares. *Appendix-Figure A3* shows that in this sample the propensity to miss dividend payments appears, if anything, to *increase* as a bank gets closer to missing six payments. (See Appendix A4 for further details.)

Figure 3 plots coefficients obtained after estimating equation (2), together with 95% confidence intervals, without any control variables. Standard errors are clustered at the bank level. First, we find that banks with zero outstanding quarterly payments are by far the most "disciplined" group of banks, with a very low likelihood of missing a payment in $t + 1$. Indeed, we find that unconditionally it is just 3.7%. This is not surprising. As discussed in Sections 2.1 and 3.2, banks that sold cumulative preferred stock to Treasury (which constitute the majority of our sample) were prevented from paying dividends on common stock and faced other costs as well – in terms of greater regulatory scrutiny – if they missed even a single preferred stock dividend payment.

However, banks with at least one missed payment are substantially more likely to miss additional payments, which also makes economic sense. Given that banks are averse to missing any dividend payment, a missed payment signifies a weakness in the bank's financial condition that forces the manager's hand, and indicates an elevated likelihood of future missed payments. Specifically, β_1, β_2, and β_3 are all positive and statistically significant. This means that we can reject the null hypothesis that banks with 1, 2, and 3 missed payments have the same expected change in the number of missed payments as banks with five missed payments. The coefficient drops in magnitude and becomes statistically insignificant for $j = 4$: as banks get closer to the six-missed payment threshold, they become more reluctant to increase the backlog of missed payments further. Intuitively, the manager trades off the capital-accumulation benefit of avoiding a cash outflow (the dividend payment) against the cost of getting closer to the six-missed payments threshold. Hence, managers of banks with five missed payments, our reference category, have the strongest incentive to not increase (and to perhaps even reduce) the outstanding number of missed payments because an additional missed payment will trigger the possibility of a Treasury director appointment. The coefficients β_js are again sizeable and positive, and are all statistically significant for $j \geq 6$, except for β_9, which is more noisily estimated. Again, this is consistent with the prediction of our model in Section 3.1: once the bank has missed six or more payments, the cost of missing an additional payment is relatively small, as making the required payment in period $t+1$ would not suffice to eliminate the risk of having Treasury appointing a director.

For completeness, *Appendix-Figure A4* plots the average change in missed payments against the missed payments at the beginning of the quarter (see Appendix A4). For banks that have missed one, two, or three payments $\Delta Missed$ ranges between 0.78 and 0.80, but reaches 0.43 for banks with five missed payments, increasing substantially once banks have crossed the cutoff of six missed payments.

Table 2 reports the coefficients estimated by using different variations over equation (2). Column 1 simply reports the value of the coefficients presented in the plot of *Figure 3*. Column 2 includes time fixed effects, which have little effect on both the magnitude and the statistical significance of the coefficients. This is not surprising, given the fact that there is substantial heterogeneity in the timing in which different banks approach the six-missed dividend payments threshold (see *Appendix-Figure A5* in Appendix A4).

In Column 3, we further include controls for size and the leverage ratio. Finally, in the "kitchen sink" regression of Column 4, we also include profitability (measured by ROA), the NPL ratio, the risk-based capital ratio, the tier 1 capital ratio, and a publicly-listed dummy. The coefficients on the control variables generally have the expected signs. Smaller and less profitable firms, as well as firms with a higher stock of nonperforming loans, are more likely to miss dividend payments. More importantly, the vector of coefficients β_js is largely unaffected[23].

4.2 Bank Heterogeneity

In the analysis thus far, we did not impose any functional form on the relation between the number of missed payments and their changes. As an alternative approach, we can impose more structure on the econometric design to estimate the size of the discontinuity in $\Delta Missed\,Payments$ at 6. We approximate the relationship between the number of missed payments at t and its change between t and $t+1$ by fitting a polynomial, and test whether there is a discontinuity at 6. Specifically, we estimate the following model:

$$\begin{aligned}\Delta Missed_{i,t+1} = \sum_{k=1}^{K} \alpha_k \times (Missed_{i,t} - 6)^k + \mathbb{1}(Missed_{i,t} \geq 6) \times \sum_{k=1}^{K} \beta_k \times (Missed_{i,t} - 6)^k \\ + \gamma \times \mathbb{1}(Missed_{i,t} \geq 6) + \delta' X_{i,t} + \varepsilon_{i,t+1}\end{aligned} \tag{3}$$

23. In unreported tests, we also control for the pre-CPP propensity to pay dividends, by taking the average between 2005 and 2008 of a dummy equal to one if the bank has paid dividends in a given year. Inclusion of this control leaves the results unaffected.

Notice that, while we are following a standard regression discontinuity approach, we are not making the assumption that there is no manipulation of the distribution of missed payments around the cutoff (see Lee and Lemieux (2010)). Rather, our approach aims at measuring the extent of this manipulation.

The evidence in *Table 2* shows that the relationship between the outstanding number of missed payments and its change to the next period varies depending on whether the bank has at least six missed payments (weakly decreasing for banks below the threshold and roughly flat for banks above). Hence, it is important to fit two different polynomials, the degree of which is given by K, depending on which side a bank is relative to the cutoff. The coefficient of interest is γ.

In *Table 3* we restrict attention to a $(-5, +5)$ window around the cutoff of 6 missed payments, and fit polynomials of degree 1 (in columns 1 and 3) or 2 (columns 2 and 4), i.e., $K = 1$ or $K = 2$. While in columns 1 and 2 we do not include controls, in columns 3 and 4 we include the same control variables considered in column 4 of *Table 2*. We find that the coefficient of interest varies between 0.38 and 0.67 and is significant at the 1% level in all the specifications, suggesting, again, a strong effect of the 6-missed payment cutoff on banks' repayment behavior. *Figure 4* shows the fit of both the linear (Panel A) and quadratic (Panel B) polynomials.

An additional advantage of this approach is that we can analyze how bank behavior changes depending on its characteristics simply by comparing estimates of γ across subsamples. To interpret the tests that follow, recall that the cost of making a dividend payment is that it increases the bank's risk of illiquidity by reducing its cash buffer. For a bank that cannot rely on an intertemporal pattern of positive and stable cash flows, this cost is likely to outweigh the benefit of a lower risk of a board appointment. Consequently, such a bank is unlikely to be making any dividend payments at all, as cash conservation is one if its a priorities. By contrast, a bank expecting a more reliably positive intertemporal pattern of future cash flows will perceive a more meaningful tradeoff between the cash-conservation benefit of missing a dividend and the cost of getting closer to the six missed-payment threshold as a consequence. In the context of the model of Section 3.1, the payment-missing bank has a high k and the payment-making bank has a low k. Interestingly, the behavior of the two banks should not differ once they have crossed the cutoff since the primary reason for making dividend payments is to prevent board appointments, something even healthy banks want. To test this prediction, we sort banks based on the quality of the loan pool (nonperforming loans divided by loans) and profitability (ROA and ROE), measured at the beginning of the quarter. Loan quality is an indicator of future cash flow uncertainty, whereas ROA and ROE are predictors of the level of cash flows. We then estimate equation (3) in subsamples of banks having values of the sorting variable below or above the sample median. For brevity, we focus on the specification with a quadratic polynomial and the full set of controls (i.e., the specification shown in column 4 of *Table 3*).

The results are shown in *Table 4*. As hypothesized, we find that the results are driven by banks with a low NPL-to-loans ratio (columns 1 and 2), and high profitability (columns 3 through 6). These are the banks that can expect a reliably stable intertemporal stream of high cash flows. The differences in the coefficients across subsamples, reported at the bottom of the table, are economically large and, for the sample splits based on the NPL-to-loans ratio, also statistically significant. This is also apparent from the graphical evidence presented in *Appendix-Figure A6*. For these banks, the change in the number of missed dividend payments drops precipitously as they get close to the 6-missed payment cutoff, and rises sharply once the cutoff is crossed. At the same time, banks with a high NPL-to-loans ratio and low profitability do not exhibit any discontinuity in their repayment behavior around the cutoff, consistent with our prediction.

4.3 Director Appointment Threat and Bank Capitalization

Having established that banks appear to dislike Treasury appointments, we now ask: What adjustments do banks make to ensure that Treasury dividends are paid and Treasury director appointments are avoided? The tension is that cutting back on dividends helps to maintain the high capital ratios that regulators want, but this can trigger Treasury director appointments. Since banks typically do not resort to secondary equity issues to refurbish their capital ratios, especially during financial crises, essentially they have two ways to maintain high capital ratios and keep paying dividends. One is to reduce lending, so that the capital ratio rises for any given amount of equity capital on the books. The other is to reduce dividends to common equity but not to preferred shareholders, so capital ratios rise through retained earnings[24]. Either way, the bank will try to continue paying preferred dividends to Treasury while still maintaining a high capital ratio, and each method is costly to the bank's common shareholders. Thus, in the context of the model in Section 3.1, we can interpret the cost of effort e as the bank's (opportunity) cost of making these costly adjustments. Viewed this way, the model predicts that bank capital responds endogenously to the U.S. Treasury's governance policy and that banks will continue to maintain high capital ratios using these costly mechanisms as long as they face the threat of Treasury director appointments, and not otherwise.

As a first test, we reestimate equation (2) but replace the dependent variable with several capital ratios. As *Appendix-Figure A7* shows, banks appear to hold *less* capital once they cross the six-missed payment threshold, that is, when they have substantially lower incentives to pay preferred stock dividends. The leverage ratio, risk-based capital ratio, and the tier 1 capital ratio drop sharply as soon as banks miss the sixth dividend payment.

This evidence supports the view that the threat of Treasury appointments leads banks to adopt a more

24. Note that this strategy is generally available only for banks that have not missed even a single payment to Treasury, as missing a payment prevents banks funded with cumulative preferred shares or subordinated debt from paying dividends to common shareholders (see Section 2).

cautious capital structure. Notice, however, that, although the magnitudes are economically large, the coefficient estimates are not very precise. Moreover, the number of missed payments and the capital ratios are endogenously co-determined by banks' managers, which makes the interpretation of the results not obvious.

To further investigate this question, we take advantage of a policy shock. In September 2013, Treasury disclosed that it was planning to discontinue its policy of appointing directors on banks missing at least six dividend payments, as it planned to exit its CPP investments[25]. Our hypothesis is that banks will react differently to the announcement depending on the outstanding number of missed dividend payments. Based on the above discussion, banks that have already crossed the six-missed dividend payment threshold already have a weak incentive to make additional payments and thus are unlikely to change their capital structure decisions. In contrast, banks that have not crossed the threshold yet will react by adopting riskier policies, since the costs of missing additional dividend payments has been eliminated. In other words, we expect these banks to be "treated" by the policy.

These considerations motivate the following specification:

$$y_{i,t} = \beta \times Post_t \times \mathbb{1}(Missed_i < 6) + \delta_t + \gamma_i + \varepsilon_{i,t}, \tag{4}$$

where y is a capitalization ratio, $Post$ is a dummy equal to one after the announcement of the change in the policy by Treasury (i.e., after the third quarter of 2013) and $\mathbb{1}(Missed_i < 6)$ is a dummy equal to one for banks that had missed less than six payments prior to the policy change, i.e., at the beginning of the third quarter, 2013. This variable is held fixed as the propensity to miss payments could also be affected by the policy. We keep all the banks that were in the CPP in the quarter prior to the announcement and include them in the sample even if they leave the program, as the decision to redeem Treasury's shares could be affected by the policy and lead to selection bias. δ_t and γ_i are year-quarter and bank fixed effects, respectively. We restrict the attention to a relatively short window around the event, three years, by including the years 2012 through 2014 in the sample.

Column 1 of Table 5 shows that treated banks appear to reduce their leverage ratio after the announcement by 49 basis points. This is an economically meaningful effect, given a sample standard deviation of 2.77%, and it is statistically significant at the 5% level. In columns 2 and 3 the dependent variables are the risk-based and tier 1 capital ratios, respectively. The results are qualitatively similar, with coefficients equal

25. See Quarterly Report to Congress October 29, 2013, by the Special Inspector General for the Troubled Asset Relief Program ("SIGTARP"). In the document, SIGTARP (a supervisory body appointed by the President to monitor Treasury's activities with regard to TARP) expressed disappointment at Treasury's decision and recommended against it, arguing that Treasury-appointed directors could provide effective oversight, make a contribution to the board and the institution, and protect shareholders' rights, including taxpayers'. (See Section 5 of the document.) Treasury rejected these recommendations in an October 28, 2013 letter and did not change its course, although, following SIGTARP's efforts, it did ultimately make two appointments on the board of Central Bancorp in 2014 (see Quarterly Report to Congress April 30, 2014).

to 1.20% and 1.27%, respectively, both significant at the 1% level. Hence, as hypothesized, a credible threat of intrusion in the governance of banks through director appointments can be used as a tool to encourage banks to hold more capital.

Panels A, B, and C of Figure 5 plot coefficients obtained after estimating an event-study version of equation (4). Specifically, the *Post* dummy is replaced with a set of dummies corresponding to each quarter in the sample, with $t = 0$ corresponding to the quarter of the announcement, and the coefficient corresponding to $t = -1$ normalized to zero. Trends in capital ratios start to change between treated and control banks only after the announcement, providing strong evidence of its causal impact on banks' choices.

5 Board Appointments and Subsequent Bank Outcomes

The evidence of Section 4 shows that the threat of a director appointment has a noticeable effect on banks' dividend policies, as well as their capitalization. In this section we analyze how actual bank appointments relate to several outcomes, such as profitability and capitalization. We find strong evidence that bank performance improves after board appointments. However, since we do not have exogenous variation in the likelihood of receiving board appointments, we do not assert a causal interpretation of this evidence. Still, this evidence of improved post-appointment performance does suggest that CEOs' dislike for Treasury appointments is unlikely to stem from a desire to protect shareholders.

5.1 Matching Analysis: The Impact of Government-Appointed Directors

Since director appointments are not random and we do not have a valid instrument correlated with the likelihood of an appointment, we adopt a matching strategy, where each "treated" firm, that is, a firm subject to the appointment of a director from Treasury, is matched to control firms based on several observables. If two directors are appointed, we consider the year of the first appointment[26].

A key question is why some banks were selected to receive director appointments, and whether this introduces a selection bias that can confound our results. The most obvious concern is that Treasury made its appointment decisions based on confidential information about the financial conditions and future prospects of banks. For example, had it chosen to select only banks with significant positive future prospects, we may wrongly attribute improvements in performance to the directors' appointments. However, this is unlikely for two reasons[27]. First, Treasury had access only to information available to all the other investors, and also

26. As shown in *Appendix-Table A2*, Treasury made appointments of two directors for the first six treated banks, but then appointed a single director in six out of the other ten banks. This suggests that the choice of how many directors to appoint was primarily determined by the scarcity of available directors as the program progressed, as discussed in Section 5.1.
27. This discussion is largely based on our conversations with Treasury officials who were involved with the CPP.

did not communicate with other regulators, such as the Federal Reserve. For example, after the 2008–09 round of financing, Treasury did not have access to up-to-date CAMELS scores of banks. One reason for this is that making decisions based on confidential information would have put Treasury in a privileged position relative to other investors, potentially exposing it to legal repercussions. Second, before discontinuing the policy, Treasury sought to appoint directors in *all* the banks eligible for appointments. Indeed, the screening process for potential candidates started as soon as the banks missed six payments.

The main reason why several banks did not receive director appointments is that Treasury was often unable to find directors willing to accept these appointments. Most banks in our sample did *not* pay directors and, in some cases, even required directors to purchase an equity stake in the bank, which discouraged potential participation by directors[28]. In these cases, banks often suggested the appointment of local candidates, but Treasury, which had a preference for more qualified individuals, such as retired CEOs, would typically reject this option. Conversely, directors ended up being appointed only in a subset of banks, which tended to be large banks that could pay directors.

Although we do not have information on the banks' remuneration of directors, the practice of not compensating members of the board is virtually absent in large institutions. Indeed, as we show in Section 5.4, bank size is the only consistent predictor of directors' appointments. Hence, in what follows, our key concern will be to account for heterogeneity in bank size.

In our analysis, we select all the banks in the CPP that were never subject to the appointment of directors by Treasury as potential control banks. An alternative choice of control banks would include as potential matches all the regulated financial institutions present in the SNL database. While focusing on such a broad sample would maximize the quality of the match in terms of observable variables, the downside of this approach is that banks that never applied for CPP funds may be different with respect to other (unobserved) characteristics, and yet they would be included in the sample. A second, more conservative, alternative would be to include only banks eligible for a director appointment (i.e., those that crossed the six-missed payment threshold) but not selected by Treasury. Given that only 162 unique banks eventually became eligible for Treasury director appointments, such a restriction on the pool of potential control banks severely reduces the power of our tests. Moreover, as discussed above, it would be difficult to obtain a sample balanced in terms of covariates, as treated banks will invariably be larger. We see our final choice as a compromise between these two alternatives. Reassuringly, the results are not sensitive to the particular sample employed. In Appendix A4, we present tests adopting these alternative sampling restrictions and find qualitatively and quantitatively similar results. (We discuss them briefly in Section 5.2.)

28. Faced with this obstacle, Treasury considered the possibility of paying appointed directors directly, but this option was considered too challenging to implement from a legal standpoint.

We match treated and control firms based on size (measured as the logarithm of total revenues[29]), leverage ratio, the ratio of loans to deposit, and a dummy equal to one if the bank is listed. This choice of variables is designed to address potential selection concerns and provide a meaningful counterfactual. Size is the only meaningful predictor of Treasury's choice to appoint directors, as we show in Section 5.4. To be conservative, in our matching procedure we include three other characteristics as well. Being publicly listed can provide easier access to financing and more visibility in the eyes of the public. The leverage ratio is included because, as shown in Section 4.3, the threat of director appointments and capital ratios are closely linked. Finally, the loans/deposits ratio is included to capture the possibility that Treasury may be concerned with banks' ability to lend to firms and households. Indeed, there is evidence that the size of the financial sector can affect economic growth (see Levine (2005)) as well as household earnings, especially in the bottom half of the income distribution (Beck, Levine and Levkov (2010)).

These variables are measured at the beginning of the year of the director's appointment. Given that the number of potential control banks is much larger than the number of treated banks, we match each treated bank with (a maximum of) four control banks. For each bank, we select four banks with the closest propensity score, obtained by running a logistic regression of the treated dummy on the matching variables. We impose a maximum difference between the propensity scores of 0.025.

There were 26 directors who were eventually appointed by Treasury, and these appointments were spread across 16 banks. Out of the 16 treated banks, 15 have all the variables used for the matching as non-missing, and 12 have at least one matched control satisfying the restriction on the ceiling on the difference in the propensity scores. Appendix A3 presents names of the treated banks, appointment dates, directors' names, and, when available, committee memberships for all the events considered, including those eventually excluded from the sample. Our final sample includes 58 unique banks.

The results of our matching procedure are reported in *Table 6*. The first and second columns report the means of each of the four variables used for the matching procedure. The third reports their difference, and the fourth has the $p-$value computed under the null hypothesis of no difference in the means. In Panel A, we find that for the four variables the differences are economically small, and we can reject the null hypothesis at conventional significance levels[30]. In Panel B we present analogous statistics for the outcome variables. Treated banks have a higher NPLs/Loans ratio and lower profitability, as measured by ROA and ROE, and appear to have a higher level of abnormal accruals[31]. Thus, treated banks appear to be relatively

29. The results are similar if we use the logarithm of total assets instead. The correlation coefficient between the two variables is 0.99.

30. For the listed status dummy, the matching is *exact*, meaning that each listed firm is matched with a set of listed control firms with probability 1 and vice versa. However, some treated firms are matched with less than four control firms (due to the ceiling on the difference in the propensity scores), resulting in a small difference in the means of the listed dummy between the two groups.

31. We define accruals in Section 5.2.

poor performers. This is not a major concern for two reasons. First, there are no differences in the *trends* prior to the director appointments for any of the outcome variables. Panel C shows averages of the first differences of the outcome variables (i.e., the difference between the values of the variable measured one and two years prior to the appointment). The differences of the pre-appointment changes of these variables are never statistically significant and are economically small, with the possible exception of Log(Compensation). Moreover, as we discuss in Section 5.2 (and show in *Figure 6*), there are no differences in the trends for the three years prior to the event. This provides reassurance that the parallel trends assumption is likely to be satisfied. Second, we can tackle this problem more directly by matching treated banks based not only the four variables above, but also on the value of the outcome variable prior to the event. In this way, we constrain the *levels* of the outcome variables to be close prior to the appointments. We present the results, which remain similar, in Appendix A4 and summarize them in Section 5.2.

As an additional check, we follow Derrien and Keksés (2013) and test whether analysts were able to predict changes in bank performance prior to the director appointments. Specifically, we collect consensus earnings forecasts and buy/sell recommendations for the banks in our sample and test whether, in the years leading to the appointments, treated and control banks differ with respect to consensus earnings forecasts and buy/sell recommendations. As we show in *Appendix-Table A3*, we find that this is not the case – treated banks were characterized by slightly more optimistic recommendations and slightly more negative earnings forecasts. None of these differences is statistically significant. While based on a small sample, these results suggest that even sophisticated market participants were not expecting diverging trends in performance prior to the appointments.

Given the evidence presented in Section 4.1 on the aversion of bank managers to Treasury-appointed directors, we expect such appointments to not be merely ceremonial. To investigate this further, we next inspect the appointed directors' backgrounds. We collect biographical information on all directors and CEOs from BoardEx, SNL, and internet sources, such as LinkedIn. Interestingly, four out of the sixteen treated banks received an appointment of a director with public sector experience (either the Office of the Comptroller of the Currency, the Federal Reserve, or the Treasury). We also explore whether appointed directors had any previous joint work experience with the incumbent CEOs, given that CEO-director ties are associated with executive entrenchment, lower board monitoring, lower market valuation (Fracassi and Tate (2012)) and higher CEO pay (Engelberg, Gao and Parsons (2013)). However, out of the 26 directors who were appointed, we could find only one instance where a director had a previous employment connection with the CEO of a treated bank, and that too lasting for just one year. Thus, Treasury appears to have selected directors who were sufficiently independent. In addition, anecdotal evidence suggests that appointees were generally well-regarded by practitioners and industry observers[32].

We also collect information about board committee memberships from banks' proxy statements to get a sense of the degree of influence the board appointees can realistically exert. We find that fourteen out of nineteen directors for whom we have this information sit on at least one board committee, most frequently the audit committee (ten directors)[33]. Interestingly, the Accounting literature emphasizes how more independent audit committees are more effective in monitoring CEO's actions (see, e.g., Klein (2002)).

5.2 Board Appointments and Bank Performance

To assess the effect of Treasury-appointed directors on firm performance, we estimate the following difference-in-differences model:

$$Y_{i,t} = \alpha Post_{i,t} + \beta Post_{i,t} \times Treated_i + \delta_t + \gamma_i + \varepsilon_{i,t} \tag{5}$$

In this equation, $Post$ is a dummy equal to 1 in the year of the appointment and in the following years. $Treated$ is a dummy equal to 1 for firms that are eventually subject to a director appointment. Our coefficient of interest is β, which measures the change in the outcome variable Y after the director appointment for treated banks relative to the matched control group. For each firm, we keep a symmetric seven-year window around the appointment year (i.e., we keep three years before and three years after the director appointment), resulting in a total of 381 observations[34]. All the dependent variables are winsorized at the 1% level. Standard errors are clustered at the bank level[35].

The results of this analysis are reported in *Table 7*. We start in column 1 by focusing on the ratio of nonperforming loans to total loans, a standard measure of quality of outstanding loans. We find a marked improvement, with a β coefficient of -3.67, significant at the 1% level. The coefficient is economically significant, corresponding to almost 90 percent of the sample standard deviation (equal to 4.13%)[36].

Improved bank performance could be due to an improvement in the bank's overall cost management and credit analysis processes, as well as possibly more effective monitoring of bank management by the

32. For example, according to the international law firm *Bryan Cave*, "Based on the Treasury appointees that we're aware of, the Treasury has identified highly qualified independent bank directors, that can act as a real benefit to the institution they're being appointed to. As a general matter, they tend to be well-credentialed outside directors, frequently former bank executives that understand the condition of the bank." (Source: "Treasury updates TARP missed dividend report", lexology.com, March 12, 2012.)
33. There might be even spillover effects from Treasury-appointed directors to the incumbent directors in the form of increased attendance or higher likelihood of dissenting votes, which would increase the impact of these appointments. Unfortunately, data limitations do not allow us to verify this channel.
34. Six banks disappear from the sample prior to the end of the seven-year window (two treated and four control banks). We tracked the reason for their exit in the "National Information Center" (NIC) database, and found that four banks were acquired (two treated and two control) and two banks filed for bankruptcy (both control banks)
35. Throughout, we do not include control variables, as they could be endogenous and bias the results (see the discussion on "bad controls" in Angrist and Pischke (2009), and Gormley and Matsa (2016)). However, if we include lagged values of the variables used for the matching, the results are very similar. We also obtain similar results if we do not include bank fixed effects, but only the "Treated" dummy in the estimation.
36. In unreported tests, we found that lending activity, as measured by the ratio of total loans-to-assets, is unaffected by director appointments. Hence, the reduction in the NPL ratio is mainly driven by an improvement in the loan quality.

new directors. It may also reflect a general reduction in the agency costs of the bank. Alternatively, being appointed by the government, the new directors may seek to make the bank safer by changing its lending policy in the direction of greater prudence and enhanced protection of the safety net. These two scenarios generate different predictions about the effect on the profitability of the bank. In the first case, bank profitability should improve (with no predicted impact on risk), whereas, in the second scenario, the bank's reduction in risk may be obtained at the expense of profitability.

To distinguish between these two possibilities, we examine how bank profitability evolves following a director appointment. We find in Column 2 that the return-on-assets increases by 1.23%, roughly three-fourths of the sample standard deviation (1.65%). Similarly, we find in Column 3 that the return-on-equity increases by 15.48%, which is also economically significant (sample standard deviation equal to 21.68%). In both cases, the coefficients are statistically significant at the 1% level.

We also test whether bank risk drops following director appointments by looking at the effect on risk-based (column 4) and tier 1 (column 5) capital ratios. This is another indirect test of whether directors "respond" to Treasury or to the bank's shareholders. Intuitively, in the first scenario, we would expect these risk measures to improve. However, in both cases, we cannot reject the null hypothesis of no effect.

There is evidence that better corporate governance leads to lower earnings management (e.g., Klein (2002) and Wang, Xie and Zhu (2015)). Thus, another way to test whether governance improves following Treasury director appointments is to analyze the post-appointment dynamics of earnings management. This seems especially relevant, given that many of the Treasury appointees sat on the audit committees of the boards they were appointed to (see *Appendix-Table A2*). We follow Beatty, Ke and Petroni (2002) to construct a proxy for the abnormal use of loan loss provisions, a way in which bank executives can manipulate earnings[37]. Given that such manipulations involve both positive and negative values of accruals (i.e., managers may have incentives to decrease earnings in one year to boost them in the following year), we follow Bergstresser and Philippon (2006) and take the absolute value of the abnormal loss provision as a proxy for abnormal accruals, demeaned and standardized for ease of interpretation. We find a statistically significant drop in earnings management following Treasury appointments, with a coefficient that is also large in economic terms and equal to –0.80 (see Column 6). Thus, managers of treated banks display diminished management of discretionary earnings[38].

37. Specifically, we regress loan loss provisions on NPLs, loan loss allowance, real estate loans, commercial and industrial loans, loans to depository institutions, agriculture loans, consumer loans, loans to foreign governments, the logarithm of total assets, and region-year fixed effects. All the loan variables are scaled by total loans. The error term from this regression is used as a proxy for discretionary accruals.

38. Beatty, Ke and Petroni (2002) also consider another measure of earnings management, the abnormal realized security gains and losses. Unfortunately, this alternative measure is missing for about 30% of the observations. However, consistent with the results of *Table 7*, when we estimate equation (5) in this smaller sample, we obtain a negative coefficient (–0.22), albeit imprecisely estimated (standard error= 0.30).

We complement this analysis by estimating the following event-study regression:

$$Y_{i,t} = \sum_{k=-3}^{3} \alpha_k D_{i,t}^k + \sum_{k=-3}^{3} \beta_k D_{i,t}^k \times Treated_i + \gamma_i + \delta_t + \varepsilon_{i,t} \tag{6}$$

Here $D^k \equiv \mathbb{1}(t = t_i^* + k)$, where t_i^* is the event year for firm i. The coefficients of interest in this design are the β_ks, which capture the evolution of the dependent variable for treated and control banks around the director's appointment. To avoid collinearity, we exclude the dummy corresponding to the year before the appointment. The coefficients β_ks are plotted in Panels A, B, C, and D of *Figure 6* for the ratio of nonperforming loans to total loans, ROA, and ROE, respectively. The coefficients display the expected pattern. There is no evidence of any difference in the trends prior to the appointments, whereas an improvement in performance is apparent starting from $k = 1$. There is also no evidence of mean reversion, suggesting that Treasury-appointed directors can have persistent effects. We present similar event-study evidence for risk-based capital ratio and tier 1 capital ratio in Panels A and B of *Appendix-Figure A8*. Thus, Treasury directors' appointments do not appear to follow unusual or sudden declines in banks' performance, which could, in turn, confound the evidence presented in *Table 7*.

We conduct several robustness tests, relegated for brevity to Appendix A4. First, we enlarge or restrict the set of potential control banks. In Panel A of *Appendix-Table A4* the propensity score matching is run on all the regulated financial institutions. In Panel B, we include as potential controls only banks that, at the time of an appointment, were eligible for an appointment themselves (i.e., that had crossed the 6-missed payment cutoff). In both cases, the results mostly remain qualitatively and quantitatively similar to the results reported earlier (except that, in the second case, we lose precision in the accruals regression).

As discussed in Section 5.1, treated banks are characterized by poor performance in the year prior to the appointment, which could raise the concern that the improvement observed after the director appointments is due to mean reversion. The fact that we do not find evidence of diverging trends between treated and control banks in the three years prior to the appointments already suggests that this unlikely to explain our results. However, we address this concern more directly in *Appendix-Table A5*, where we match treated and control banks on the four variables listed in Section 5.1, as well as on the outcome variable, measured in the year prior to the event. As shown in the two bottom rows of *Appendix-Table A5*, the differences in the *levels* of the outcome variables in the year prior to the appointment are now not only insignificant but also small from an economic point of view[39]. We again find results that are qualitatively and quantitatively similar to those presented in *Table 7*.

39. The sole exception is in the ROE regression (Column 3), where the pre-appointment difference in the level of the dependent variable remains relatively large.

Finally, we ask whether investors perceived director appointments by Treasury as being value enhancing by examining, for the banks that were publicly listed, the stock market reaction to the announcement of the appointments. In Appendix A4, we present evidence that Treasury appointments appear to affect stock market valuations of treated banks (see *Appendix-Table A6*). Moreover, we also zoom in on the market reaction to the appointment *threat*. Specifically, we show that banks with missed payments experienced positive stock price reactions to the announcement of the first Treasury directors on July 19, 2011, when uncertainty regarding Treasury's commitment to exercise its appointment option was arguably resolved, suggesting that additional appointments would follow. (See *Appendix-Figure A10* and *Appendix-Table A7*.)

5.3 Turnover and CEO Compensation

A clear implication of our results of Section 4.1 is that bank managers prefer to avoid having Treasury-appointed directors on their boards. Nonetheless, as shown in the previous section, their appointments are associated with improvements in bank performance. Hence, they do not appear to hurt shareholders, nor does it seem to be the case that banks' CEOs act as guardians of shareholders' interests against unskilled "bureaucrats". Thus, we hypothesize that Treasury-appointed directors might be perceived as directly impacting managers' payoffs, or private benefits, as in the stylized framework presented in Section 3.1. Indeed, according to Mace (1971), directors serve both as a source of advice and discipline. While CEOs may welcome Treasury-appointed directors' ability to provide advice, the reluctance to have these directors on the board may reflect an aversion to their disciplining role and the potential effect of this on CEO compensation.

We adopt the same empirical framework of equation (5) but focus now on executive turnover and CEO compensation. For every year t, turnover is defined as the fraction of board members and executives listed in SNL present in the year $t-1$ but not in the year t. Total CEO reported compensation is also obtained from the SNL database, complemented with data hand-collected from corporate filings[40]. This data collection results in 377 observations for the turnover regressions and 215 for the compensation regressions.

In Column 1 of *Table 8*, we test whether a director appointment is associated with an increase in turnover. We estimate a small and insignificant coefficient, implying a lack of evidence that the executives' job security is significantly threatened by Treasury-appointed directors.

Next we turn to CEO compensation. While the CPP imposed some restrictions on executive compensation, these restrictions were unlikely to fully offset all potential excesses[41]. Treasury directors could be more

40. Given that some banks do not record a CEO, to increase the sample size we include all the executives flagged as either "CEO" or "President," and keep the highest paid of the two. We follow the same procedure if a bank has more than one CEO. Given that only in eight cases we end up using the president's compensation, for brevity we will refer to the dependent variable in this regression as CEO compensation.

41. As Timothy Geithner, the Treasury Secretary between 2009 and 2013, writes: "We had no power to set compensation for

effective in this respect. For example, Core, Holthausen and Larcker (1999) show that more independent outside directors are associated with lower CEO compensation. In Column 2, we replace the dependent variable with the logarithm of total reported compensation. We estimate a large and negative coefficient, –0.25, significant at the 10% level. Hence, there is evidence of a reduction in total pay for CEOs whose banks have government-appointed directors on the board.

The result that CEO pay drops following directors' appointments is remarkable in light of the fact that Treasury appointees are associated with an improvement in bank performance. Indeed, Bennett, Gopalan and Thakor (2021) show that CEO compensation is strongly positively related to ROA and ROE, both of which, as shown in Section 5.2, increase significantly following Treasury appointments.

As a result, the evidence presented in Column 2 may even *underestimate* the true effect of Treasury appointments on CEO pay. To see that, in Column 3 we include contemporaneous NPL/Loans ratio, ROA, and ROE, respectively, as controls. The coefficient on the Post $\times$ Treated variable increases in magnitude and becomes more precisely estimated. The coefficient of interest is -0.38, higher than the baseline estimate of Column 2 and significant at the 1% level.

Given the compensation restrictions for institutions in the CPP (summarized in *Appendix-Table A1*), one potential explanation for this result is that Treasury appointees might have affected CEO pay not directly but *indirectly*, for example, by delaying the bank's exit from the CPP. To account for this possibility, in Column 4 we include an "In CPP" dummy, equal to one for banks still in the program during the year. We find, as expected, that this coefficient is negative, although insignificant. However, our coefficient of interest is largely unaffected and retains its statistical significance. In Panel C of *Appendix-Figure A8* we also report event-study evidence by re-estimating equation (6) with Log(CEO compensation) as dependent variable. Although, given the small sample size, coefficients are not very precisely estimated, the point estimates suggest that Treasury directors appear to affect CEO compensation starting from two years after their appointment.

The fact that the CEO compensation decrease is associated with an improvement in performance rather than a decline helps to alleviate concerns that Treasury appointees may push for CEO pay cuts for purely "political" reasons, such as pandering to public indignation over compensation excesses[42]. Inefficient pay cuts may lead to a migration of talent or a reduction in managerial effort. However, the concomitant improvement

most private firms. We had more authority over firms receiving TARP funds, but we couldn't reduce bonuses to levels that the public might find acceptable without unleashing an exodus of talent from those banks, reducing their prospects of navigating their way to safety. In any case, I thought the public's rage on these issues was insatiable. I feared that the tougher we talked about the bonuses, the more we would own them, fueling unrealistic expectations about our ability to eradicate extravagance in the financial industry." (Geithner (2014))

42. The most well-known controversy in this respect is related to the AIG decision to pay $165 million in bonuses in March 2009, after the government's bailout. The decision of Treasury not to take legal action was followed by outrage expressed by a number of commentators.

in profitability suggests that the drop in executive compensation could be, at least in part, due to reduced agency costs.

One possible reason for the improvement in bank performance after Treasury-appointed directors came on board may have paradoxically been the aversion of CEOs to these directors. CEOs may have worked hard to improve performance, so as to raise private capital, facilitate the exit of their banks from the CPP, and get rid of Treasury-appointed board members, given that banks were not required to keep them on the board after they exited the program. In particular, we are interested in the following question: Did performance improve simply because bank managers were so eager to get rid of Treasury-appointed directors, and the stigma associated with them – in which case they amount to no more than a human version of a scarlet letter – or did these directors actually contribute something useful themselves?

Although our main conclusion that the CPP was effective in recapitalizing banks while coping with ex ante and ex post moral hazard is unaffected by the answer to this question, it is nonetheless an interesting issue to explore. We address it by examining how many of the bank directors were retained by treated banks *after* they exited the CPP. If bank managers worked hard to improve performance just so they could be in a stronger position to raise the necessary private capital to redeem Treasury shares and get rid of the Treasury directors, then we should expect most of these directors to be off the boards right after their banks' exit from the CPP. However, in *Appendix-Table A2*, we find that, out of 26 appointees, only 3 (employed at 2 banks) left the bank before or immediately after the bank's exit. As many as 16 directors (employed at 10 banks) remained on the board even after the bank had left the CPP[43]. This suggests that Treasury-appointed directors were usually perceived by shareholders to have made valuable contributions to bank performance and did not represent a stigma that prompted the CEOs to want to immediately get rid of them.

Thus, while our evidence suggests that CEOs disliked such appointments, in most cases shareholders seemed to have a different view. This tension between management and shareholders is not surprising in light of our evidence on earnings management and compensation (see *Tables 7* and *8*), which shows that the improvement in the performance of the treated banks was related, at least in part, to a reduction in managerial entrenchment and agency costs.

43. For the remaining 7, employed at 4 banks, the exit from the CPP coincides with mergers or bankruptcies.

5.4 In What Circumstances Did Treasury Choose to Exercise Its Director Appointment Option?

The U.S. government has typically been reluctant to get actively involved in the direct governance of banks[44], and hence prefers to use a combination of prudential regulation tools (like capital requirements), regulatory supervision, and market discipline (by the bank's shareholders and subordinated debtholders) to produce the desired behavior by banks (see, e.g., Mehran, Morrison and Shapiro (2011)).

During the 2007–09 crisis, this reluctance may have been due in part to the goal of letting shareholder-owned banks be responsible for their own governance to the extent possible, and in part to not discourage participation in the program by banks. The latter goal was particularly important due to the need to recapitalize banks through government-provided equity and restore the health of the banking system. If banks viewed the cost of participating in the CPP as being exorbitant, even some of those that needed the capital maybe have not opted in, thereby impeding the government's financial stability goal.

This explains why Treasury did not put in place covenants in the CPP that simply stipulated that the government would fire the bank's CEO if a certain number of dividend payments were missed. Rather, Treasury seemed to rely on the notion that the prospect of the appointment of an independent director would be viewed by bank CEOs as unwelcome, but not so odious as to discourage participation in the CPP.

As discussed in Section 5.1, it appears that Treasury had originally underestimated the difficulty in finding qualified directors to appoint, especially for small banks. In fact, this option was exercised in only 10% of the cases in which six payments were missed. However, it is possible that the small number of cases in which Treasury exercised its option was not due to the difficulty in finding directors, but rather to the fact that other systematic criteria were used in choosing banks for director appointments, and these criteria led to the observed outcomes. To examine this possibility, we now test whether there are observable differences across banks that could explain when Treasury chose to exercise its option. We focus on the subset of banks that crossed the six-missed payments threshold and examine a set of potential predictors of a Treasury appointment by estimating a probit model. Thus, the dependent variable is a dummy equal to one if the bank receives a director appointment. The predictors are measured with a one-quarter lag. A bank is dropped from the sample if it receives a director appointment or if it leaves the CPP. We also include year fixed effects; thus, years with no director appointment are excluded, and we only include the

44. Top U.S. policymakers have generally been quite explicit about this reticence: "The notion that we should even consider nationalizing a large swath of the banking system as anything but a last resort, just because it felt resolute and cleansing, seemed irresponsible and unwise. If we nationalized a major bank, we would not only own all its legacy losses and risks, which could be hugely expensive for taxpayers; we would own its management issues and compensation messes and who knew what other surprises. Congress would feel like it owned them, too, and would be tempted to interfere in the bank's business decisions for political purposes." (Geithner (2014))

years 2011, 2012, and 2014[45].

In Column 1 of *Table 9*, we estimate a probit model with the four variables we use for our matching strategy as predictors and a "board appointment dummy" as a dependent variable. For ease of interpretation we report marginal effects evaluated at the means of the independent variables, computed using the "Delta method". We find that size is the only significant predictor of Treasury appointments. The effect is economically large, suggesting that a 1% increase in size leads to a 1.1% increase in the likelihood of a director appointment. In Column 2 we include a dummy equal to 1 if the total funding amount was larger than $25 million, as Treasury had announced that it would prioritize these institutions (see Section 2.1). However, the coefficient on this variable is insignificant. This is not surprising, given its strong correlation with bank size. In Column 3 we include a more comprehensive set of additional predictors, along the lines of the analysis of Table 2. Again, the only consistent predictor of board appointments remains bank size.

It has been suggested to us that Treasury's decision of when to exercise its director appointment option may have been politically motivated. There is previous evidence to suggest that political influences do shape banking outcomes[46]. For example, Agarwal, Lucca, Seru and Trebbi (2014) show that the same banking regulations are implemented differently by state and federal regulators and Faulkender, Jackman and Miran (2020) find that community banks are subject to less stringent regulatory screening. Thus, one might suspect that the political affiliation of the party in power in the state in which the bank is headquartered may matter. To address this possibility, we include two additional variables in Column 4. First, we include a "Blue State" dummy equal to one of the bank is headquartered in a state where Barack Obama prevailed in the 2008 presidential election. Second, we follow Duchin and Sosyura (2014) and include a "Connected" dummy equal to one if the bank is headquartered in a congressional district represented by a member of the House Financial Services Committee, the Capital Markets Subcommittee, or the Financial Institutions Subcommittee in the 112th congress (appointed in January 2011). Our hypothesis is that banks more connected with either the party in power or with influential representatives may be "spared" from interventions by Treasury. However, we find coefficients that are insignificant and small from an economic point of view. The coefficient on bank size remains large and significant. Thus, political economy considerations do not appear to have played a role in determining the banks subject to board appointments.

45. Results are similar if we include the entire period 2011–2014 by not including the year fixed effects or by estimating a linear probability model.

46. Banking outcomes matter a great deal to the real economy: Ajello (2016) shows that exogenous shocks to the intermediation speed explain 25% of GDP. Huang and Thakor (Forthcoming) show that political influence affects banks' capital structure and asset portfolio choices.

5.5 The Effect of the "Pandit Shock"

We now examine whether the firing of Vikram Pandit had any effect on the other banks that were in the CPP. The idea is that the CEOs of banks that participated in the program may not have fully realized the power or inclination of truly independent directors to dismiss them. This hypothesis is consistent with our finding that, for our sample period, the appointment of these directors did not result in a significant increase in turnover at the treated banks. Nonetheless, the "Pandit shock," which occurred three years after the start of the program, may have jolted the CEOs of other banks into recognizing a possibility to which they may have *a priori* attached little probability weight.

As mentioned in the Introduction, the exchange of Citigroup preferred stock for common stock in February 2009 was followed by a significant reshuffling of its board of directors. Although Treasury did not formally choose the directors, not only was Citigroup's decision to appoint new independent directors announced by Treasury at the same time as the exchange decision, so investors perceived the two events as related, but the FDIC was also directly involved in the appointment of the directors, with advice from the Federal Reserve[47].

The actual appointments, announced between March and July 2009, strengthened this perception. Three out of six had previously held public offices, and none of them had any private sector connection with Pandit[48]. More importantly, Michael O'Nell was an experienced banker and, previously, a top contender for the Citi CEO job. He would become Chairman of the Board in March 2012, a role that enabled him to oust Pandit in October 2012.

We hypothesize that this event made more salient the consequences for CEOs of having to face board members who are not only independent, but potentially confrontational. This higher salience may have caused an increase in the exit rate from the program for banks eligible for director appointments.

As in the previous sections, we start by presenting suggestive graphical evidence. In *Figure 7*, we display, for each quarter-end, the total number of banks in the program (in green) and distinguish between banks eligible and ineligible for director appointments (in blue and red, respectively). We restrict attention to the 16 quarters surrounding Pandit's resignation, which occurred at the beginning of the last quarter of 2012. For this analysis we exclude from the sample those institutions whose timing of exit from the program was

47. The direct involvement of the policymakers in Citigroup's governance is reflected in the following statement by Sheila Bair, who was at the time the Chair of the U.S. Federal Deposit Insurance Corporation: "With their [of Ben Bernanke and Fed governor Dan Barullo] help we did get several new board members who had substantial banking experience. Those members included Mike O'Neill and Jerry Grundhofer, two well-regarded former banking executives, and Dana Taylor, the former bank regulator for the State of New York. We were unable to immediately oust Pandit, but we did get the bank to hire an experienced banker to run that part of Citi that was FDIC-insured. We also replaced one of Pandit's top lieutenants. Eventually the FDIC won. After a few years of experience working with Pandit, those new board members decided that he needed to be replaced, as we had long argued." (Bair (2015))

48. Anthony Santomero was a former president of the Federal Reserve Bank of Philadelphia (he resigned in 2011); Diana Taylor was the New York State Superintendent of Banks; Robert Joss was deputy to the Assistant Secretary for Economic Policy at the U.S. Treasury Department. The only connection between either appointee and Pandit reported in the BoardEx "Network" dataset was between him and Diana Taylor, as they were both members of the board of the Columbia Business School.

partially determined by Treasury. These were banks whose shares were auctioned and banks that transitioned to the "Small Business Lending Fund", a program launched in 2011 and designed to promote lending to small firms[49].

Figure 7 shows that the total number of banks in the program declines smoothly. The number of non-eligible banks, which dominate the full sample, follows a similar pattern. When we focus on the eligible banks, however, a distinct inverse U-shape pattern emerges. We find that their total number grows as more and more banks cross the six-missed payment threshold, and reaches its peak right before Pandit's resignation, at which time it starts a rapid decline.

Motivated by this evidence, we test whether Pandit's resignation could have caused a sharp increase in the exit rate of banks that were likely targets of government director appointments. Importantly, we focus only on cases where the bank's exit was the outcome of an *active choice* by the management. To this end, we hand-collect from the TARP reports information on the exit of each individual bank. We start by excluding exits due to mergers and bankruptcies. Moreover, we exclude exits due to the U.S. Treasury's conversion of preferred shares into common shares. In these cases, Treasury loses the right to appoint directors immediately after six missed dividend payments, but, being the holder of shares with voting power, has it the right to vote on the composition of the board. As a result of these restrictions, we retain only exits due to the redemption of shares by the treated institutions.

After applying these filters, we are left with 174 exits due to share redemptions by the CPP institutions, 157 of whom occur over this 16-quarter period (140 for eligible banks and 17 for banks not eligible for a director appointment by the government). We plot the number of exits for each quarter in *Figure 8*. Given that the number of non-eligible institutions still in the program declines over time (see *Figure 7*), the number of exits follows a similar downward trend, as shown by the red line. Conversely, exits are less frequent for eligible institutions but display a sharp increase in the last quarter of 2012, after Pandit's resignation, with just two exits occurring in the two years before, and fifteen afterward.

In *Table 10*, we provide a statistical validation of these results by using a simple difference-in-differences design. The number of exits per quarter rises from 0.25 (one every four quarters on average) to 1.875 (almost two per quarter) for eligible institutions. By contrast, it drops from 10.625 to 6.875 for non-eligible banks.

49. In 2012, Treasury started to launch auctions to wind down its CPP investments for the shares of 190 banks in the CPP, with deadlines in August and October 2012. As a result, several banks left the program, especially in the first half of 2012. We exclude these institutions because Treasury clearly affected both the timing of the exit and the selection of the remaining institutions. As for the Small Business Lending Fund, all CPP institutions were allowed to transition to this program if they had missed at most one dividend payment (hence, could not be eligible for a director appointment) and did not have more than 10 billion in assets. Excluding banks that exit the program in these two ways does not qualitatively affect the evidence presented in *Figure 7* (The main difference is that the decline in the non-eligible banks over time appears much steeper.) We also collect data on dividend payments by the banks in this program, some of whom were subject to regulations regarding the appointment of directors similar to those of CPP. However, out of 135 banks, only two miss any payments. Thus, we are unable to perform a "bunching" test along the lines of those presented in Section 4.1.

Hence, we estimate a 5.375 net “difference-in-difference” effect, significant at the 5% level ($t-$statistic$= 2.23$).

6 Conclusion

We have examined the CPP program under TARP, which allowed the U.S. government to bail out distressed banks by infusing equity capital in them. These capital infusions by the government addressed a major impediment to the recovery of these banks, namely elevated insolvency risk. An important feature of the CPP was a provision that allowed the government to put directors on the bank’s board in case the bank missed a certain number of dividend payments to Treasury. We argued that the usefulness of the provision in affecting bank behavior would depend on whether the government-appointed directors were “ceremonial” appointees or were directors who would flex their governance muscles. With the former possibility, bank CEOs would be undeterred by the governance intrusion and the prospect of having access to subsidized equity in a future distress state would worsen incentives. With the latter possibility, bank CEOs would be eager to avoid this corporate governance intrusion by the government. This means they would work hard to avoid it, by making the bank strong enough financially to make the dividend payments to Treasury. We find evidence that is consistent with this latter possibility.

We then ask whether the threat of director appointments influences banks’ incentives to accumulate capital. To address this question, we examine the evolution of banks’ capital ratios after the announcement that Treasury had decided against making further director appointments on the boards of eligible banks. We find that banks that were not eligible for director appointments at the time of the announcement, and thus had the strongest incentives to keep making dividend payments, exhibit an economically meaningful drop in their level of capital ratios, whether we measure it using the leverage ratio, the risk-based capital ratio, or the tier 1 capital ratio. Thus, the threat of director appointments leads banks to hold more capital.

Another tool for the government to improve the incentives of bank managers is to use its directors to create the perception that the CEO would be fired in case the bank was not being managed “appropriately”. We show that the firing of Vikram Pandit at Citicorp actually appeared to serve this purpose, as it induced a sharp exodus of banks from the CPP. This exit was enabled by banks buying out the government’s equity stake, which meant that private equity was infused to replace the government’s investment. Consequently, this ended up being an effective device to get banks to recapitalize and ensure that the government’s investment was limited in duration.

We also document that the appointment of government directors was associated with an improvement in bank profitability and a lowering of earnings management, nonperforming loans, and CEO pay. These findings suggest the need for theories that provide conditions under which the kind of bailout mechanism used by the CPP is indeed the optimal mechanism to deal with the ex ante and ex post moral hazard created by the bailout. More generally, these theories could shed light on how the government, taking as a given the inevitability of bailouts during serious financial crises, could design these interventions to minimize their costs while coping with moral hazard.

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7 Figures

Figure 1
A Numerical Example

Figure 1 shows values for $1 - e_n^*$, the probability of missing a dividend payment conditional on having missed n payments, as implied by the model presented in Section 3.1. Parameter values are the following: $B = 5$, $\beta = 0.5$, $N^* = 6$, $k = 6$ for the low k case, $k = 9$ for the medium k case, and $k = 18$ for the high k case. B identifies the managerial benefit of not having a Treasury director on the board, β is the discount rate, N^* is the number of missed payments that triggers the director appointment, and k is the parameter that, for a given managerial effort, affects the effort cost borne by the manager, $ke/2$ (where e is the probability of making a dividend payment).

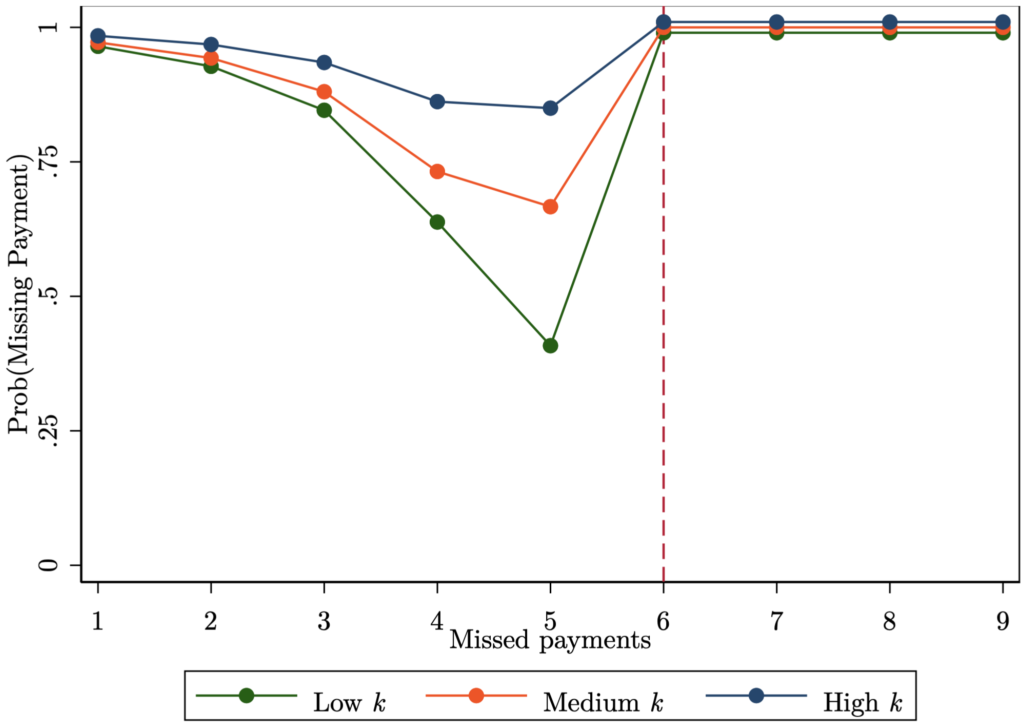


Figure 2
Distribution of Missed Dividend Payments

Figure 2 plots the distribution of missed dividend payments for 2,081 bank-quarter observations. Banks having 0 missed payments are excluded, leaving 195 banks that missed at least one dividend payment out of the 572 banks in the sample. The time coverage goes from May 2009 to October 2019.

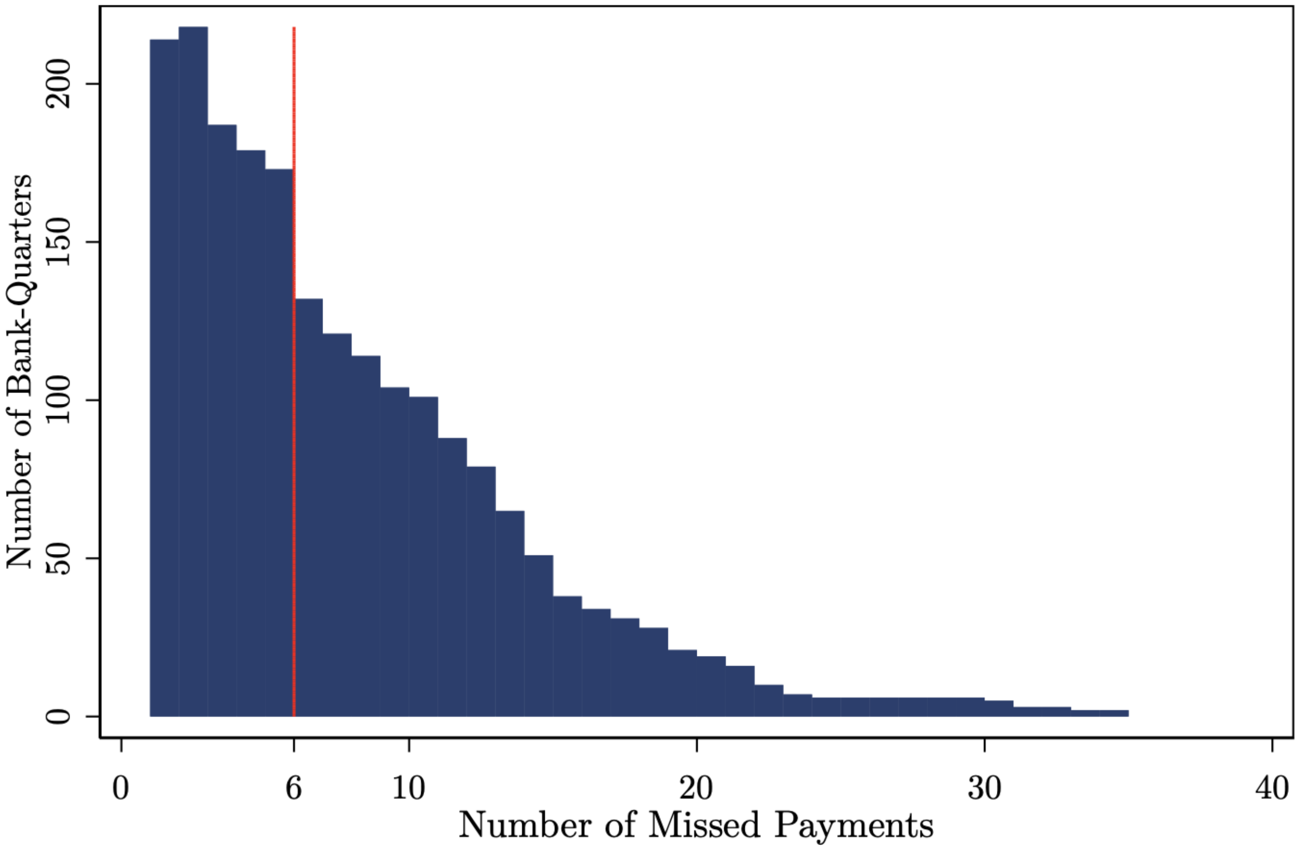


Figure 3

Missed Payments: Plot of OLS Coefficients

Figure 3 shows OLS coefficients and corresponding 95% confidence intervals obtained after regressing the quarter-to-quarter change in the number of missed dividend payments on dummies corresponding to the number of missed dividend payments. The sample consists of 572 banks, and the time coverage goes from May 2009 to October 2019. The value corresponding to the number j on the $x-$axis represents the coefficient β_j estimated on a dummy equal to 1 if the bank has j outstanding missed dividend payments. The coefficient corresponding to $j = 5$ is omitted. Banks with more than 10 missed dividend payments are binned together, and the coefficient on the corresponding dummy is the rightmost one. Standard errors are clustered at the bank level.

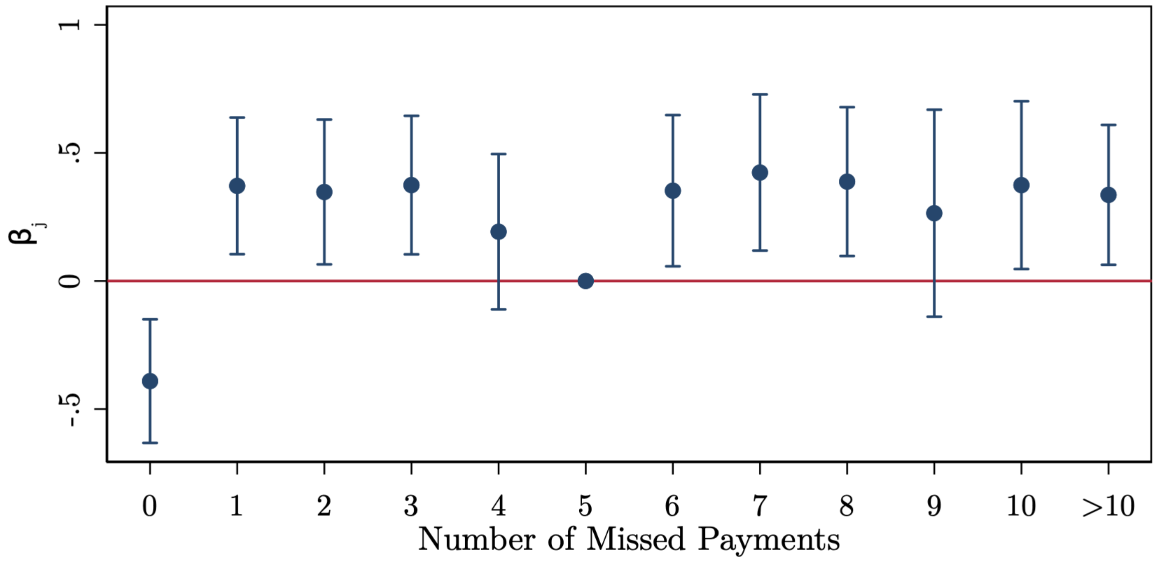
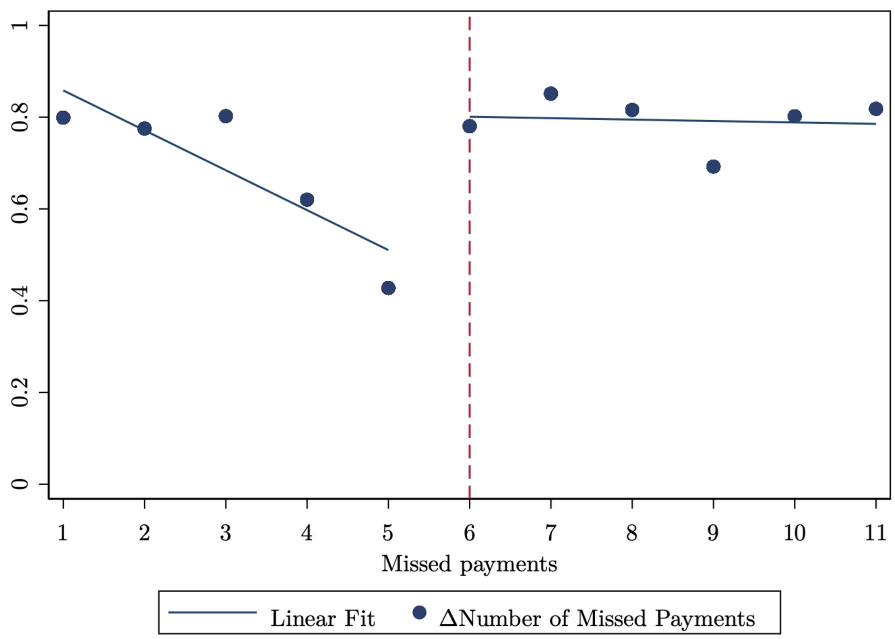


Figure 4
Change in Missed Payments: Polynomial Fits

Panels A and B of Figure 4 plot the quarter-to-quarter change in the number of missed dividend payments against the lagged number of missed payments. The sample consists of 572 banks, and the time coverage goes from May 2009 to October 2019. In Panels A and B, the blue lines fit linear and quadratic relationships, respectively, between the lagged number of missed payments and the change in missed payments, for banks with a number of missed payments between 1 and 5 (on the left) and between 6 and 11 (on the right).

Panel A. Linear Fit



Panel B. Quadratic Fit

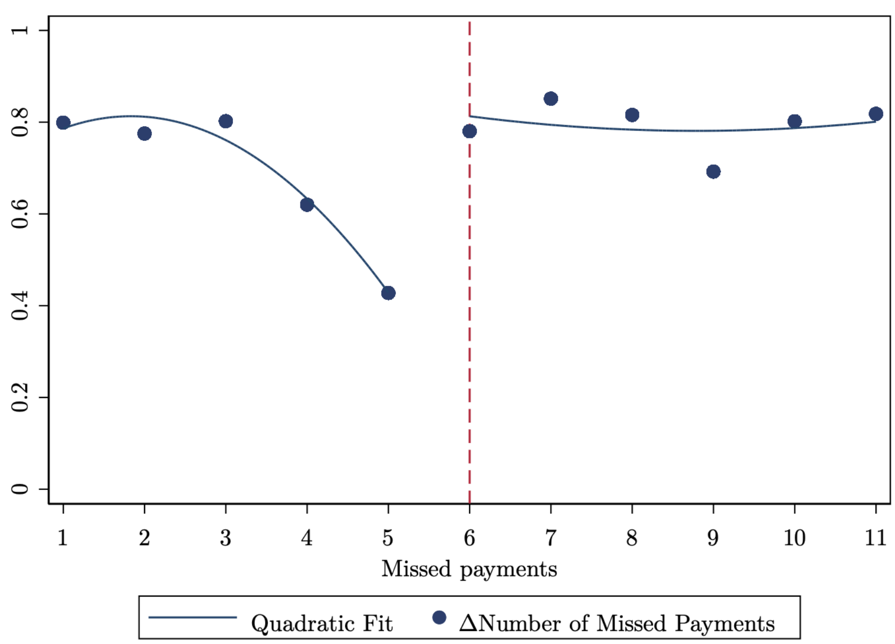
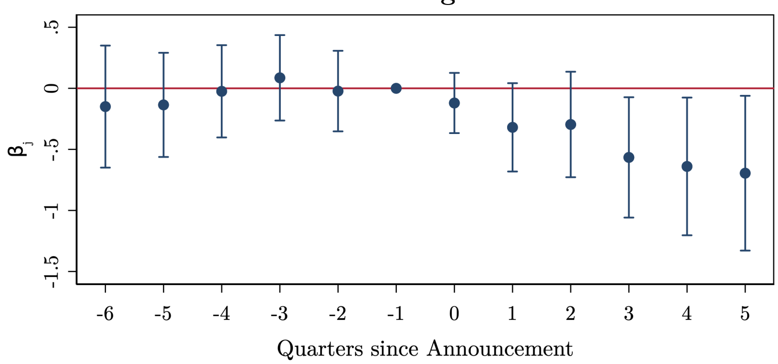


Figure 5

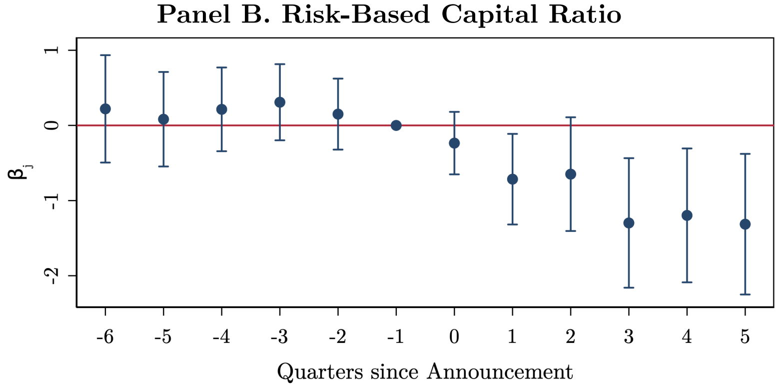
Threat of Director Appointments and Capital Ratios

Panels A, B, and C of Figure 5 present coefficients with corresponding 95% confidence intervals from event-study regressions. The dependent variable is regressed on firm fixed effects, a vector of dummies corresponding to the difference j between the event-quarter and the quarter of the observation, and the interaction of this vector with a dummy equal to one if a bank had missed less than six dividend payments as of the September, 2013. The plots report the coefficients β_js on these interaction terms. Standard errors are clustered at the bank-level. The dependent variables are the leverage ratio, the risk-based capital ratio, and the tier 1 capital ratio, in Panels A, B, and C, respectively. Leverage is defined as the Tier 1 capital as a percentage of adjusted average assets. Risk-based capital ratio is total regulatory capital as a percentage of risk-adjusted assets. Tier 1 capital ratio is core capital (Tier 1) as a percentage of risk-adjusted assets.

Panel A. Leverage Ratio



Panel B. Risk-Based Capital Ratio



Panel C. Tier 1 Capital Ratio

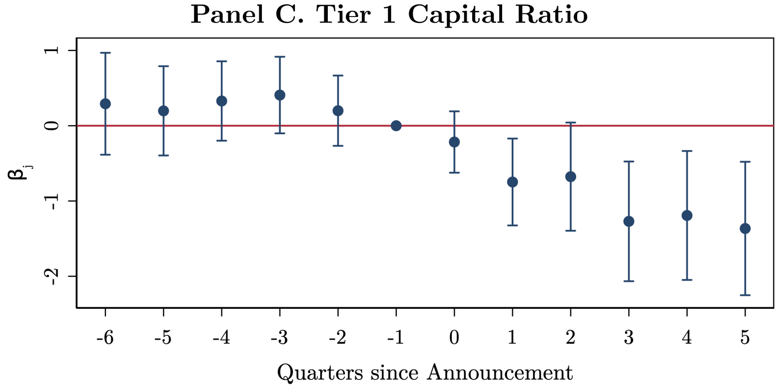


Figure 6
Event-Study Evidence

Panels A, B, C, and D of Figure 6 present the coefficients with their corresponding 95% confidence intervals from event-study regressions. A bank is "treated" if, at any point in time, it had a Treasury-appointed director. Every treated bank is matched with up to 4 control banks, matched on Log(revenues), leverage ratio, loans-to-deposits ratio, and a listed dummy. The dependent variable is regressed on firm and year fixed effects, a vector of dummies corresponding to the difference k between the event-year and the year of the observation, and the interaction of this vector with a "treated" dummy. The plots report the coefficients β_ks on these interaction terms. Standard errors are clustered at the bank-level. The dependent variables are NPLs/Loans (Panel A), ROA (Panel B), ROE (Panel C), and abnormal accruals (Panel D). NPLs/Loans represents nonaccrual and restructured loans as a percent of total loans and leases. ROA represents net income over average total assets in percentage points. ROE represents net income over average total equity in percentage points. Abnormal accruals correspond to the abnormal loss provision and are computed following Beatty, Ke and Petroni (2002).

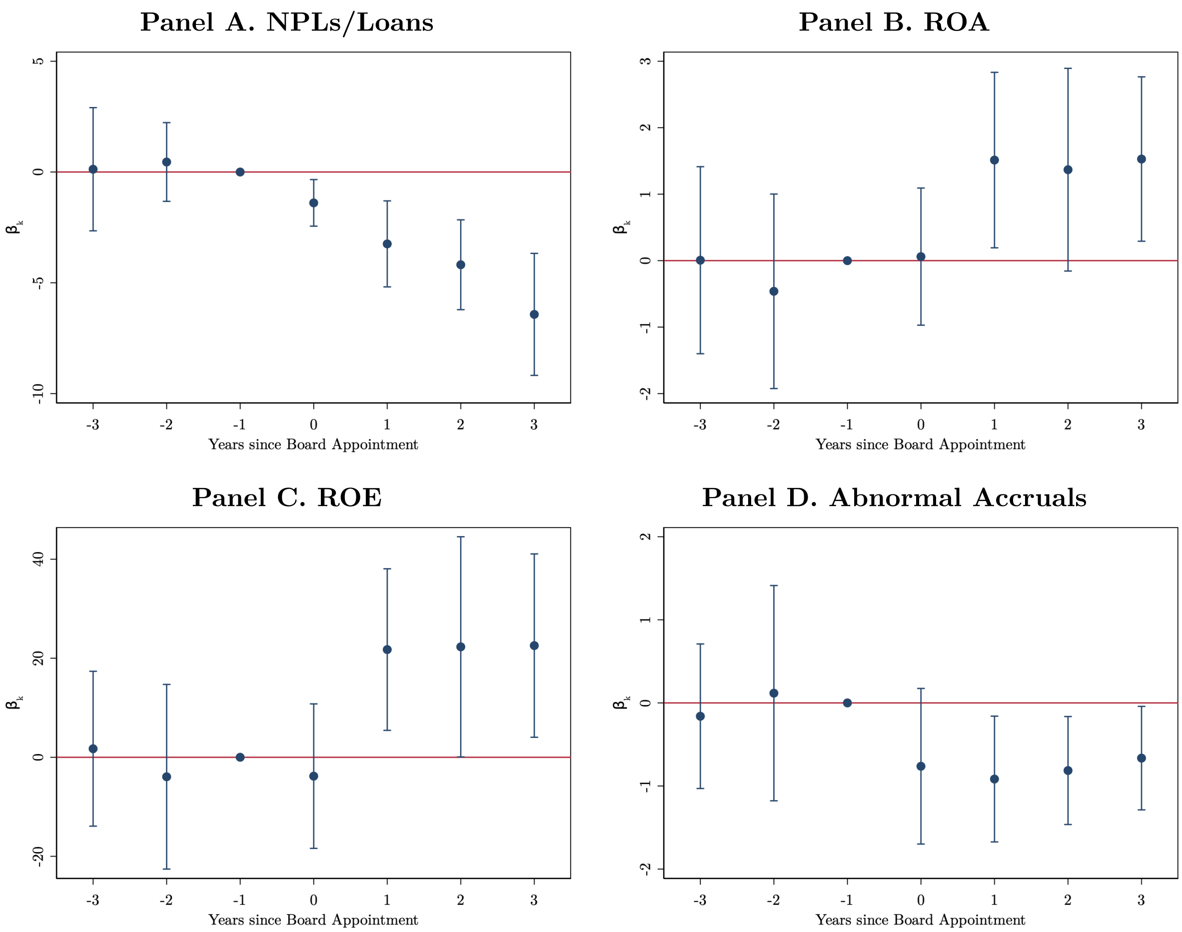


Figure 7

The "Pandit Shock": Number of Banks in the CPP

Table 7 shows the number of banks whose shares have not been auctioned and that did not transition to the Small Business Lending Fund that are still in the CPP at the end of each quarter. The figure displays the total number of banks (in green), the total number of banks eligible for a director appointment (in blue) and the total number of banks non-eligible for a director appointment (in red) between the last quarter of 2010 and the third quarter of 2013.

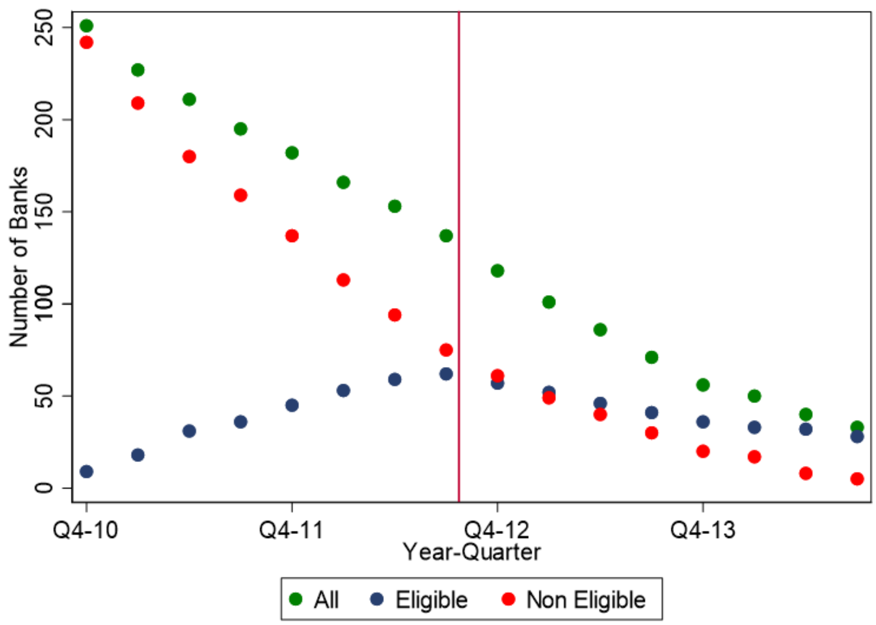
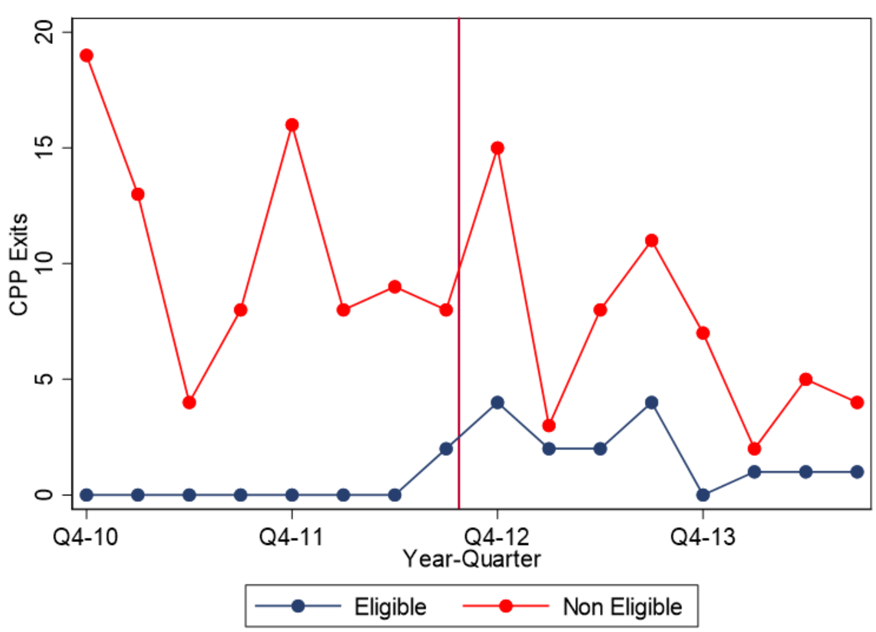


Figure 8

The "Pandit Shock": Exits from CPP

Figure 8 displays the number of bank exits from the CPP for each quarter between the last quarter of 2010 and the third quarter of 2013. The sample includes 157 exiting banks whose shares have not been auctioned and which did not transition to the Small Business Lending Fund. The red line plots the exits from banks that are not eligible for a director appointment; the blue line plots the exits from banks that are eligible for a director appointment.



8 Tables

Table 1
Descriptive Statistics

Table 1 has descriptive statistics (number of observations, mean, median, standard deviation, first, and 99^{th} percentile) for the main variables used in the paper. Panel A includes all 572 banks in the sample covering May 2009 to October 2019. Panel B only includes observations for the 195 banks that missed at least one dividend payment. Number of missed payments is the number of missed dividend payments at the end of the quarter. ΔMissed payments is the quarter-to-quarter change in missed dividend payments. Log(revenues) is the logarithm of the sum of net interest income, noninterest income, and gains on sales of securities. Leverage ratio is defined as the Tier 1 capital as a percentage of adjusted average assets. Risk-based capital ratio represents total regulatory capital as a percent of risk-adjusted assets in percentage points. Tier 1 capital ratio represents core capital (Tier 1) as a percent of risk-adjusted assets. Listed is an indicator variable for the company being publicly listed. ROA represents net income over average total assets in percentage points. ROE represents net income over average total equity in percentage points. NPLs/Loans is defined as nonaccrual and restructured loans as a percent of total loans and leases.

Panel A. Full Sample

	Obs.	Mean	Median	St. Dev.	Perc. 1	Perc. 99
Number of Missed Payments	6,832	2.32	0.00	4.83	0.00	21.00
ΔMissed Payments	6,832	0.25	0.00	0.72	0.00	1.00
Log(Revenues)	6,832	8.64	8.48	1.47	5.92	13.37
Leverage Ratio	6,832	9.14	9.21	2.77	2.00	15.82
Risk Based Capital Ratio	6,832	14.09	13.77	3.97	4.92	26.08
Tier 1 Risk Based Ratio	6,832	12.54	12.27	3.98	2.98	24.54
Loans/Deposits	6,832	85.38	85.77	21.65	48.23	120.62
Listed	6,832	0.46	0.00	0.50	0.00	1.00
ROA	6,832	-0.26	0.28	2.36	-10.30	2.80
ROE	6,809	-5.22	3.09	38.16	-160.37	36.83
NPLs/Loans	6,832	5.41	4.25	4.38	0.02	20.49

Panel B. Banks with at least 1 Missed Payment

	Obs.	Mean	Median	St. Dev.	Perc. 1	Perc. 99
Number of Missed Payments	2,081	7.61	6.00	6.02	1.00	29.00
ΔMissed Payments	2,081	0.74	1.00	1.14	-5.00	1.00
Log(Revenues)	2,081	8.26	8.18	1.17	5.68	11.52
Leverage Ratio	2,081	7.69	7.90	3.48	0.15	16.47
Risk Based Capital Ratio	2,081	12.66	12.56	5.01	0.43	29.62
Tier 1 Risk Based Ratio	2,081	11.08	11.11	5.06	0.22	28.25
Loans/Deposits	2,081	80.04	79.72	26.12	47.46	116.25
Listed	2,081	0.37	0.00	0.48	0.00	1.00
ROA	2,081	-0.86	0.00	2.84	-13.28	2.73
ROE	2,060	-16.48	0.09	58.11	-243.47	63.72
NPLs/Loans	2,081	8.47	7.38	5.47	0.20	23.76

Table 2
Baseline Results

Table 2 presents regressions where the dependent variable is the change in the number of missed dividend payments between quarter t and quarter $t-1$. The sample contains the 572 banks covering May 2009 to October 2019. Missed Payments$= n$ is a dummy equal to 1 if the bank has missed n payments at the end of quarter $t-1$; Missed Payments> 10 is a dummy equal to 1 if the bank has missed more than 10 payments at the end of quarter $t-1$. Columns 2 through 4 control for year-quarter fixed effects. Column 3 also controls for Log(revenues) and the leverage ratio. Column 4 also includes ROA, NPLs/Loans, risk-based capital ratio, tier 1 capital ratio, and Listed as control variables. Log(revenues) is the logarithm of the sum of net interest income, noninterest income, and gains on sales of securities. Leverage ratio is defined as the tier 1 capital as a percent of adjusted average assets. ROA represents net income over average total assets in percentage points. NPLs/Loans is defined as nonaccrual and restructured loans as a percent of total loans and leases. Risk-based capital ratio represents total regulatory capital as a percent of risk-adjusted assets in percentage points. Tier 1 capital ratio represents core capital (Tier 1) as a percent of risk-adjusted assets. Listed is an indicator variable for the company being publicly listed. The control variables are measured at the end of quarter $t-1$. Standard errors, in parentheses, are clustered at the bank level.

	(1)	(2)	(3)	(4)
Missed Payments=0	-0.391	-0.407	-0.349	-0.277
	(0.123)	(0.120)	(0.120)	(0.119)
Missed Payments=1	0.371	0.354	0.369	0.374
	(0.136)	(0.134)	(0.132)	(0.129)
Missed Payments=2	0.347	0.333	0.352	0.365
	(0.144)	(0.142)	(0.139)	(0.134)
Missed Payments=3	0.374	0.358	0.357	0.357
	(0.138)	(0.135)	(0.133)	(0.131)
Missed Payments=4	0.192	0.178	0.176	0.176
	(0.154)	(0.153)	(0.150)	(0.148)
Missed Payments=6	0.353	0.355	0.342	0.332
	(0.150)	(0.150)	(0.148)	(0.145)
Missed Payments=7	0.423	0.427	0.417	0.404
	(0.155)	(0.155)	(0.153)	(0.150)
Missed Payments=8	0.388	0.382	0.369	0.357
	(0.148)	(0.146)	(0.144)	(0.141)
Missed Payments=9	0.265	0.263	0.245	0.235
	(0.206)	(0.209)	(0.207)	(0.205)
Missed Payments=10	0.374	0.384	0.372	0.369
	(0.167)	(0.166)	(0.164)	(0.161)
Missed Payments>10	0.336	0.374	0.348	0.341
	(0.139)	(0.142)	(0.140)	(0.139)
Log(Revenues)			-0.016	-0.022
			(0.005)	(0.007)
Leverage Ratio			-0.025	-0.001
			(0.006)	(0.006)
ROA				-0.010
				(0.004)
NPLs/Loans				0.017
				(0.003)
Risk Based Capital Ratio				0.004
				(0.013)
Tier 1 Risk Based Ratio				-0.017
				(0.013)
Listed				-0.013
				(0.019)
Observations	6,832	6,832	6,832	6,832
R^2	0.206	0.210	0.219	0.229
Year-Quarter FE		X	X	X

Table 3
Polynomial Approximation

Table 3 presents regressions where the dependent variable is the change in the number of missed dividend payments between quarter t and quarter $t-1$. The sample consists of 572 banks, and the time coverage goes from May 2009 to October 2019. Missed payments≥ 6 is a dummy equal to 1 if the bank has missed at least 6 dividend payments by the end of the previous quarter. The regressions also include two first-order (columns 1 and 3) and second-order (columns 2 and 4) polynomials on the number of missed payments minus 6, separately estimated for banks below and above the six-missed-payments cutoff, interacted with the Missed Payments≥ 6 dummy. Columns 3 and 4 also include the following control variables: Log(revenues), leverage ratio, ROA, NPLs/Loans, risk-based capital ratio, tier 1 capital ratio, Listed, and year-quarter fixed effects. Log(revenues) is the logarithm of the sum of net interest income, noninterest income, and gains on sales of securities. Leverage ratio is defined as tier 1 capital as a percentage of adjusted average assets. ROA is net income over average total assets in percentage points. NPLs/Loans is defined as nonaccrual and restructured loans as a percentage of total loans and leases. Risk-based capital ratio is total regulatory capital as a percentage of risk-adjusted assets. Tier 1 capital ratio is core capital (Tier 1) as a percentage of risk-adjusted assets. Listed is an indicator variable for the company being publicly listed. The control variables are measured at the end of quarter $t-1$. Standard errors, in parentheses, are clustered at the bank level.

	(1)	(2)	(3)	(4)
Missed Payments ≥ 6	0.378	0.666	0.384	0.637
	(0.131)	(0.244)	(0.127)	(0.228)
Observations	1,631	1,631	1,629	1,629
R^2	0.010	0.013	0.055	0.057
Degree of Polynomial	1	2	1	2
Controls			X	X

Table 4

Polynomial Approximation – Cross-Sectional Heterogeneity

Table 4 presents regressions where the dependent variable is the change in the number of missed dividend payments between quarter t and quarter $t-1$. The sample consists of 572 banks, and the time coverage goes from May 2009 to October 2019. Missed payments≥ 6 is a dummy equal to 1 if the bank has missed at least 6 dividend payments by the end of the previous quarter. The regressions also include two second-order polynomials on the number of missed payments minus 6, separately estimated for banks below and above the six-missed-payments cutoff, interacted with the Missed Payments≥ 6 dummy. All the regressions include the following control variables: Log(revenues), leverage ratio, ROA, NPLs/Loans, risk-based capital ratio, tier 1 capital ratio, Listed, and year-quarter fixed effects. Log(revenues) is the logarithm of the sum of net interest income, noninterest income, and gains on sales of securities. Leverage ratio is defined as tier 1 capital as a percentage of adjusted average assets. ROA is net income over average total assets in percentage points. NPLs/Loans is defined as nonaccrual and restructured loans as a percentage of total loans and leases. Risk-based capital ratio is total regulatory capital as a percentage of risk-adjusted assets. Tier 1 capital ratio is core capital (Tier 1) as a percentage of risk-adjusted assets. Listed is an indicator variable for the company being publicly listed. The control variables are measured at the end of quarter $t-1$. Standard errors, in parentheses, are clustered at the bank level.

Sorting by:	NPLs/Loans		ROA		ROE	
	Low	High	Low	High	Low	High
	(1)	(2)	(3)	(4)	(5)	(6)
Missed Payments ≥ 6	1.242	0.065	0.231	0.894	0.313	0.903
	(0.385)	(0.230)	(0.250)	(0.338)	(0.244)	(0.340)
Observations	816	811	817	810	804	808
R^2	0.093	0.050	0.054	0.081	0.062	0.082
$\beta_{High} - \beta_{Low}$	-1.177		0.663		0.590	
S.E.	(0.449)		(0.414)		(0.412)	
Degree of Polynomial	2	2	2	2	2	2
Controls	X	X	X	X	X	X

Table 5
Threat of Director Appointments and Capital Ratios

Table 5 presents difference-in-differences regressions where the dependent variable is indicated on the top of each column. Missed< 6 is a dummy equal to 1 if a bank had missed less than six dividend payments as of September, 2013. Leverage is defined as the Tier 1 capital as a percentage of adjusted average assets. Risk-based capital ratio is total regulatory capital as a percentage of risk-adjusted assets. Tier 1 capital ratio is core capital (Tier 1) as a percentage of risk-adjusted assets. All the regressions include year and firm fixed effects. Standard errors, in parentheses, are clustered at the bank level.

Dependent Variable:	Leverage Ratio	Risk-Based C.R.	Tier 1 C.R.
	(1)	(2)	(3)
Post × Missed<6	-0.446	-1.131	-1.214
	(0.241)	(0.376)	(0.363)
Observations	1,773	1,773	1,773
R^2	0.879	0.874	0.886
Year FE	X	X	X
Firm FE	X	X	X

Table 6
Means of Key Variables for Treated and Control Banks

Table 6 presents $t-$tests computed under the null hypothesis that the means of the variables listed are equal for treated and control banks. The sample includes 58 banks. Each of the 12 banks receiving a Treasury-appointed director ("treated") is matched with at most four banks that have the closest propensity score ("control"), using the variables Log(revenues), leverage ratio, loans/deposits, and Listed as predictors of the director appointment (shown in Panel A). A maximum difference of 0.025 in the propensity scores is required. Panels B and C display analogous $t-$tests for the outcome variables and for the first difference of the outcome variables. Log(revenues) is defined as the logarithm of the sum of net interest income, noninterest income, and gains on sales of securities. The leverage ratio is the tier 1 capital as a percentage of adjusted average assets. Loans/deposits is defined as the ratio of total loans and leases (net of unearned income and gross of reserve) divided by total deposits. Listed is an indicator variable for the company being publicly listed. NPLs/loans is nonaccrual and restructured loans as a percentage of total loans and leases. ROA is defined as net income over average total assets in percentage points. ROE is net income over average total equity in percentage points. Risk-based capital ratio is defined as total regulatory capital as a percent of risk-adjusted assets in percentage points. Abnormal accruals are defined as abnormal loss provisions and are computed following Beatty, Ke and Petroni (2002). Turnover is defined as the fraction of board members replaced from the previous year. Log(compensation) is the logarithm of CEO total compensation. The matching variables are measured at the beginning of the appointment year. The first and second column report means for the four variables for treated and control banks, respectively. The third column reports the difference between the two means. The fourth column reports the $p-$value computed under the null hypothesis that the means are equal.

Panel A. Matched Variables

Variable	**Mean Treated**	**Mean Control**	**Treated – Control**	**p–value**
Log(Revenues)	10.821	10.834	–0.014	0.973
Leverage Ratio (%)	7.468	7.655	–0.187	0.754
Loans/ Deposits (%)	76.688	78.051	–1.363	0.723
Listed	0.750	0.717	0.033	0.822

Panel B. Outcome Variables

Variable	**Mean Treated**	**Mean Control**	**Treated – Control**	**p–value**
NPLs/Loans	9.674	5.740	3.934	0.006
ROA	–1.574	–0.376	–1.198	0.022
ROE	–20.150	–4.834	–15.316	0.015
Risk Based Capital Ratio	12.742	12.893	–0.151	0.854
Tier 1 Risk-based Ratio	10.872	11.138	–0.266	0.779
Abnormal Accruals	0.845	–0.058	0.902	0.038
Turnover	0.019	0.012	0.006	0.477
Log(Compensation)	13.038	13.482	–0.444	0.224

Panel C. First Difference of the Outcome Variables

Variable	**Mean Treated**	**Mean Control**	**Treated – Control**	**p–value**
ΔNPLs/Loans	0.064	0.485	–0.421	0.641
ΔROA	0.985	0.520	0.465	0.524
ΔROE	9.658	4.642	5.016	0.585
ΔRisk Based C. R.	0.347	0.149	0.198	0.746
ΔTier 1 Risk-based R.	0.227	0.068	0.158	0.806
ΔAbnormal Accruals	–0.598	–0.496	–0.101	0.877
ΔTurnover	–0.012	–0.000	–0.011	0.480
ΔLog(Compensation)	–0.163	0.189	–0.352	0.061

Table 7
Difference-in-Differences Results

Table 7 presents difference-in-differences regressions where the dependent variable is indicated on the top of each column. The sample includes 58 banks. Treated is a dummy equal to 1 if a bank had a Treasury-appointed director, and 0 otherwise. Every treated bank is matched with up to 4 control banks, matched on Log(revenues), leverage ratio, loans-to-deposits ratio, and a listed dummy. For treated banks, Post is a dummy equal to 1 in the year of the director appointment and in the following years. For control banks, it is a dummy equal to 1 in the year in which the matched treated bank has received a director appointment and in the following years. NPLs/loans is defined as nonaccrual and restructured loans as a percentage of total loans and leases. ROA is defined as net income over average total assets in percentage points. ROE is net income over average total equity in percentage points. Risk-based capital ratio is defined as total regulatory capital as a percentage of risk-adjusted assets. Tier 1 capital ratio is core capital (Tier 1) as a percentage of risk-adjusted assets. Abnormal accruals are defined as abnormal loss provisions and are computed following Beatty, Ke and Petroni (2002). All the regressions include year and firm fixed effects. Standard errors, in parentheses, are clustered at the bank level.

Dependent Variable:	NPLs/Loans	ROA	ROE	Risk-Based C.R.	Tier 1 C.R.	Abnormal Accruals
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated	-3.686	1.228	15.478	0.547	-0.004	-0.796
	(0.622)	(0.357)	(4.275)	(0.717)	(0.797)	(0.212)
Post	0.468	0.307	0.990	0.534	0.773	0.114
	(0.588)	(0.321)	(3.921)	(0.472)	(0.463)	(0.216)
Observations	381	381	380	381	381	362
R^2	0.765	0.553	0.541	0.624	0.610	0.492
Year FE	X	X	X	X	X	X
Firm FE	X	X	X	X	X	X

Table 8
Turnover and CEO Compensation

Table 8 presents difference-in-differences regressions where the dependent variables are either turnover (column 1) or the logarithm of CEO total compensation (columns 2 through 4). Treated is a dummy equal to 1 if a bank had a Treasury-appointed director, and 0 otherwise. Every treated bank is matched with up to 4 control banks, matched on Log(revenues), leverage ratio, loans-to-deposits ratio, and a listed dummy. For treated banks, Post is a dummy equal in the year of the director appointment and in the following years. For control banks, it is a dummy equal to 1 in the year in which the matched treated bank has received a director appointment and in the following years. Turnover is defined as the fraction of executives and board members that In CPP is a dummy equal to 1 if the bank is in the CPP. NPLs/loans is defined as nonaccrual and restructured loans as a percentage of total loans and leases. ROA is defined as net income over average total assets in percentage points. ROE is net income over average total equity in percentage points. All the regressions include year and firm fixed effects. Standard errors, in parentheses, are clustered at the bank level.

Dependent Variable:	Turnover	Log(Compensation)		
	(1)	(2)	(3)	(4)
Post × Treated	-0.012	-0.247	-0.377	-0.333
	(0.013)	(0.134)	(0.133)	(0.137)
Post	0.006	-0.160	-0.120	-0.131
	(0.007)	(0.171)	(0.169)	(0.171)
NPLs/Loans			-0.029	-0.027
			(0.020)	(0.019)
ROA			0.080	0.084
			(0.113)	(0.113)
ROE			-0.004	-0.004
			(0.009)	(0.009)
In CPP				-0.133
				(0.156)
Observations	377	215	214	214
R^2	0.307	0.910	0.912	0.913
Year FE	X	X	X	X
Firm FE	X	X	X	X

Table 9
Predicted Probability of Treasury Appointment

Table 9 presents probit estimates of director appointments by Treasury. The dependent variable is an indicator variable being 1 for banks where a director has been appointed by Treasury and 0 otherwise. The sample is a panel of banks eligible for board director appointments, i.e., that have missed six dividend payments. Log(revenues) is defined as the logarithm of the sum of net interest income, noninterest income, and gains on sales of securities. Leverage ratio is defined as the tier 1 capital as a percentage of adjusted average assets. Loans/deposits is the ratio of total loans and leases (net of unearned income and gross of reserve) divided by total deposits. Listed is an indicator variable for the company being publicly listed. Funds> $25 million is an indicator variable for receiving investment by Treasury larger than $25 Million. ROA is defined as net income over average total assets in percentage points. NPLs/loans is defined as nonaccrual and restructured loans as a percentage of total loans and leases. Risk-based capital ratio is defined as total regulatory capital as a percentage of risk-adjusted assets. Tier 1 capital ratio is core capital (Tier 1) as a percentage of risk-adjusted assets. Blue state is a dummy equal to one if the bank is headquartered in a state where Obama prevailed in the 2008 presidential election. Connected is a dummy equal to one if the bank is headquartered in a congressional district represented by a member of the House Committee on Financial Services. All the regressions include year-quarter fixed effects. Standard errors, in parentheses, are clustered at the bank level.

	(1)	(2)	(3)	(4)
Log(Revenues)	0.011	0.011	0.011	0.010
	(0.004)	(0.004)	(0.004)	(0.004)
Loans/Deposits	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Leverage Ratio	-0.001	-0.001	-0.000	-0.000
	(0.001)	(0.001)	(0.002)	(0.002)
Listed	0.004	0.004	0.004	0.004
	(0.005)	(0.005)	(0.004)	(0.004)
Funds > 25 million		0.000	-0.001	-0.001
		(0.007)	(0.006)	(0.006)
ROA			-0.001	-0.001
			(0.001)	(0.001)
NPLs/Loans			-0.000	0.000
			(0.000)	(0.000)
Risk-Based Capital Ratio			0.002	0.002
			(0.001)	(0.001)
Tier 1 Risk-Based Ratio			-0.002	-0.002
			(0.002)	(0.002)
Blue State				-0.002
				(0.004)
Connected				-0.003
				(0.006)
Observations	689	689	689	689
Pseudo R^2	0.209	0.209	0.222	0.224
Year FE	X	X	X	X

Table 10

The "Pandit Shock": Difference-in-Differences Analysis

Table 10 presents the average number of exits per quarter by splitting observations according to whether banks are eligible for a director appointment and whether an exit occurs before or after the fourth quarter of 2012. The sample includes 157 bank exits. The last column reports the difference between the first two columns, and the last row reports the difference between the first two rows. The cell at the bottom right corner of the table reports the "difference-in-differences" estimate. Heteroscedasticity-consistent standard errors are reported in parentheses.

	Before	**After**	**After − Before**
Not Eligible	10.625 (1.752)	6.875 (1.552)	-3.750 (2.340)
Eligible	0.250 (0.250)	1.875 (0.515)	**1.625** **(0.573)**
Eligible − Not Eligible	**-10.375** **(1.770)**	**-5.000** **(1.635)**	**5.375** **(2.410)**

For Online Publication

Appendices

In this appendix we present additional institutional details and results omitted from the main text for brevity. Appendix A1 proves Proposition 1 in the main text (see Section 3.1). Appendix A2 describes the various recapitalization programs included in TARP, and provides a detailed summary of the provisions of the CPP in *Table A1.* Appendix A3 has a list of all the appointments made by Treasury for each bank, with dates and director names. When available, the table also reports the committees the directors were part of at the time of the appointments.

Appendix A4 has additional empirical results. *Figure A1* is a bar chart of the funds invested by Treasury in the banks participating in the CPP in million dollars. Each bar's width is $0.1 million. For clarity, we truncate the distribution at $50 million. *Figure A2* plots the average of NPLs/Loans, ROA, and ROE, with corresponding 95% confidence intervals, for banks that have missed four, five, and six missed payments. *Figures A3* and *A4* plot the average change in missed payments against the missed payments at the beginning of the quarter. The first bar chart uses a "placebo sample." We first identify all the non-CPP banks that issued preferred shares during the time span of our analysis. We then count a "missed payment" if the bank still has outstanding preferred shares but does not make any payments on such shares. This sample includes 76 banks, 68 of which miss at least a payment. *Figure A5* plots the distribution of the year-quarters in which each bank has reached five missed dividend payments for the first time.

Figure A6 plots a quadratic fit of the relationship between the number of missed payments and the change in missed payments for banks with a number of missed payments between 1 and 5 (on the left) and between 6 and 11 (on the right). This relationship is displayed for several subsamples, where banks are sorted according to NPLs/Loans, ROA, and ROE.

Figure A7 shows OLS coefficients and corresponding 95% confidence intervals obtained after regressing the leverage ratio, the risk-based capital ratio, and the tier 1 capital ratio on dummies corresponding to the number of missed dividend payments.

Figure A8 presents event-study evidence on the effect board appointments made by Treasury on the risk-based capital ratio, the tier 1 capital ratio, and the logarithm of CEO compensation (see Sections 5.1, 5.2, and 5.3 for details).

Table A3 presents regressions where the dependent variables are the consensus earnings forecasts (columns 1 and 2) and the consensus buy/sell recommendations (columns 3 and 4). The consensus values are measured using either the average (columns 1 and 3) or the median (columns 2 and 4) of the earnings forecasts/recommendations and are obtained from the IBES "summary" file. We select the last value available in the calendar year preceding the board appointment. Earnings forecasts are scaled by the stock price five days prior to the consensus forecast date. To avoid the influence of extreme observations, we exclude banks with stock price below one dollar. Buy/sell recommendations are measured on a 1 (strong sell) to 5 (strong buy) scale. The Treated dummy is a dummy equal to one if the bank receives an appointment by Treasury. All the regressions control for match fixed effect, meaning that we include a dummy for each treated bank – control bank combination.

In *Table A4*, we show results along the lines of those presented in Section 5.2 (*Table 7*), using different procedures to select the control group for the banks eventually subject to a director appointment. In Panel A, we employ exactly the same matching procedure described in Section 5.1 but now use as potential control banks the entire universe of regulated financial institutions in SNL. As a result, the number of banks we are able to match increases, and our sample size ranges between 462 and 475, depending on the availability of the dependent variable. The results are quantitatively and qualitatively similar to those presented in the main text.

In Panel B, for every bank receiving an appointment by Treasury, the control group is restricted only to institutions that are also eligible for director appointments. This approach has the advantage of being the most conservative one. However, it also dramatically reduces the pool of potential control banks and, as a result, the statistical power of the tests. To increase the sample size, we include only size among the continuous variables we match on, increase the maximum difference in the propensity scores to 0.05, and consider a maximum of 6 banks as potential controls. Despite the substantial drop in sample size, which now ranges between 240 and 261 observations, we find that the coefficients in Columns 1, 2, and 3, where we analyze the effects on NPLs/loans, ROA, and ROE, are statistically significant and similar in magnitude to those found in the baseline tests. The effect on abnormal accruals (column 6) ceases to be statistically significant, even though the coefficient on the Post × Treated terms remain negative and economically large in magnitude.

In *Table A5* we restrict the set of potential control banks to those that had at some point been part of the CPP, as in the baseline analysis described in Section 5.2. However, we match not only on the four variables discussed in the main text (size, leverage, loans-to-deposits ratio, and the listed dummy) but also on the level of the outcome variable measured in the year prior to the director appointment. *Table A5* shows that results remain statistically significant and economically similar to those presented in *Table 7*. In the last two rows we also show the differences in the means of the outcome variables (again, measured in the year prior to the director appointment) with corresponding standard errors. All the differences are now not only insignificant but also economically small, with the exception of Column 3 (where the dependent variable is ROE). Hence, the effect of director appointments on performance is unlikely to be driven by mean reversion.

Figure A9 and *Table A6* present evidence on the stock market reaction to Treasury's director appointments. *Figure A9* plots buy-and-hold market-adjusted returns for 1, 2,..., 12 months following the appointment month, computed using the market model. *Table A6* presents regressions where the dependent variable is the bank's stock return at different horizons. In columns 1 through 4, the dependent variable is the cumulative abnormal return over a three-day window surrounding the announcement of the appointment of a director by the Treasury through an 8-K filing. In columns 5 through 8, the dependent variable is the 12-month buy-and-hold return, measured starting from the month following the appointment. The regressor of interest is a "treated" dummy equal to 1 for banks receiving a director appointment. The sample includes 19 banks at the intersection between the sample of 58 banks identified through the matching procedure described in Section 5.1 of the main text and the Center for Research in Security Prices (CRSP) database. We could not obtain 8-K filings for two banks; thus, the regressions in columns 1 through 4 only have 17 observations. All the regressions control for "match" fixed effects, i.e., a vector of dummies corresponding to each treated bank – matched bank combination. When indicated, control variables include the logarithm of market capitalization, the book to market ratio, and the lagged 12-month buy-and-hold return. Stock returns are adjusted using the market model in columns 1, 3, 5, and 7 and in the other columns using the Fama-French 3-factor model. We compute factor loadings using up to 36 monthly stock return observations prior to the appointment month. The factors have been downloaded from Kenneth French's website[50].

In *Figure A10* and *Table A7* we examine the market reaction to the director appointment threat. We take

50. See `https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html`.

advantage of the fact that prior to the first director appointments there was arguably still some uncertainty regarding whether Treasury would ultimately exercise its right[51]. This uncertainty was resolved with the announcement of the first appointments: On July 19, 2011, Treasury made three appointments on the boards of two banks, Royal Bancshares of Pennsylvania and First Banks[52]. We hypothesize that this announcement was perceived by investors as a credible signal that Treasury was committed to exercise its right, and that further appointments would follow.

We then divide CPP banks in two groups. As shown in Section 4.1, banks with no missed payments are very likely to keep making the required payments, so they face a low probability of appointment. Conversely, once a bank starts missing payments, the likelihood of missing further payments, and of receiving a Treasury appointment, goes up. Hence, in our simple design the "treated" banks are those that have missed at least one payment. The control banks are in the CPP but have yet to miss any dividend payments. We also exclude from the treated group the two banks receiving the actual appointments, to isolate the effect of the *prospect* of a future appointment to its actual occurrence. (As discussed above, banks subject to actual appointments are included in the analysis of *Table A6*.) Our final sample include 94 banks, 23 of which had missed at least one payment.

Figure A10 shows daily stock returns for the two groups of banks in the five days surrounding the announcement, adjusted using the market model. While we do not find an immediate reaction on the day of the announcement, there is a noticeable spike of over 3 percent the following day, consistent with investors attaching a positive value to the prospect of an announcement[53]. In *Table A7* we run a more formal analysis where we regress the three-day abnormal return on a dummy equal to one if the bank had missed at least one payment prior to the announcement. In columns 1 and 2, we find that these banks outperform the control group by 3.7–3.8%, independent of whether we adjust returns using the market model or the Fama-French three-factor model. In columns 3 and 4 we add the same control variables used in Section 4.1. The coefficients drop slightly, to 2.9–3.1%, but remain significant at the 10% level.

51. Indeed, we learned from conversations with Treasury officials that the director appointment covenant was introduced just to follow industry standards, but only when the first banks became eligible that they realized that they had to develop a selection procedure essentially from scratch.

52. More precisely, the two banks made the appointments on July 15 and July 13, respectively, but they disclosed them on July 19 through 8-K filings; on the the same date, Treasury made a press release concerning the appointments.

53. The time stamp of the banks' 8-Ks show that their releases had occurred in the afternoon, at approximately 2pm. We do not have a time stamp for the press release of Treasury, but we searched for articles mentioning the appointments on Factiva and Factset and found that all were released at approximately 7pm or later. This also helps explain why the market reaction is observed only the day after the appointments.

Appendix A1 Proof of Proposition 1

Let V_n the value function of a bank with n missed payments. Clearly, for $n \geq N^*$ the bank manager has no incentive to pay dividends, nor she can enjoy the private benefit; hence, $e_n^* = V_n^* = 0$ for all $n \geq N^*$. Now consider the problem of a manager that has missed $N^* - 1$ dividend payments. The value function can be written as:

$$V_{N^*-1} = e\beta(V_{N^*-1} + B) - k\frac{e^2}{2} \tag{A1}$$

The first-order condition implies:

$$\frac{\partial V_{N^*-1}}{\partial e} = 0 \Leftrightarrow e = \frac{\beta(V_{N^*-1} + B)}{k} \tag{A2}$$

By plugging expression (A2) into (A1), we obtain:

$$V_{N^*-1}^* = \frac{k - \sqrt{k}\sqrt{k - 4\beta^2 B}}{2\beta^2} - B \tag{A3}$$

and

$$e_{N^*-1}^* = \frac{k - \sqrt{k}\sqrt{k - 4\beta^2 B}}{2k\beta}. \tag{A4}$$

This value is a positive real number, as ensured by the assumption that $k > 4\beta^2 B$, and is lower than 1, as ensured by the assumption that $k > \beta B/(1-\beta)$. Equation (A1) also has a second root that, under the assumption that $k > \beta B/(1-\beta)$, implies that $e_{N^*-1}^* > 1$. Hence, the only economically sensible value for $e_{N^*-1}^*$ is the one in equation (A4).

Now consider a generic period $n < N^* - 1$. The value function can be written as:

$$V_n = B + e\beta V_n + (1-e)\beta V_{n+1}^* - k\frac{e^2}{2} \tag{A5}$$

The first-order conditions implies:

$$\frac{\partial V_n}{\partial e} = 0 \Leftrightarrow e = \frac{\beta(V_n - V_{n+1}^*)}{k} \tag{A6}$$

Plugging (A6) into (A5), and after some algebra, we obtain:

$$V_n^* = V_{n+1}^* + \frac{k - \sqrt{k}\sqrt{2V_{n+1}^*(1-\beta)\beta^2 + k - 2\beta^2 B}}{\beta^2} \tag{A7}$$

Notice that $V_{n+1}^* \geq 0$. To see that, notice that the manager could simply set $e^* = 0$ forever and achieve 0 utility. This observation, together with the assumption that $k > 4\beta^2 B$, ensures that the rightmost term under the square root is positive and, hence, the solution is well defined.

Also, notice that $V_{n+1}^* < B/(1-\beta)$. To see that, notice that $V_{n+1}^* = B/(1-\beta)$ is the value function of a manager that obtains the private benefit in every period with probability 1 but has an effort cost equal to 0, which is not achievable. Simple algebra shows that this upper bound on V_{n+1}^* implies that the ratio in equation (A7) is strictly positive, which further implies that $V_n^* > V_{n+1}^*$. Hence, V_n^* is decreasing in n.

We can plug expression (A7) into equation (A6) and find:

$$e_n^* = \frac{k - \sqrt{k}\sqrt{2V_{n+1}^*(1-\beta)\beta^2 + k - 2\beta^2 B}}{k\beta} \tag{A8}$$

The $B/(1-\beta)$ upper bound for V_{n+1}^* ensures that $e_n^* > 0$. Moreover, simple algebra shows that the assumption that $k > \beta B/(1-\beta)$ guarantees that $e_n^* < 1$. As before, the alternative root of equation (A7) implies a value for e_n^* greater than 1 and can thus be discarded.

e_n^* is decreasing in V_{n+1}^*, which is, in turn, decreasing in n. Hence, e_n^* is increasing in n. The probability that the bank with n missed payments will miss the next payment is given by $1 - e_n^*$. Thus, this probability is decreasing in n. ■

The values of e_n^* for $n < N^* - 1$ in *Figure 1* can be obtained starting from expression (A1), plugging it into expression (A7) to obtain the value of e_n^* from equation (A8), and so on for every n, recursively up until $n = 1$.

Appendix A2 Bank Recapitalization in the Troubled Asset Relief Program

After the financial crisis, the U.S. Treasury set up a series of recapitalization and stabilization programs for the U.S. economy under the Troubled Asset Relief Program (TARP). Within TARP, the programs that focused on recapitalizing banks were: the Capital Purchase Program (CPP), the Community Development Capital Initiative (CDCI), the Targeted Investment Program (TIP), and the Capital Assistance Program (CAP)[54].

TIP only funded Citigroup and Bank of America with a total of $40 billion in December 2008, which they paid back in 2009. The CDCI, on the other hand, focused on small institutions and funded banks with a total of only $570 million starting in 2010. The CPP was by far the largest and had a volume of around $205 billion, funding a total of 707 banks[54]. No funds were distributed under the CAP (see Calomiris and Khan (2015)). *Table A1* presents a schematic summary of the provision of the CPP, using additional information from the Term Sheets available at the Treasury's website[55].

54. See "Quarterly Report to Congress" from the Office of the Special Inspector General for the Troubled Assets Relief Program, October 26, 2010.
55. See:
`https://home.treasury.gov/data/troubled-assets-relief-program/bank-investment-programs/cap/related-resources`

Table A1
Capital Purchase Program Summary

Table A1 summarizes the provisions of the Capital Purchase Program.

Type of Security	**Preferred shares**	**Preferred shares**	**Subordinated debt**
Payment Type	Cumulative	Non-Cumulative	Cumulative
Bank Type	Bank holding company, savings and loan holding company, mutual holding company subsidiary	Insured depository institution that is not controlled by a company	S-Corporation, Mutual holding Company, Mutual bank
Funding Amount	Up to 3% of total risk-weighted assets, but maximum amount $25 billion		
Dividend Rate	5% (after 5 years 9%)	5% (after 5 years 9%)	7.7% (after 5 years 9%)
Participants	569	86	52
Missed payment rules:			
1 Missed Payment	Common dividend payments prohibited until...		
	...all missed preferred dividends have been paid back	...current preferred dividend paid	...all missed interest payments have been paid back
3 Missed Payments	Enhanced monitoring by Treasury[b]		
5 Missed Payments	Treasury can *ask* for an observer to attend board meetings		
6 Missed Payments	Right to appoint of up to two board directors by Treasury until...		
	...all missed preferred dividends have been paid back	...four consecutive preferred dividends have been made	...all missed interest payments have been paid back
Compensation restrictions	golden parachutes restricted, bonus claw-backs requested, compensation tax deductibility capped at $500,000 (After February 2009, retention awards and bonuses prohibited, incentive compensation restricted[a], executive compensation capped at $500,000)		
Repayment	Until 3 years of participation only through issuance of new equity (After February 2009, restriction removed[a])		

[a] These provisions were implemented by the American Recovery and Reinvestment Act, which changed the provisions of the program retrospectively.

[b] These rules have been announced after the start of the program (see "Quarterly Report to Congress" from the Office of the Special Inspector General for the Troubled Assets Relief Program, October 26, 2010).

Appendix A3 Director Appointment Events

Table A2

Dates of U.S. Treasury's Appointments and Directors' Names

Table A2 lists appointment dates and names of directors appointed by the U.S. Treasury pursuant to missing six or more payments on CPP shares. The committee the director sat in the year of the appointment according to the proxy statement of the bank is shown in parenthesis after the name: Audit (A), Asset/Liability (A/L), Corporate Governance (CG), Compliance (CO), Compensation (CP), Loans (L), Risk (R), Funds Management (FM), and no information (n/a). The column Left? indicates when a director left the board, where "No" indicates the director was reported to be on the board at least one year after the exit from the CPP and "Yes" indicates that the director left the board before or within one year from the exit . We leave the cell blank whenever a bank leaves the program through a merger or a bankruptcy proceeding. The four banks at the bottom of the table are excluded from the analysis presented in Sections 5.2 and 5.3.

Bank Name	Date 1st Appointment	1st Director	Left?	Date 2st Appointment	2st Director	Left?
Royal Bancshares of Pennsylvania, Inc.	2011–07–19	Gerard M. Thomchick (CP)	No	2011–09–30	Wayne Huey, Jr.,	No
Centrue Financial Corporation	2011–09–21	Richard "Chan" Peterson	No	2012–04–25	Dennis Battles	No
Citizens Republic Bancorp, Inc.	2011–09–21	William M. Fenimore, Jr. (R)		2011–10–05	Madeleine L. Champion (A)	
PremierWest Bancorp	2011–12–20	Mary Carryer (A, FM)		2012–03–14	Bruce Currier (A, FM)	
First Security Group	2012–02–09	Robert Lane (A, CO, A/L, L)	No	2012–03–22	William Grant (A, CO, CP, CG)	No
Intervest Bancshares Corporation	2012–03–23	Susan Roth Katzke	No	2012–10–24	C. Wayne Crowell	No
Bridgeview Bancorp, Inc.	2012–04–19	James Kane (n/a)	No			
First Trust Corporation	2012–06–12	Randall Howard (n/a)	No	2012–08–06	Paul O'Connor (n/a)	No
Blue Valley Ban Corp	2012–09–12	James Gegg	No			
Citizens Bancshares Co.	2012–09–12	James Gegg	No			
Old Second Bancorp, Inc.	2012–11–8	Duane Suits (A)	No			
Northern States Financial Corporation	2012–12–14	P. David Kuhl (A)	Yes			
Not in Sample						
First Banks, Inc.	2011–07–19	John S. Poelker (A)	No	2011–07–19	Guy Rounsaville, Jr. (CP)	No
Anchor Bancorp	2011–10–03	Duane Morse (A)	Yes	2011–10–03	Leonard Rush (A)	Yes
Rogers Bancshares, Inc.	2012–01–09	Larry Mingledorff (n/a)				
Central Bancorp, Inc.	2014–02–06	Larry Mingledorff (n/a)		2014–02–06	Paul Clabuesch (n/a)	

Appendix A4 Additional Results

Figure A1
Distribution of Funds Invested in the CPP Program

Figure A1 plots the distribution of funds invested (in $million) in the CPP program for each bank. The distribution is truncated at $50 million, and each bar's width is $0.1 million.

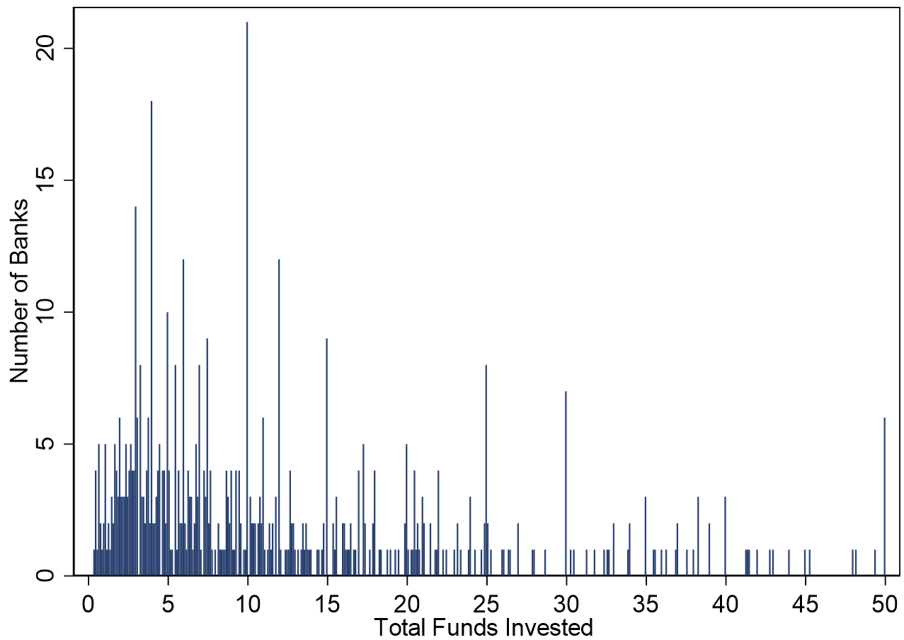


Figure A2
Bank Characteristics conditional on Missed Payments

Figure A2 plots the average of NPLs/Loans, ROA, and ROE, with corresponding 95% confidence intervals, for banks that have missed four, five, and six missed payments. NPLs/Loans represents nonaccrual and restructured loans as a percent of total loans and leases. ROA represents net income over average total assets in percentage points. ROE represents net income over average total equity in percentage points.

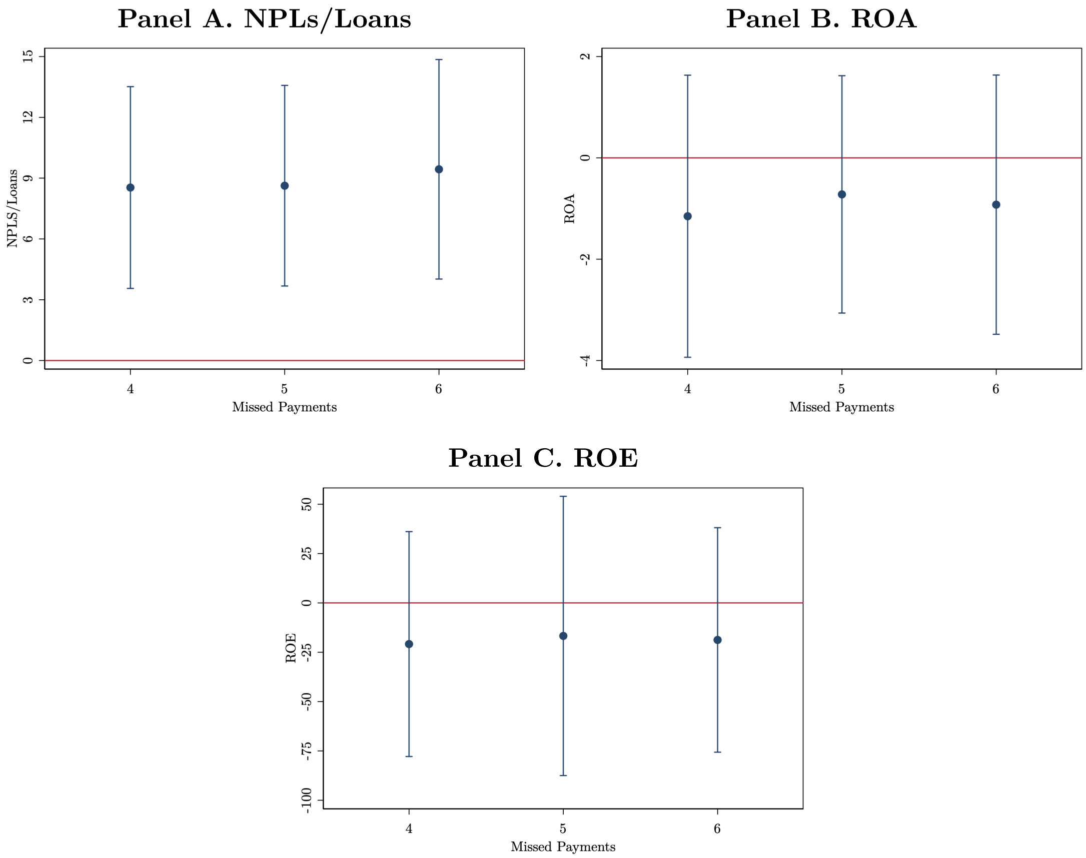


Figure A3

Conditional Distribution of Changes in Missed Dividend Payments (Placebo Sample)

Figure A3 shows the average quarter-to-quarter change in the number of missed dividend payments for the 68 banks with 1, 2, ..., 10, and more than 10 missed dividend payments at the end of the previous quarter that were not in the CPP and had nonzero preferred shares outstanding. Observations for banks having 0 missed payments at the end of the previous quarter are excluded. The time coverage goes from May 2009 to October 2019.

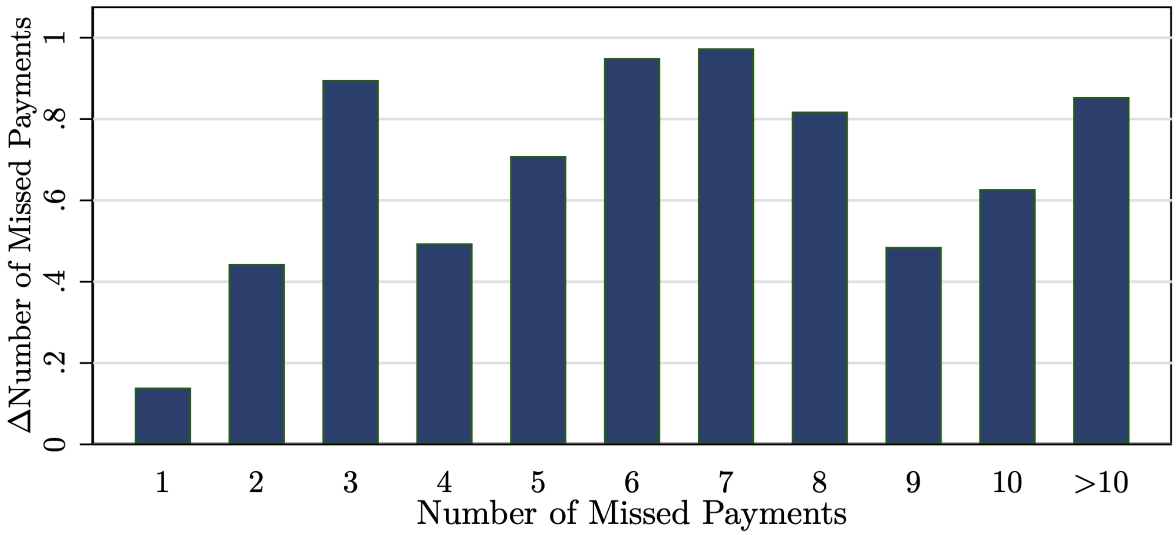


Figure A4

Conditional Distribution of Changes in Missed Dividend Payments

Figure A4 shows the average quarter-to-quarter change in the number of missed dividend payments for the 195 banks with 1, 2, ..., 10, and more than 10 missed dividend payments at the end of the previous quarter. Observations for banks having 0 missed payments at the end of the previous quarter are excluded. The time coverage goes from May 2009 to October 2019.

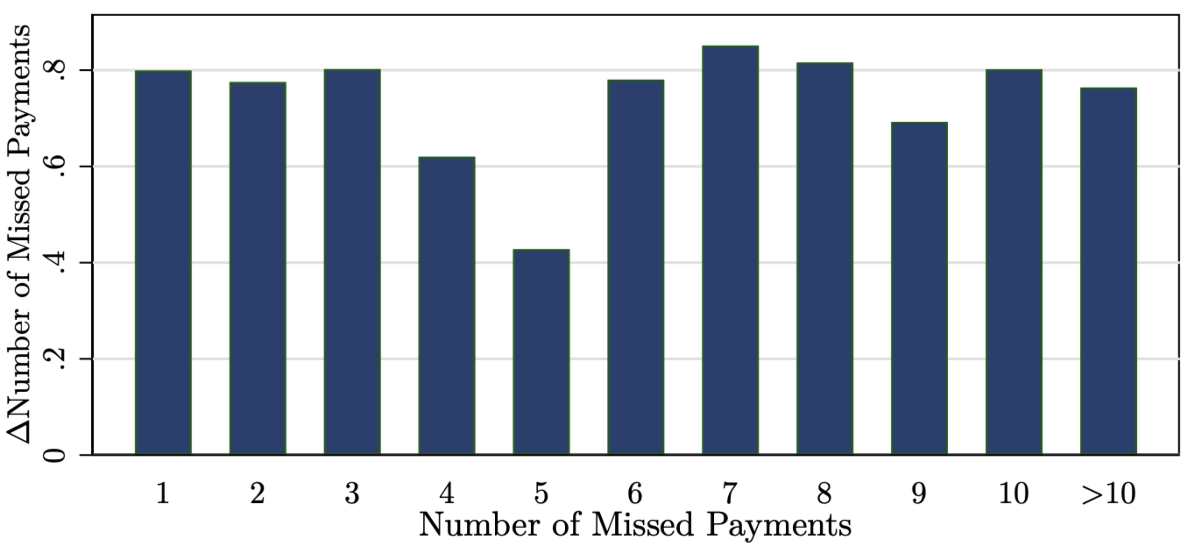


Figure A5
Timing of Missed Dividend Payments

Figure A5 plots the distribution of year-quarters in which each bank has reached five missed dividend payments for the first time.

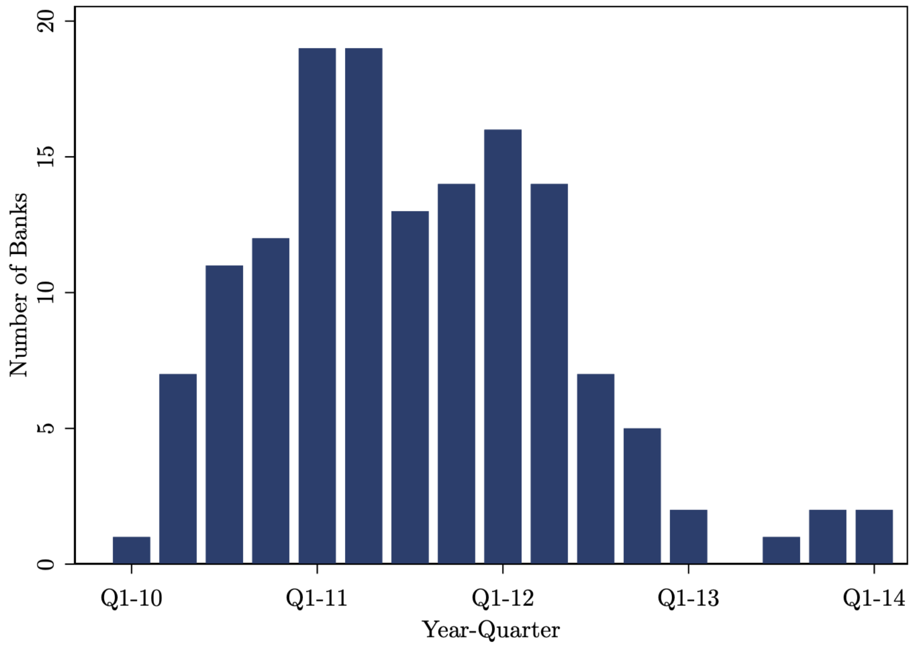
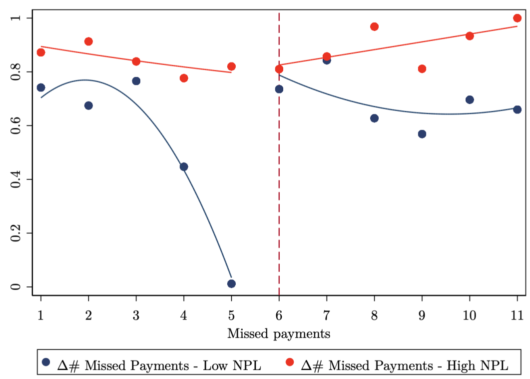


Figure A6

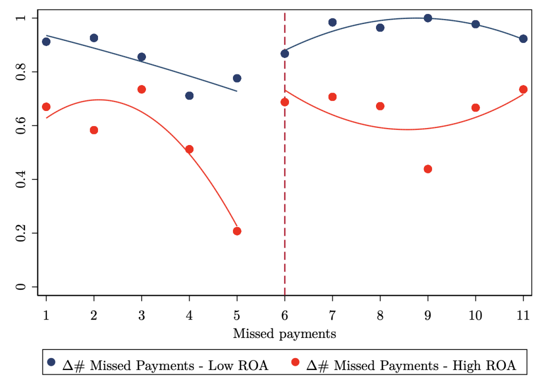
Polynomial Fits: Cross-Sectional Heterogeneity

Figure A6 plots the quarter-to-quarter change in the number of missed dividend payments against the lagged number of missed payments. The sample consists of 572 banks, and the time coverage goes from May 2009 to October 2019. In each panel, banks are sorted in two groups, depending on whether they have NPLs/Loans ratio (Panel A), ROA (Panel B), or ROE (Panel C) below or above the sample median in the previous quarter. For each panel and subgroups, the lines fit quadratic relationships between the number of missed payments and the change in missed payments, for banks with a number of missed payments between 1 and 5 (on the left) and between 6 and 11 (on the right). Markers and polynomial fits are in blue for the "Low" subsample and in red for the "High" subsample. NPLs/Loans represents nonaccrual and restructured loans as a percent of total loans and leases. ROA represents net income over average total assets in percentage points. ROE represents net income over average total equity in percentage points.

Panel A. Sorting by NPLs/Loans



Panel B. Sorting by ROA



Panel C. Sorting by ROE

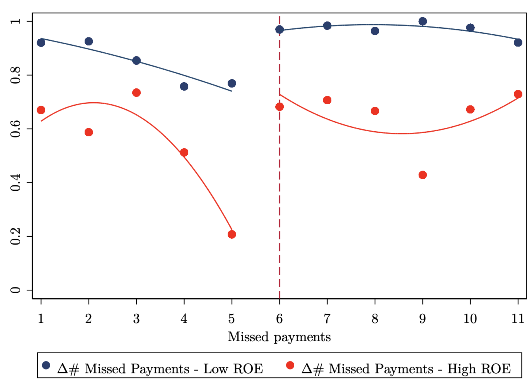
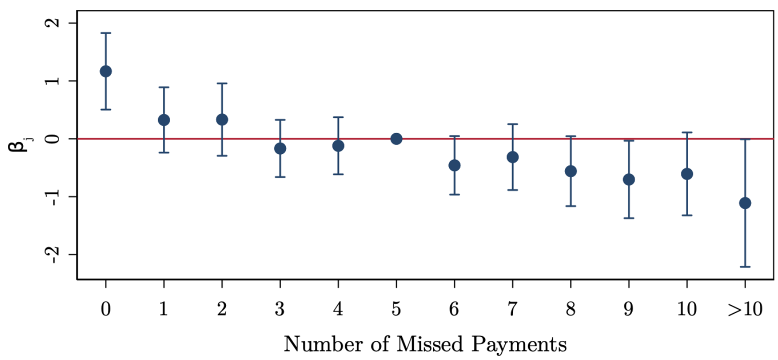


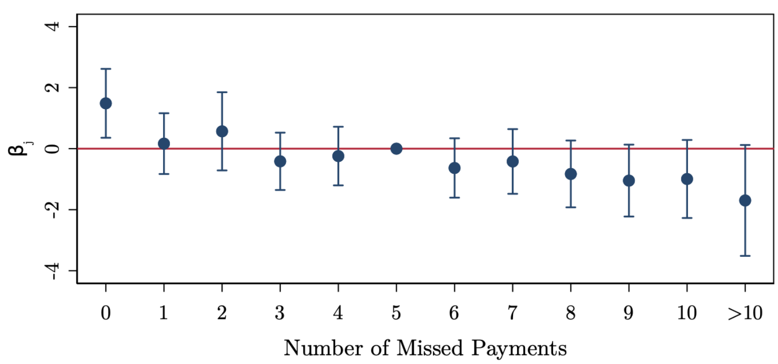
Figure A7
Capital Ratios and Missed Dividend Payments

Figure A7 shows OLS coefficients and corresponding 95% confidence intervals obtained after regressing the leverage ratio (Panel A), the risk-based capital ratio (Panel B), and the tier 1 capital ratio (Panel C) on dummies corresponding to the number of missed dividend payments. The value corresponding to the number j on the $x-$axis represents the coefficient β_j estimated on a dummy equal to 1 if the bank has j outstanding missed dividend payments. The coefficient corresponding to $j = 5$ is omitted. Banks with more than 10 missed dividend payments are binned together, and the coefficient on the corresponding dummy is the rightmost one. Standard errors are clustered at the bank level.

Panel A. Leverage Ratio



Panel B. Risk-Based Capital Ratio



Panel C. Tier 1 Capital Ratio

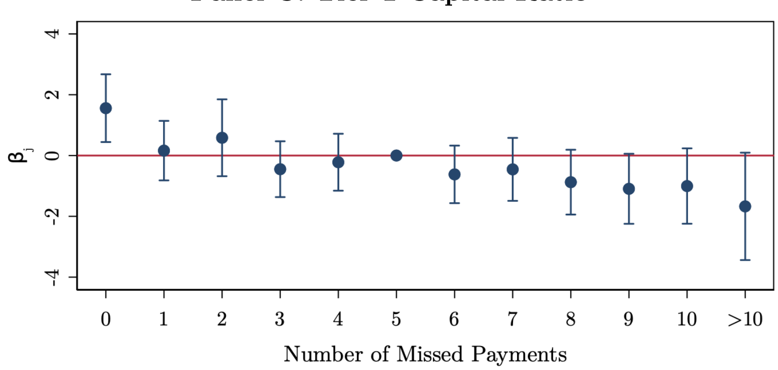
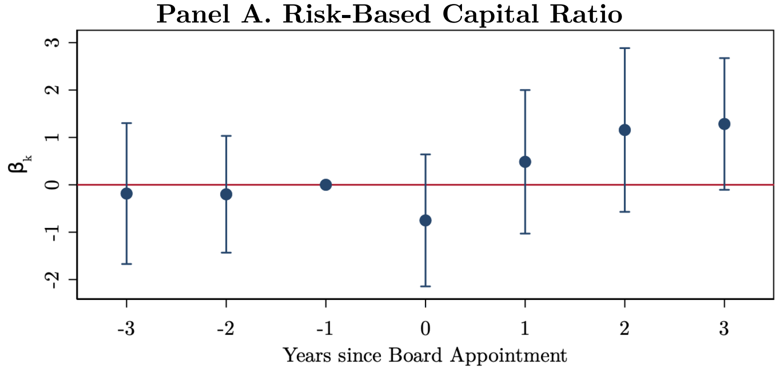


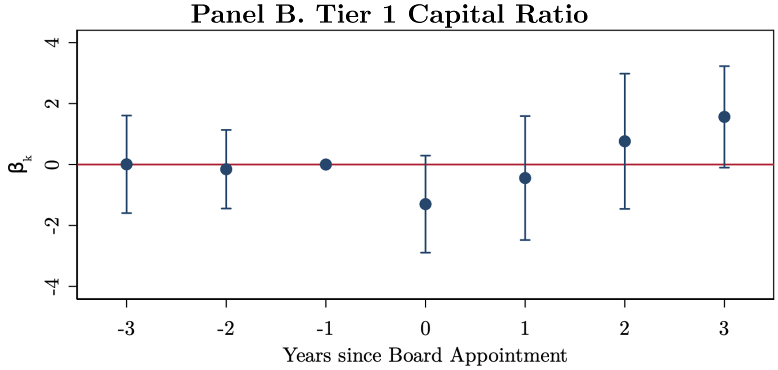
Figure A8
Event-Study Evidence: Risk-Based and Tier 1 Capital Ratios and CEO Compensation

Panels A and B of Figure A8 present coefficients with corresponding 95% confidence intervals from event-study regressions. A bank is "treated" if, at any point in time, it had a Treasury-appointed director. Every treated bank is matched with up to 4 control banks, matched on Log(revenues), leverage ratio, loans-to-deposits ratio, and a listed dummy. The dependent variable is regressed on firm fixed effects, a vector of dummies corresponding to the difference k between the event-year and the year of the observation, and the interaction of this vector with a "treated" dummy. The plots report the coefficients β_k on these interaction terms. Standard errors are clustered at the bank-level. The dependent variables are the risk-based capital ratio (Panel A), the tier 1 capital ratio (Panel B), and the logarithm of CEO compensation (Panel C). The risk-based capital ratio is defined as total regulatory capital as a percent of risk-adjusted assets. Tier 1 Capital Ratio represents core capital (Tier 1) as a percent of risk-adjusted assets.

Panel A. Risk-Based Capital Ratio



Panel B. Tier 1 Capital Ratio



Panel C. Log(Compensation)

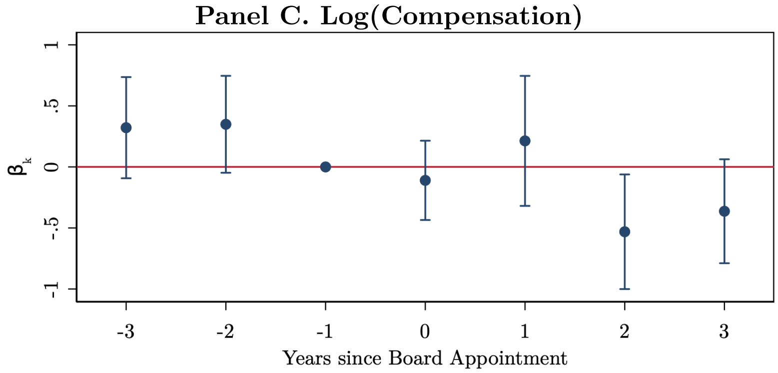


Table A3
Analyst Forecasts and Recommendations

Table A3 presents regressions where the dependent variables are consensus analyst earnings forecasts (columns 1 and 2) and buy/sell recommendations (columns 3 and 4). In columns 1 and 3 the consensus is measured using the mean forecast or recommendation; in columns 2 and 4 it is measured using the median value. Earnings forecasts are scaled by the stock price five days prior to the consensus forecast date. Buy/sell recommendations are measured on a 1 (strong sell) to 5 (strong buy) scale. The Treated dummy is a dummy equal to one if the bank receives an appointment by Treasury. All the regressions include match fixed effects. Heteroscedasticity-consistent standard errors are reported in parentheses.

Dependent Variable:	Earnings Forecast		Recommendation	
	Mean	Median	Mean	Median
	(1)	(2)	(3)	(4)
Treated	-0.258	-0.258	0.281	0.143
	(0.262)	(0.262)	(0.523)	(0.726)
Observations	14	14	12	12
R^2	0.848	0.852	0.853	0.560
Match FE	X	X	X	X

Table A4
Difference-in-Differences Results: Alternative Samples

Table A4 presents difference-in-differences regressions where the dependent variable is indicated on the top of each column. Treated is a dummy equal to 1 if a bank had a Treasury-appointed director, and 0 otherwise. Every treated bank is matched with up to 4 control banks. In Panel A, banks are matched based on Log(revenues), leverage ratio, loans-to-deposits ratio, and a listed dummy. In Panel B, they are matched based on Log(revenues), a listed dummy, and a dummy equal to 1 if the funding amount provided by Treasury was higher than $25 million. Panel A includes all the regulated institutions in the SNL database; Panel B includes only banks eligible for a director appointment. For treated banks, Post is a dummy equal to 1 in the year of the director appointment and in the following years. For control banks, it is a dummy equal to 1 after the matched treated bank has received a director appointment and 0 afterwards. NPLs/loans is defined as nonaccrual and restructured loans as a percentage of total loans and leases. ROA is defined as net income over average total assets in percentage points. ROE is net income over average total equity in percentage points. Risk-based capital ratio is defined as total regulatory capital as a percentage of risk-adjusted assets. Tier 1 capital ratio is core capital (Tier 1) as a percent of risk-adjusted assets. Abnormal accruals are abnormal loss provisions and are computed following Beatty, Ke and Petroni (2002). All the regressions include year and bank fixed effects. Standard errors, in parentheses, are clustered at the bank level.

Panel A. Full Sample

Dependent Variable:	NPLs/Loans	ROA	ROE	Risk-Based C.R.	Tier 1 C.R.	Abnormal Accruals
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated	-3.004	1.505	16.245	-0.464	-0.961	-0.710
	(0.567)	(0.345)	(5.157)	(0.719)	(0.758)	(0.189)
Post	0.163	-0.287	-1.616	-0.713	-0.426	-0.124
	(0.708)	(0.358)	(4.875)	(0.533)	(0.518)	(0.231)
Observations	475	474	472	475	475	462
R^2	0.705	0.494	0.434	0.665	0.675	0.442
Year FE	X	X	X	X	X	X
Firm FE	X	X	X	X	X	X

Panel B. Only Eligible Banks

Dependent Variable:	NPLs/Loans	ROA	ROE	Risk-Based C.R.	Tier 1 C.R.	Abnormal Accruals
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated	-4.614	0.988	12.073	-0.192	-0.603	-0.350
	(0.919)	(0.333)	(4.934)	(0.909)	(0.958)	(0.217)
Post	4.182	-0.370	-12.540	-0.295	0.030	-0.489
	(1.483)	(0.898)	(13.663)	(0.756)	(0.877)	(0.459)
Observations	261	261	261	261	261	240
R^2	0.735	0.497	0.436	0.692	0.689	0.396
Year FE	X	X	X	X	X	X
Firm FE	X	X	X	X	X	X

Table A5
Difference-in-Differences Results: Matching on Outcomes

Table A5 presents difference-in-differences regressions where the dependent variable is indicated on the top of each column. Treated is a dummy equal to 1 if a bank had a Treasury-appointed director, and 0 otherwise. Every treated bank is matched with up to 4 control banks, matched on Log(revenues), leverage ratio, loans-to-deposits ratio, and a listed dummy. In addition, banks are also matched based on the value of the outcome variable (indicated at the top of each column) in the year prior to the event. For treated banks, Post is a dummy equal to 1 in the year of the director appointment and in the following years. For control banks, it is a dummy equal to 1 in the year in which the matched treated bank has received a director appointment and in the following years. NPLs/loans is defined as nonaccrual and restructured loans as a percentage of total loans and leases. ROA is defined as net income over average total assets in percentage points. ROE is net income over average total equity in percentage points. Risk-based capital ratio is defined as total regulatory capital as a percentage of risk-adjusted assets. Tier 1 capital ratio is core capital (Tier 1) as a percentage of risk-adjusted assets. Abnormal accruals are defined as abnormal loss provisions and are computed following Beatty, Ke and Petroni (2002). All the regressions include year and firm fixed effects. The last two rows report average differences, with standard errors in parentheses, of the mean of the outcome variables for treated and control banks, measured in the years prior to the events. Standard errors, in parentheses, are clustered at the bank level.

Dependent Variable:	NPLs/Loans	ROA	ROE	Risk-Based C.R.	Tier 1 C.R.	Abnormal Accruals
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated	-3.732	1.477	16.508	0.086	-0.395	-0.516
	(0.686)	(0.400)	(4.345)	(0.706)	(0.782)	(0.196)
Post	1.032	-0.621	-2.522	0.111	0.663	-0.029
	(0.577)	(0.420)	(3.910)	(0.510)	(0.438)	(0.206)
Observations	319	394	366	391	372	349
R^2	0.732	0.503	0.500	0.647	0.624	0.474
Year FE	X	X	X	X	X	X
Firm FE	X	X	X	X	X	X
ΔDep. Var.	1.987	-0.462	-13.914	-1.009	-0.941	0.180
S.E.	(1.232)	(0.420)	(6.113)	(0.885)	(1.040)	(0.191)

Figure A9
Long-Run Returns

Figure A9 plots buy-and-hold 1, 2,...,12-month market-adjusted returns (i.e., net of the risk-free rate) for treated and control banks, where "treated" banks are those receiving a board appointment.

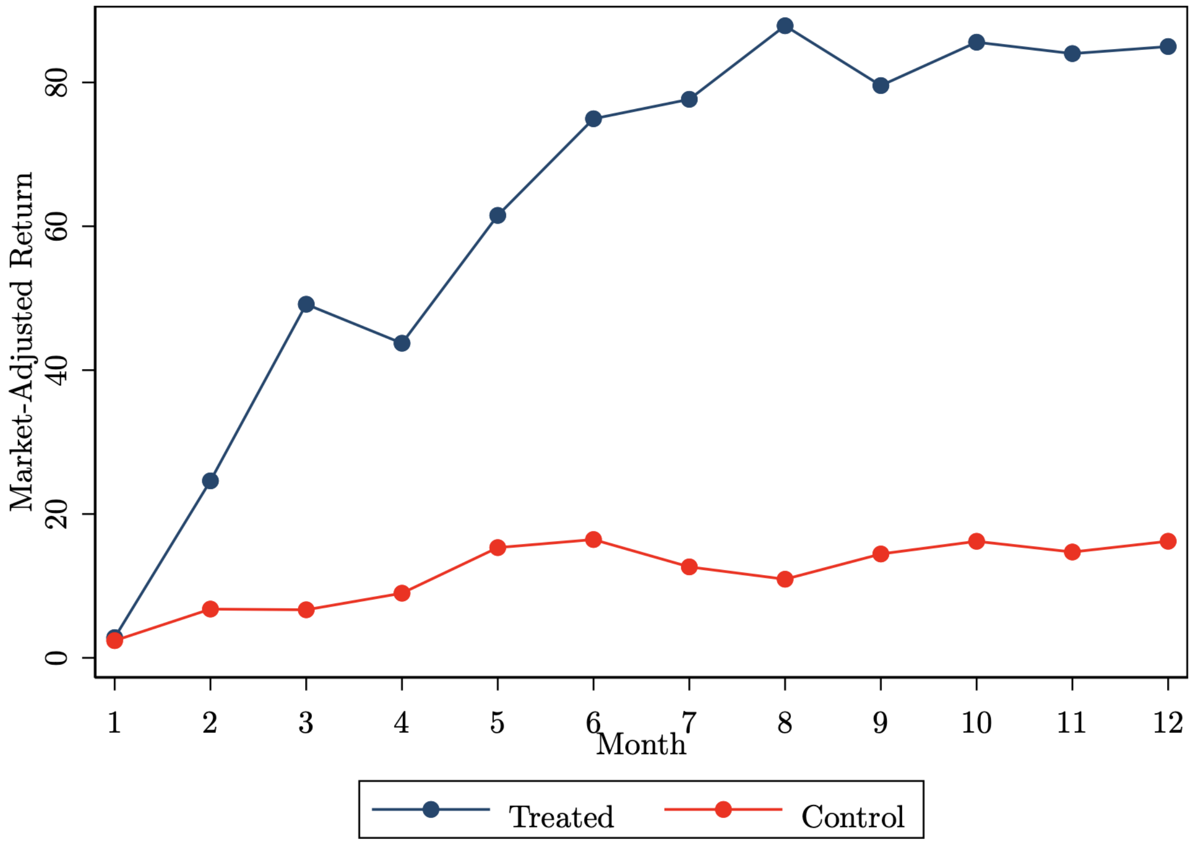


Table A6
Stock Market Response: Short and Long Run

Table A6 presents regressions where the dependent variables are stock returns at different horizons. In columns 1 through 4, the dependent variable is the cumulative abnormal return over a three-day window surrounding the announcement of the appointment of a director by Treasury through an 8-K filing. In columns 5 through 8, the dependent variable is the 12-month buy-and-hold return, measured starting from the month following the appointment. In columns 1, 3, 5, and 7, stock returns are adjusted using the market model and in the other columns using the Fama-French 3-factor model. When indicated, control variables include the logarithm of market capitalization, the book to market ratio, and the lagged 12-month buy-and-hold return. All the regressions include match fixed effects. Heteroscedasticity-consistent standard errors are reported in parentheses.

Window:	(Day -1, Day +1)				(Month +1, Month +12)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated	1.976	2.469	1.576	1.158	85.319	90.548	78.930	80.238
	(2.731)	(3.012)	(3.639)	(3.365)	(26.653)	(26.667)	(31.290)	(32.769)
Log(Capitalization)			0.634	0.317			-2.288	-2.424
			(0.663)	(0.597)			(4.044)	(4.152)
Book to Market			0.049	0.051			0.271	0.378
			(0.044)	(0.038)			(0.333)	(0.322)
$\text{Return}_{t-12,t-1}$			-0.033	-0.042			0.612	0.585
			(0.049)	(0.056)			(0.534)	(0.497)
Observations	17	17	17	17	19	19	19	19
R^2	0.303	0.357	0.544	0.615	0.708	0.736	0.781	0.812
Match FE	X	X	X	X	X	X	X	X
Return Adjustment	MM	FF	MM	FF	MM	FF	MM	FF

Figure A10
Announcement of the First Director Appointments:
Stock Market Reaction

Figure A10 plots the average daily stock return for firms that, at the time of the first announcement of the Treasury director appointments, had missed no dividend payments (in red) or had missed at least one payment (in blue). Returns are adjusted using the market model.

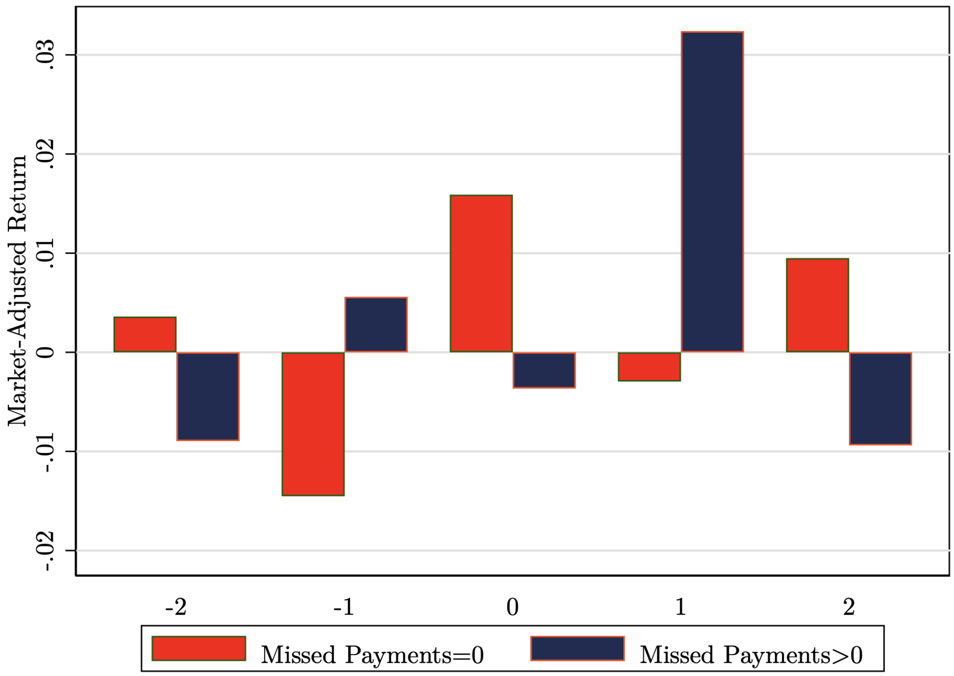


Table A7

Announcement of the First Director Appointments: Stock Market Reaction

Table A7 presents regressions where the dependent variable is the (-1,+1)-day stock market return computed over the announcement of the first director appointments made by Treasury. In columns 1 and 3 returns are adjusted using the market model. In columns 2 and 4 they are adjusted using the Fama-French 3-factor model. Columns 3 and 4 also include the following control variables: Log(revenues), leverage ratio, ROA, NPLs/Loans, and risk-based capital ratio. Log(revenues) is the logarithm of the sum of net interest income, noninterest income, and gains on sales of securities. Leverage ratio is defined as tier 1 capital as a percentage of adjusted average assets. ROA is net income over average total assets in percentage points. NPLs/Loans is defined as nonaccrual and restructured loans as a percentage of total loans and leases. Risk-based capital ratio is total regulatory capital as a percentage of risk-adjusted assets. Tier 1 capital ratio is core capital (Tier 1) as a percentage of risk-adjusted assets. Standard errors, in parentheses, are robust to heteroskedasticity.

	(1)	(2)	(3)	(4)
Missed Payments>0	0.038	0.037	0.029	0.031
	(0.015)	(0.015)	(0.016)	(0.017)
Observations	94	94	94	94
R^2	0.134	0.121	0.237	0.223
Return Adjustment	MM	FF	MM	FF
Controls			X	X