The Value of Regulators as Monitors: Evidence from Banking*

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Abstract

While conventional wisdom suggests that regulation is costly for shareholders, agency theory predicts a positive role of regulation in reducing shareholder monitoring costs. I study this tradeoff by exploiting an unexpected decrease in small-bank reporting requirements to the Federal Reserve using a regression discontinuity design. Using the reporting change as a negative shock to regulatory monitoring by the Fed, I find that reduced Fed monitoring leads to a 1% loss in Tobin's q and a 7% loss in equity market-to-book. I show that these losses come from increased internal monitoring expenditures, managerial rents, and monitoring conflicts between shareholders. My results are among the first to quantify the shareholder value of monitoring.

JEL Codes: G21, G28, G32.

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1 Introduction

A common view in the banking industry is that financial regulation has a negative impact on shareholder value: regulatory compliance subtracts resources from lending and deposit-making activities, reduces profits, and ultimately hurts investors. As a result, the recent decline of small and medium-sized banks in the United States has often been attributed to regulation, and regulatory burden reduction for small banks is now a priority on the agenda of the US Federal Reserve (the Fed). In a recent testimony to the House Financial Services Committee, the Chair of the Fed Board of Governors Janet Yellen stated: *"With respect to small and medium-sized banks, we must build on the steps we have already taken to ensure that they do not face undue regulatory burdens."*[1] While the current policy discussion highlights the costs of financial regulation for bank investors, agency theory suggests a positive role for regulation in reducing the costs incurred by shareholders to monitor bank mangement.

In this paper, I exploit the regulatory environment of US Bank Holding Companies (BHCs) to study the value impact of regulatory monitoring.[2] The US Federal Reserve (the Fed) is the primary regulator of BHCs, and a pervasive component of the Fed's monitoring activity is the collection and analysis of BHC financial statements. Both the frequency and the volume of BHC reporting to the Fed are based on a fixed asset size threshold, such that smaller BHCs falling below the threshold are exempted from most of the reporting requirements faced by larger BHCs above the threshold. I use a 2006 Fed policy raising this size threshold as a shock to regulatory monitoring, and study changes in bank value around the new threshold in a regression discontinuity design. My identification strategy comes from the quasi-random assignment of treated banks just below the threshold and control banks just above the threshold *before* the Fed implements its policy, such that any systematic value difference *after* the policy implementation is only due to differences in regulatory monitoring.

Following the predictions of agency theory, I interpret the change in Fed regulatory monitoring as a shock to shareholder monitoring costs. To provide a structure to my empirical tests, I build a stylized model of monitoring in the class of Townsend (1979), and derive three key predictions on the impact of monitoring costs on shareholder value. In the model, a manager has private incentives

[1] Yellen (2016).

[2] Even if a BHC can include more than one bank, I will use the two terms interchangeably in the rest of the paper.

to mis-report bank cash flows and a shareholder can pay a monitoring cost to verify the cash flows reported by the manager. When monitoring costs are small, the shareholder always monitors and extracts the entire surplus from the bank. As monitoring becomes more expensive (as for treated banks), shareholder value drops due to increased monitoring expenditures and increased managerial rents. The first model prediction is therefore that reduced regulatory monitoring should lead to shareholder value losses.

My main finding is consistent with the first prediction of the model: I show that, relative to control banks, treated banks experience a 1% decrease in Tobin's q (the market value of bank assets divided by the book value of bank assets) and a 7% decrease in Market-to-Book (the market-to-book value of bank equity) after the treatment. The finding is robust across a number of empirical specifications, sample restrictions, placebo tests, and falsification tests. For example, the treatment effect is stronger around the policy implementation date and threshold and disappears when I use arbitrary placebo dates and thresholds to separate treatment and control groups, reducing sample selection concerns. Moreover, my estimate of the treatment effect is not driven by pre-existing differences in valuation across treated and control groups, and it is not biased by pre-treatment size manipulation.[3] Importantly, the finding is not driven by changes in government bailout guarantees (Gandhi and Lustig (2015)), financial disclosure (Hutton, Marcus, and Tehranian (2009)), stock liquidity and volatility, and other size-based regulations implemented by the Fed at the beginning of 2006.

The second model prediction is that the value losses experienced by treated banks should be due to increased monitoring expenditures and increased managerial rents. In line with this prediction, I show that treated banks experience a 25% increase in their professional expenditures after the treatment. These professional expenditures are largely related to bank internal controls, and strongly correlated with post-treatment losses in shareholder value. Moreover, during the financial crisis banks below the policy implementation threshold engage in more aggressive earnings smoothing than banks above the threshold, confirming the prediction of increased managerial rents (Fudenberg and Tirole (1995)). Specifically, banks below the threshold decrease their Loan Loss Provisions (LLPs) by more than banks above the threshold, and these LLP changes are due to managerial discretion

[3] Reporting exemptions are based on June 2005 BHC assets, but the threshold change is first announced by the Fed only in November 2005. Additionally, McCrary (2008) tests show no evidence of pre-treatment asset size manipulation.

rather than to bank performance.

The third model prediction is that value losses and monitoring expenditures in treated banks should both be positively correlated with the risk of their unobservable cash flows. Intuitively, high cash flow risk increases the likelihood of tail states where cash flows are low or managerial rents are high, decreasing bank value and increasing the marginal value of monitoring. Empirically, I proxy the risk of unobservable cash flows with the absolute difference between analyst-forecasted and realized bank profitability. I find that treated banks with high cash flow risk experience larger value losses and professional expenditure growth than banks with low expected cash flow risk.

Finally, I argue that the increased monitoring costs faced by treated banks' shareholders increase their incentives to free-ride on each other's monitoring (Grossman and Hart (1980), Holmström (1982)). Consistent with Shleifer and Vishny (1986), the presence of a large shareholder—the board chairman—helps to mitigate shareholder free-riding problems after the treatment. I show that treated banks with high chairman ownership experience higher professional expenditure growth and larger value losses than treated banks with low chairman ownership. Moreover, post-treatment professional expenditure growth is more persistent and value drops are less persistent in banks with high chairman ownership.

Overall, my paper is among the first to quantify the shareholder value of monitoring. Quantitatively, I attribute around sixty percent of the loss in shareholder value for deregulated banks to increased monitoring expenditure and managerial rents, and I attribute around forty percent of the loss to increased free-riding problems. I conclude that regulation can be value-increasing for shareholders when regulators monitor the management. My results are potentially applicable to other heavily-regulated industries besides the banking industry, and provide new evidence against the standing consensus that financial regulation negatively affects bank shareholders.

Related Literature A long-standing question in financial economics is the extent to which monitoring affects shareholder value. Motivated by theoretical arguments (Shleifer and Vishny (1986), Kahn and Winton (1998), Maug (1998)), the literature has traditionally focused on institutional ownership as a measure of monitoring to estimate the impact of monitoring on firm value (McConnell and Servaes (1990), Ferreira and Matos (2008)). Causal inference is however difficult in these studies, because firm ownership and value are endogenously determined by firms' contracting environment (Himmelberg, Hubbard, and Palia (1999), Coles, Lemmon, and Meschke (2012)). My paper contributes to this literature by using a novel identification strategy to estimate a large and positive impact of monitoring on value. To the best of my knowledge, my paper is the first to test the predictions of a traditional class of monitoring models (Townsend (1979), Gale and Hellwig (1985)), and among the first to show that monitoring is valuable because it reduces managerial rent-seeking.[4]

Theoretical and emprical research shows that agency frictions are particularly severe in the context of banking. The risk profile of bank assets is difficult to observe by outsiders and easy to modify by insiders (Morgan (2002), Dang, Gorton, Holmström, and Ordonez (2017)), and deposit insurance gives bank lenders low incentives to monitor the management (Gorton and Pennacchi (1990)). Moreover, deposit insurance and other bank regulations might distort shareholder incentives to take risk (Merton (1977)), possibly in contrast with managerial preferences (Saunders, Strock, and Travlos (1990)). Previous empirical work has argued that agency frictions and managerial rent-seeking can have a negative impact on bank value (Laeven and Levine (2007), Goetz, Laeven, and Levine (2013)). My work provides causal evidence on the impact of agency frictions on bank value, and demonstrates regulatory monitoring as an effective tool to mitigate these frictions.

The recent crisis has stimulated academic interest in the costs and benefits of financial regulation. While many papers show that financial regulation is positively related to bank efficiency (Barth, Lin, Ma, Seade, and Song (2013)), and negatively related to bank risk-taking and failure (Agarwal, Lucca, Seru, and Trebbi (2014), Hirtle, Kovner, and Plosser (2016), Kandrac and Schlusche (2017)), a recent study by Buchak, Matvos, Piskorski, and Seru (2017) shows that bank regulatory burden is one of the main reasons for the raise of shadow banking. My paper adds to this literature by providing the first estimate of the value of monitoring by financial regulators.

[4] In this respect, my results are close to Bertrand and Mullainathan (2003), Kempf, Manconi, and Spalt (2016), and Schmidt and Fahlenbrach (2017), who focus on different outcome variables to show that monitoring reduces rent-seeking. Falato, Kadyrzhanova, and Lel (2014) show a positive impact of monitoring on firm value, but are silent about the specific mechanism through which monitoring increases value.

2 Institutional Background and Motivating Theory

The banking industry provides an ideal laboratory to study the impact of regulatory monitoring on shareholder value. A common view in the banking industry is that regulatory burden is particularly detrimental to bank profitability and value, and financial regulation is a commonly-cited reason for the decline of small banks in the United States. This view gained momentum among financial authorities since the Dodd-Frank Act of 2010, and small bank regulatory burden reduction is now an important priority on the policymaker's agenda (Yellen (2016)). While the costs and benefits of financial regulation are yet not fully understood, agency theory predicts that financial regulation can have a positive impact on bank value by reducing shareholder monitoring costs.

2.1 Institutional Background

The Bank Holding Company Act of 1956 broadly defines a BHC as any company that owns and/or has control over one or more banks. Commercial banks in the United States are not mandated to be part of a BHC structure. However, being part part of a BHC offers substantial benefits, such as increased flexibility in raising external financing and acquiring other banks, as well as the ability to acquire non-bank subsidiaries. In practice, these benefits are such that at the end of 2016 around eighty-four percent of commercial banks in the US were part of a BHC.[5]

The benefits of being part of a BHC come at the cost of compliance with the regulatory and supervisory requirements imposed by the Fed. From a regulatory standpoint, Regulation Y from 1980 gives the Fed exclusive jurisdiction in establishing BHC capital requirements, regulating BHC mergers and acquisitions, and defining and regulating non-banking activities performed by BHC subsidiaries. From a supervisory standpoint, Section 5 of the Bank Holding Company Act provides guidance for the off-site and on-site inspections regularly conducted by regional Fed officials under delegated authority from the Board.

The main information source for Fed off-site inspections is a set of financial statements collected and reviewed by the Fed on a regular basis. In practice, specialized teams of Fed officials focus on the analysis and cross-bank comparison of these statements to monitor the safety and soundness of

[5] https://www.fedpartnership.gov/bank-life-cycle/grow-shareholder-value/bank-holding-companies.

individual banks, and to identify potential threats to the financial system (Eisenbach, Haughwout, Hirtle, Kovner, Lucca, and Plosser (2017)). The process through which the Fed collects financial statements is different for large and small BHCs. Large BHCs need to file every quarter consolidated financial statements (form FR Y-9C) and holding parent company statements (FR Y-9LP) which contain detailed balance sheet, income statement, and off-balance sheet information about the bank's activity. To avoid reporting burden, the Fed allows smaller BHCs to only file an annual statement for the holding parent company (FR Y-9SP), such that small BHCs face substantially lower reporting requirements than large BHCs.

The Fed separates small and large reporting BHCs based on a fixed, bank-independent asset size threshold. From 1986 until the end of 2005, this size threshold was set to $150 million in total assets. In March 2006, the Fed implemented a regulation increasing the threshold to $500 million (regulation 71-FR-11194), therefore providing new reporting exemptions to all BHCs with assets between $150 and $500 million. I use this change in reporting requirements as a shock to the monitoring costs of deregulated banks' shareholders.

2.2 Predictions from Agency Theory

What kind of responses can be expected following a shock to shareholder monitoring costs? In this section I use the lens of a classic model of monitoring (Townsend (1979)) to derive three key testable predictions and provide structure to the empirical tests of the rest of the paper.

There are two agents in the model, a penniless manager and a shareholder with deep pockets. The manager and the shareholder are both risk-neutral, and the risk-free rate is zero. The manager has monopoly access to a project with cost I, which will generate a random cash flow $y \in \left[\underline{y}, \bar{y}\right] \subseteq \mathbb{R}_+$ with cdf F and pdf f at the end of the period. The project has positive NPV, which I denote by V_f:

$$V_f = \int_{\underline{y}}^{\bar{y}} y dF(y) - I > 0. \tag{1}$$

The manager costlessly observes the realized project cash flow, and must report the cash flow to shareholder. The manager can consume the difference between the realized cash flow and the cash flow that she reports to the shareholder, and therefore has an incentive to under-report to the shareholder. On the other hand, the shareholder can pay an audit cost k to perfectly observe the realized cash flow.

The shareholder has full bargaining power, and her problem is to maximize her expected profits while eliciting truthful cash flow revelation by the manager. Resorting to the revelation principle, I characterize contracts in which the manager always reveals the true cash flow. A contract is then a couple $\{\pi(y), m(y)\}$ that specifies payments from the manager to the shareholder $\pi(y) : \left[\underline{y}, \bar{y}\right] \rightarrow \mathbb{R}$ and monitoring decisions $m(y) : \left[\underline{y}, \bar{y}\right] \rightarrow \{0, 1\}$ as functions of the cash flow reported by the manager. I assume that audits are deterministic, in the sense that for all y, $m(y)$ is either 0 or 1. This partitions the set $\left[\underline{y}, \bar{y}\right]$ in a region where the shareholders always audits the manager and a region where the shareholder never audits the manager.

The shareholder maximizes her expected profits

$$\int_{\underline{y}}^{\bar{y}} \left[\pi(y) - m(y) k\right] dF(y) - I, \tag{2}$$

subject to the manager's participation constraint

$$\int_{\underline{y}}^{\bar{y}} \left[y - \pi(y)\right] dF(y) \quad \geq \quad 0, \tag{3}$$

the manager's limited liability constraint that, for all y,

$$y \quad \geq \quad \pi(y), \tag{4}$$

and the incentive-compatibility constraints ensuring that the manager always reveals the true cash flow. For the contract to be incentive-compatible, the following conditions must be verified. First, in the non-monitoring region the shareholder must always receive a constant payment P.[6] This allows to write the payment $\pi(y)$ as

$$\pi(y) \quad = \quad (1 - m(y)) P + m(y) \pi_1(y), \tag{5}$$

[6]If for some cash flow realization in the monitoring region the contract specifies a lower payment to the shareholder than for other realizations in the monitoring region, there is an incentive for the manager to report the cash flow associated with the lower payment.

where $\pi_1(y)$ is the payment in the monitoring region. Second, to prevent the manager to report cash flows in the non-monitoring region when the observed cash flow is in the monitoring region, it must be that

$$m(y)\,\pi_1(y) \quad \leq \quad P. \tag{6}$$

Constraints (5) and (6) characterize incentive-compatibility by the manager. The shareholder's problem then becomes finding $m(y)$ and $\pi_1(y)$ to maximize her expected profits, subject to constraints (3)-(6).

In the appendix, I solve for the optimal contract. As in Gale and Hellwig (1985), the optimal contract is such that the monitoring region is the low cash flow region for which $\pi(y) = y < P$, and the non-monitoring region is the high cash flow region for which $y \geq \pi(y) = P$. In the monitoring region, the shareholder pays the monitoring cost k and the manager gives all the cash flow to the shareholder. In the non-monitoring region, the shareholder receives the fixed payment P and the manager keeps $y - P$.

Finally, conditional on the optimal contract, the optimal fixed payment P^* is chosen by the shareholder to solve the unconstrained maximization problem

$$\max_P \int_{\underline{y}}^{P} (y-k)\,dF(y) + P(1-F(P)) - I. \tag{7}$$

Taking the first-order conditions of this problem and re-arranging, I get

$$1 - F(P^*) \quad = \quad kf(P^*), \tag{8}$$

showing that at the optimum, the shareholder balances the benefits of increasing P coming from reduced managerial rents with the costs coming from increased monitoring.

The first testable prediction of the model therefore comes from inspection of Equation (8), by noting that as the monitoring cost k becomes small, the probability $F(P^*)$ that the shareholder monitors the manager approaches one. In other words, when monitoring is inexpensive the shareholder always monitors and extracts the entire NPV from the project.

Prediction 1 *An increase in shareholder monitoring costs leads to shareholder value losses.*

Next, let V_c denote shareholder value when monitoring is costly (i.e. $k > 0$):

$$V_c = \int_{\underline{y}}^{P^*} (y - k)\, dF(y) + P^* (1 - F(P^*)) - I. \tag{9}$$

The loss in shareholder value from a world where monitoring is costless and the shareholder extracts the entire project NPV is then

$$V_f - V_c = kF(P^*) + \int_{P^*}^{\bar{y}} (y - P^*)\, dF(y), \tag{10}$$

which consists of monitoring expenditures and managerial rents.

Prediction 2 *When shareholder monitoring costs increase, losses in shareholder value are due to increased monitoring expenditure and managerial rents.*

The last model prediction requires assumptions on the distribution of bank cash flows. To provide intuition, I assume that cash flows are uniformly distributed over the interval $\left[\underline{y}, \bar{y}\right]$. The model generates similar predictions for other types of distributions (e.g. lognormal). Using a uniform distribution, some simple algebra shows that the shareholder value loss (10) becomes

$$V_f - V_c = k\left(1 - \frac{1}{2}\frac{k}{\bar{y} - \underline{y}}\right), \tag{11}$$

which is increasing in the term $\bar{y} - \underline{y}$. Noting that expected monitoring expenditure, $kF(P^*)$, is also increasing in $\bar{y} - \underline{y}$, and that $\bar{y} - \underline{y}$ is proportional to cash flow risk, the last prediction directly follows.[7]

Prediction 3 *When shareholder monitoring costs increase, shareholder value losses and monitoring expenditure are increasing in cash flow risk.*

[7] The standard deviation of a uniform distribution with support $[a, b]$ is given by $(b - a)/\sqrt{12}$.

Intuitively, when cash flow risk increases the likelihood of states where income is low or managerial rents are high increases, and this reduces shareholder value relative to a world where monitoring is costless and the manager cannot extract any rents. Over the next few sections I show that regulatory monitoring reduces shareholder monitoring costs by testing the predictions of my stylized model in the data.

3 Empirical Setting

In this section I describe how I measure bank value, monitoring expenditure, and cash flow risk in the data, and describe how I use these variables to estimate the shareholder value of regulatory monitoring.

3.1 Data Sources and Measurement

The data on BHC total consolidated assets comes from the Federal Reserve Regulatory Dataset. This dataset is publicly available on the Federal Reserve of Chicago's website, and contains information directly coming from the FR Y-9C, FR Y-9LP, and FR Y-9SP reports. I use the dataset to categorize BHCs into treated and control groups based on their 2005 average consolidated assets, and to keep track of which BHCs file which forms in each quarter.[8] Since the Fed policy allows treated banks to stop reporting their FR Y-9C consolidated statements, I use Compustat Bank as my main source of BHC consolidated financial data. I combine this dataset with CRSP to obtain end-of-quarter BHC market-to-book values, and in turn merge the Compustat-CRSP combined dataset with the Federal Reserve Regulatory Dataset using the link table available on the Federal Reserve of New York's website. Finally, I obtain data on analyst forecasts of bank profitability from I/B/E/S.

The observation frequency is quarterly, starting with the first quarter of 2004 and ending with the last quarter of 2007. Within this time period, I construct my main sample as follows. I focus on top-tier BHCs (defined as in Goetz, Laeven, and Levine (2016)) with average 2005 total assets between \$150 and \$850 million, and with stock price data available on CRSP. I assign individual BHCs to the

[8] This is important because, as I show in Section 6, some BHCs voluntarily keep filing forms FR Y-9C and FR Y-9LP even if their total assets are below \$500 million after the treatment.

treated group if their average total assets in 2005 are between $150 million and $500 million, and to the control group if their average total assets in 2005 are between $500 million and $850 million.[9] The final sample consists of 2,780 observations on 208 distinct BHCs, out of which 108 belong to the treated group and 100 belong to the control group. These BHCs represent around ten percent of the total number of BHCs in the US at the end of 2005, and around forty-six percent of the BHCs listed on the stock market at the end of 2005. In terms of size, these banks represent around one percent of the total assets in the banking sector at the end of 2005, and around five percent of the assets in the bottom ninety-nine percent of the asset distribution. Finally, the average pre-treatment BHC asset size in my sample is $519 million, right above the policy implementation threshold.

Table 1 reports summary statistics for my main measures of bank value, monitoring expenditure, and cash flow risk, both in the full sample and in the treated and control sub-samples.[10] The first two rows of Panel A show summary statistics for my measures of bank shareholder value, Tobin's q and the Market-to-Book ratio of bank equity. The data shows little dispersion in these valuation ratios, both within the main sample and across the treated and control sub-samples. The average and median Tobin's q in the main sample are 1.07 and 1.06, respectively, and the average and median Market-to-Book are 1.75 and 1.65.

The third row of Panel A shows summary statistics for bank professional expenditures, in millions of US dollars. These expenditures are recorded as a separate item on bank income statements, and include fees paid to consultants, auditors, and investment bankers. In Section 5.1, I show that professional expenditures are a good proxy for shareholder monitoring in my sample, because they are mostly related to the implementation of internal controls. Banks in the treated group pay slightly lower professional fees than banks in the control group. On average, treated banks spend 0.13 million of dollars per quarter in professional services, with a standard deviation of 0.14 million. Control banks spend on average 0.16 million of dollars per quarter in professional services, with a standard deviation of 0.18 million.

[9] I choose the upper bound of $850 million in total assets in such a way that the final treated and control samples contain approximately the same number of banks. In Section 4.2, I use $1 billion and $1.5 billion as alternative upper bounds, and show that the main results of the paper are not sensitive to these choices.

[10] Since I only observe evidence of managerial rents during the financial crisis, I leave a description of how I measure these rents to Section 5.1.1.

The last row of Panel A finally presents my primary cash flow risk measure, the absolute difference between analyst consensus forecast of two-year-forward bank EPS and the realized EPS value corresponding to each consensus forecast. By construction, this variable provides a time-varying measure of analyst uncertainty about future bank profitability, and therefore represents a close approximation to the risk of unobservable cash flows in my model. The table shows that cash flow risk is on average higher for treated banks than for control banks, partially reflecting lower analyst coverage of small banks. Both before and after the treatment, the average treated bank is covered by approximately four analysts analysts in a given quarter, while the average control bank is covered by six analysts.

Panel B of Table 1 reports summary statistics for the other key variables in the paper, which I borrow from the literature as potential determinants of cross-sectional heterogeneity in bank value (Laeven and Levine (2007), Minton, Stulz, and Taboada (2017)). These variables include leverage (total liabilities minus noncontrolling interest divided by total assets), the regulatory Tier 1 Regulatory Capital Ratio (henceforth Tier 1 Ratio, the bank self-reported ratio of Tier 1 Capital divided by Risk-Weighted Assets), total assets, profitability (net income divided by net interest income), Return on Equity (ROE, net income divided by book value of equity), diversification (noninterest income divided by net interest income), and quarterly asset growth. As in Panel A, the data reveals little differences in these variables across treated and control groups, thus confirming the comparability of these two sets of banks.

3.2 Estimation Strategy and Identification

In this section, I describe my strategy to test the model predictions in the data and to measure the shareholder value of regulatory monitoring. I exploit the change in regulatory reporting requirement to the Fed as a quasi-natural source of variation in shareholder monitoring costs. My empirical strategy consists in comparing the value and monitoring expenditure of smaller, treated banks with pre-treatment total assets just below $500 million with the value of larger, control banks with pre-treatment total assets just above $500 million, before and after the treatment. More precisely, I estimate the model

$$Y_{it} = \beta_0 + \beta_1 (\text{Post}_t \times \text{Treated}_i) + \beta_2 X_{it} + \gamma_i + \delta_t + \varepsilon_{it}, \tag{12}$$

where Y_{it} is an outcome variable (e.g. Tobin's q) for BHC i in quarter t, Post_t is an indicator equal to one if quarter t follows the last quarter of 2005 and zero otherwise, Treated_i is an indicator equal to one if the average assets of BHC i during 2005 are just below \$500 million, X_{it} is a matrix of time-varying control variables (such as assets and profitability), γ_i is a time-invariant and BHC-specific fixed effect, δ_t is a BHC-invariant and time-specific fixed effect, and ε_{it} is a normally-distributed error term. The coefficient of interest is β_1, my estimate of the value difference between treated and control banks before and after the treatment.

My empirical strategy relies on the key identification assumption of quasi-random assignment of treated and control banks around the threshold *before* the Fed changes the reporting requirements of treated banks, such that any systematic value difference *after* the policy implementation is arguably only due to differences in regulatory monitoring. In practice, this assumption can be violated for two reasons. First, the assumption is violated if the threshold change results from lobbying, making the treatment an endogenous outcome. Second, the assumption is violated if, even in absence of lobbying, banks engage in size manipulation around the new threshold before its implementation.

Although the institutional details of the policy suggest that lobbying was unlikely, whether the policy was unanticipated by bank shareholders is ultimately an empirical question.[11] In Figure 1 I report a diagnostic test aimed at detecting pre-existing differences in the average valuation of treated and control banks before the treatment. Panels A and B report these diagnostics for Tobin's q and Market-to-Book, respectively, and are constructed as follows. I first divide the sample into two sub-samples, the pre-treatment sample before the first quarter of 2006 and the post-treatment sample starting with the first quarter of 2006. In each of these sub-samples, I run a kernel-weighted local polynomial regression to obtain a smoothed estimate of the trend component of treated and control banks' valuation. In Figure 1 I then plot these estimated trend components and their associated

[11] The first proposal for public comment on the policy dates to November 2005, and the policy was quickly implemented at the beginning of March 2006 without modifications to the initial proposal.

confidence intervals as functions of the observation quarter, both in the pre- and in the post-treatment periods.[12] Figure 1 shows that the trend components of treated and control banks' valuation are statistically indistinguishable from each other in the pre-treatment period, supporting the claim that the threshold change was unanticipated. Moreover, the figure shows an increase in the difference between treated and control banks' average valuation after the treatment, providing a visual preview of the results in the next section.

In Figure 2, I report the results of a McCrary (2008) discontinuity test to reduce concerns of bank size manipulation around the \$500 million threshold. Specifically, I construct a finely-gridded histogram of bank total assets, which I then smooth on each size of the threshold using local linear regression. In Figure 2, I then report point estimates and 95% confidence intervals of smoothed asset densities during the 2005-2007 period (Panel A) and during the four quarters immediately before the treatment (Panel B). Both before and after the treatment, the estimated asset density below the threshold is not statistically different from the estimated asset density above the threshold.[13] Importantly, a specific institutional feature of the policy reduces residual concerns of asset manipulation before the treatment. The policy states that individual BHCs qualify for reporting exemptions only if their June 2005 consolidated assets are below \$500 million. At the same time, the Fed first publicly announces the threshold change in November 2005, preventing pre-treatment size manipulation.

4 The Value of Regulatory Monitoring

In this section I present my main results on the value impact of regulatory monitoring.

4.1 Main Results

Table 2 shows my main findings on the value impact of regulatory monitoring. The table reports point estimates for the coefficients in Equation (12), along with their standard errors (clustered at the BHC-level). The main coefficient of interest is associated with the "Post $\times$ Treated" term, which

[12] I divide the sample to avoid post-treatment observations entering the estimation of the pre-treatment trend, and vice-versa. All panels of Figure 1 are constructed using an Epanechnikov kernel and the rule-of-thumb bandwidth size suggested in Fan and Gijbels (1996). Different kernel and bandwidth choices generate similar results.

[13] All the results are calculated using the histogram bin size and local linear regression bandwidth suggested in McCrary (2008).

represents an estimate of the percentage change in Tobin's q and Market-to-Book due to the change in reporting requirements.

When I estimate Equation (12) only including quarter- and BHC-level fixed effects, the policy treatment leads to a one percent decline in treated bank Tobin's q, relative to control banks. The economic magnitude and statistical significance of the treatment effect are not affected by the inclusion of leverage and Tier 1 Ratio, reducing concerns that the effect might be due to contemporaneous changes in small bank capital requirements (see Section 6). Everything else equal, a ten percent increase in leverage and Tier 1 Ratio are respectively associated to a 3.2 and 3.8 percent increase in Tobin's q, but the treatment still induces a 1.1 percent decrease in Tobin's q after the inclusion of these variables. Finally, the results are robust to the inclusion of size, profitability, diversification, and asset growth as additional controls.

In the last three specifications of the table, I repeat the same exercise using Market-to-Book as dependent variable. The table shows that the treatment induces a 6.9 percent loss in Market-to-Book for treated banks, and this value loss is as high as 7.9 percent when I add time-varying controls to the specification. To put these numbers in perspective, a seven percent relative decrease in Market-to-Book corresponds to a \$4 million relative decrease in market capitalization for the average treated bank, implying an aggregate market capitalization loss of approximately \$430 million. Finally, a comparison of the first three and the last three columns of Table 2 shows that the treatment effect on Tobin's q is almost one order of magnitude smaller than the treatment effect on Market-to-Book. This is due to leverage, which reduces the impact of equity fluctuations on the market value of bank assets.[14] Overall, the results of the table are consistent with the prediction that increased monitoring

[14] A simple example can illustrate this point. Respectively define by E_t, D_t and M_t the book value of equity, the book value of debt and the market value of equity in quarter t. Suppose that E_t and D_t do not change between quarter t and quarter $t+1$ (i.e. $E_t = E_{t+1} \equiv E$ and $D_t = D_{t+1} \equiv D$), but M_t changes to M_{t+1}. Let $\Delta M_{t+1} \equiv M_{t+1} - M_t$. Finally, let mb_t and q_t respectively define the Market-to-Book ratio and Tobin's q at time t. The change in Market-to-Book between time t and $t+1$ is given by

$$\Delta mb_{t+1} = \frac{M_{t+1}}{E_{t+1}} - \frac{M_t}{E_t} = \frac{\Delta M_{t+1}}{E}. \tag{13}$$

Then, changes in Tobin's q can be expressed as a function of changes in Market-to-Book and bank leverage:

$$\Delta q_{t+1} = \frac{M_{t+1} + D_{t+1}}{E_{t+1} + D_{t+1}} - \frac{M_t + D_t}{E_t + D_t} = \frac{\Delta M_{t+1}}{E + D} = \left(1 - \frac{D}{E + D}\right) \Delta mb_{t+1}, \tag{14}$$

where the term in parentheses in (14) is on average equal to 9% in my sample.

costs reduce bank shareholder value.

4.2 Robustness, Placebo, and Falsification Tests

Table 3 reports two sets of tests aimed at reducing sample selection concerns. In the interest of space, I only present results for Tobin's q, leaving the results for Market-to-Book to the appendix. In Panel A, I test the impact of different sample bandwidth restrictions on my main result. In the first four specifications of the table, I use two small samples of BHCs with average 2005 total assets between $400 and $600 million, and between $300 and $700 million. In the last four specifications, I conversely use two large samples of BHCs with total assets between $150 million and $1 billion, and between $150 million and $1.5 billion. To mitigate the impact of confounding factors at the onset of the financial crisis as the sample size changes, the results in Table 3 only include data for 2005 and 2006. The table shows that the main results of the paper are not sensitive to different sample bandwidth choices. Moreover, the first four specifications—which measure the treatment effect on banks closest to the threshold—show that the treatment leads to an average 1.2 percent discount in Tobin's q, slightly larger than the effect found in Table 2.

In Panel B I conversely show that the statistical and economic magnitude of my results disappear when I separate treated and control banks using arbitrary treatment thresholds and quarters. The first six specifications show that the results disappear when I use asset thresholds of $300 million, $750 million and $1 billion to separate treated and control banks. Similarly, Specifications (7) and (8) show that the results disappear when I use the last quarter of 2004 as treatment quarter, and the last two specifications show that the results disappear when I use the last quarter of 2006 as treatment quarter.

In the appendix, I provide additional robustness tests. First, I run an event study to show that the observed drop in Tobin's q and Market-to-Book are driven by a drop in the market value of treated banks as opposed to an increase in their book value or an increase in the market value of control banks. Second, I apply different restrictions on my sample to include the financial crisis, exclude banks that drop out of the sample, and exclude banks that are not listed on the stock market before the policy. Again, my results are robust to these restrictions. Third, I show that the treatment effect on bank value is roughly uniform at the peak of the business cycle in 2006 and at the beginning of the financial crisis in 2007, supporting the validity of my results outside the specific environment of early 2006. Fourth, using Compustat data I construct two falsification samples of non-financial firms and non-BHC financial firms (e.g. insurance companies and banks that are not BHCs), and study whether the valuation of firms with 2005 average total assets just below $500 million changes after the treatment date, relative to the valuation of firms with total assets just above $500 million. The results show no evidence of value changes in these falsification samples, confirming that the Fed threshold change, as opposed to other size-based regulations, drives the drop in treated bank value.

5 How does Regulatory Monitoring Benefit Shareholders?

In this section I provide additional evidence for my proposed mechanism by testing the remainng model predictions, namely that reduced regulatory monitoring increases shareholder monitoring expenditure and managerial rents, and that bank value losses and monitoring expenditure are positvely correlated with cash flow risk. Moreover, I show that increased shareholder monitoring costs increase shareholder incentives to free-ride on each other's monitoring.

5.1 Bank Value, Monitoring Expenditure, and Managerial Rents

The second prediction of the costly state verification model is that the observed losses in treated bank value should be due to increased shareholder monitoring expenditure and managerial rents. Table 4, provides a first test of this prediction by showing that the policy results in a twenty-five percent increase in treated bank professional expenditure. This relative professional expenditure increase is economically large for treated banks, amounting to approximately twenty-seven thousand dollars per quarter or 3.8 percent of the average treated bank's pre-treatment quarterly net income. Consistent with the model's predictions, when I discount these increased professional expenditures (after-taxes) at an average quarterly ROE of two percent, their discounted present value amounts to slightly less than a million dollars, around twenty-five percent of the four million relative drop in market value experienced by the average treated bank. In other words, increased monitoring expenditures only account for a fraction of the loss in treated bank market value.

Next, in Table 5, I show that the post-treatment losses in market value are strongly correlated with professional expenditures. In practice, I augment the main specification of Table 2 with an interaction term for professional expenditures incurred by treated banks only after the treatment, capturing the post-treatment correlation between treated bank professional expenditure and value. In most specifications, I include time-varying risk controls such as Z-Score, equity return volatility, and a tail risk measure borrowed from Ellul and Yerramilli (2013). The table shows that the statistical significance of the treatment effect is entirely captured by post-treatment professional expenditures by treated banks. While the magnitude of this triple-differences estimate has no clear economic interpretation, its significance suggests a strong positive correlation between post-treatment professional expenditure and losses in shareholder value. Moreover, in the appendix I show that this correlation does not seem to be mechanically driven by changes in profitability, size, or risk variables that are potentially correlated with both professional expenditure and value.

Finally, a more in-depth analysis reveals that post-treatment professional expenditure growth for treated banks is mainly related to increased management monitoring, as opposed to other professional services such as auditing and investment banking. In the appendix, I show that fees paid to consultants experience a much larger increase after the treatment than fees paid to auditors (from annual AuditAnalytics). Moreover, when I divide treated banks based on whether their post-treatment 10-K notes cite internal controls consulting as a component of professional expenditure, the increase in professional expenditure is larger for treated banks that cite internal controls as a significant source of expenditure.[15]

5.1.1 Managerial Rents

In this section I provide empirical support for the hypothesis that reduced monitoring costs increase managerial rents, where I measure managerial rents by earnings smoothing (Fudenberg and Tirole (1995)). Specifically, I use the August 2007 rise in money market interest rates as a shock to the funding costs of BHCs with total assets around $500 million, and analyze the impact of this negative

[15] In many banks, internal controls expenditures are related to Sarbanes-Oaxley (SOX). In the appendix, I show that the observed decline in treated banks' valuation is however not due to interactions between the policy and size-related SOX provisions (see, for example, Iliev (2010)).

shock on managerial earnings smoothing right above and right below the threshold. Since money market interest rates are determined in the interbank lending market of large banks, non-systemic banks with assets around $500 million arguably play a negligible role in determining this funding shock. Any observed difference in funding costs and earnings smoothing of banks right above and below the threshold should therefore only arise from the different exposure of these banks to Fed monitoring.

To test whether the 2007 shock has a different impact on banks with assets right above and right below the threshold, I construct two new groups of treated and control BHCs. The new group of treated, "unmonitored" BHCs consists of BHCs with less than $500 million in assets during the 2006-2008 period. The new group of control, "monitored" BHCs consists of BHCs with more than $500 million in assets during the same period. To avoid potential bias due to the change in the definition of small BHCs, I drop observations before the first quarter of 2006. Moreover, I drop BHCs with total assets above $700 million such that systemic banks are excluded from the sample and such that the unmonitored and monitored groups have roughly the same number of banks (sixty-seven and fifty-seven, respectively). My results are not sensitive to this sample bandwidth choice.

In Table 6 I report my main results on the impact of Fed supervision on funding costs, profitability, and earnings smoothing during the crisis.[16] Panel A shows the impact of Fed supervision on the funding costs and profitability of unmonitored banks relative to monitored banks. In the first two specifications of Panel A, I use total interest expense divided by total loans as a measure of BHC funding costs. The table shows that during the crisis the difference between the cost of funding of unmonitored and monitored banks increases by 5.3 percent relative to the pre-crisis period, and that this effect is robust to the inclusion of lagged Tobin's q, leverage, Tier 1 Ratio, total assets, diversification and asset growth as regression covariates. The next specifications show that this relative increase in unmonitored bank funding costs is however not associated with an increase in interest revenue (interest income divided by total loans), and only by a marginally significant decrease in ROE. As a result, unmonitored banks' higher funding costs must be followed by higher noninterest revenue, lower noninterest expense, or both.

[16] Summary statistics for the dependent variables used in this section are reported in the appendix.

In the first two specifications of Panel B, I show that unmonitored bank Loan Loss Provisions—a component of noninterest expense—indeed experience a large decline during the financial crisis. While the results of the baseline Specification (1) are not statistically significant, the second specification of Panel B shows that during the crisis unmonitored bank LLPs decrease by fifty-three percent relative to monitored bank LLPs after controlling for size, profitability, and other sources of bank heterogeneity. The observed decline is not due to bank size or performance, and is therefore consistent with the hypothesis of earnings smoothing (as previously documented by Huizinga and Laeven (2012)). In the last four specifications of Panel B, I confirm this hypothesis by showing a relative increase in small bank Discretionary Negative Loan Loss Provisions (DNLLPs) during the crisis. These discretionary provisions are the absolute negative residuals from a first-stage regression of LLP on observable performance variables, and measure the negative change in LLP that is not due to bank performance (Kanagaretnam, Lim, and Lobo (2014)). Panel B shows a relative DNLLPs increase as large as seventy percent for unmonitored banks, confirming that the decline in LLP documented in the first two specifications is due to managerial discretion as opposed to performance.

In the appendix, I conduct additional tests to address potential concerns that the results of Table 6 are driven by a subset of small, distressed banks during the crisis rather than by Fed monitoring. In particular, I show that the results are robust within the sample of banks surviving for the entire 2006-2008 period, and lose economic and statistical significance when I choose an alternative threshold of $400 million to define the two groups of unmonitored and monitored banks.

5.1.2 Cash Flow Risk

In Table 7 I test my third prediction that banks with higher cash flow risk should experience a larger decline in value and a larger increase in monitoring expenditure after the treatment. To do so, I divide treated banks into two sub-groups based on whether their average cash flow risk (as defined in Section 3.1) is above or below the median cash flow risk in my sample. In the table, I then study the treatment effect on value and professional expenditure in these two cash flow risk groups. The table shows that treated banks with high cash flow risk experience larger value losses than treated banks with low cash flow risk. For example, the relative loss in Market-to-Book for treated banks with high cash flow risk is twice as large as the average value loss in the main sample, while the relative value loss for treated banks with low cash flow risk is not statistically different from zero. Moreover, treated banks with high cash flow risk also experience a much larger increase in monitoring expense than treated banks with low cash flow risk, again in line with the predictions of the model. In the appendix, I finally show that most of the results of the table also hold when using alternative risk measures such as Z-Scores and equity return volatility.

5.2 Regulatory Monitoring and Shareholder Free-Riding

I finally argue that increased shareholder monitoring costs increase their incentives to free-ride on each other's monitoring (Grossman and Hart (1980), Holmström (1982)). Consistent with the the predictions of Shleifer and Vishny (1986), I show that the presence of a large shareholder—the chairman of the board of directors—helps mitigating this free-rider problem and increases bank value.

In Table 8, I investigate how different levels of chairman ownership affect monitoring costs and valuation immediately after the treatment.[17] Similar to Table 7, I first divide treated banks in two groups based on whether their pre-treatment ownership by the chairman falls in the bottom two terciles or in the top tercile of the pre-treatment chairman ownership distribution in my sample. In the table, I then study the professional spending and value losses in these two groups of banks. The main objective of this table is to show the short-term treatment effect on professional expenditure and value for banks with different levels of ownership, and the table therefore only reports results for the years 2005 and 2006.

The first four specifications show that banks with low and high levels of chairman ownership respectively increase their professional expenditure by eighteen and fifty-one percent after the treatment. In absolute terms, these relative changes translate into an average twenty-five thousand dollar increase in professional expenditure for banks with low chairman ownership, and an average thirty thousand dollar increase for banks with high chairman ownership. Despite the much larger increase in relative professional expenditure and the slightly larger increase in absolute expenditure,

[17]Ownership data comes from S&P Capital IQ. The results presented in the table are qualitatively similar, although statistically and economically weaker, for other categories of ownership such as institutional ownership. A possible explanation for this result is that the banks in my sample are relatively small compared to other financial institutions, and likely represent a small fraction of institutional investors' portfolio (Fich, Harford, and Tran (2015)).

the last two specifications show that treated banks with high chairman ownership only experience around sixty percent of the value drop of treated banks with low chairman ownership.[18] In other words, while the discounted present value of bank professional expenditure is approximately the same across the two ownership groups, the valuation of banks with low chairman ownership drops by much more than the valuation of banks with high chairman ownership.

Consistent with the idea that ownership resolves shareholder free-riding problems, in the appendix I finally show that the treatment effect on professional expenditure is not only larger but also more persistent in banks with high chairman ownership. At the same time, the post-treatment drop in shareholder value is lower and less persistent for these banks relative to banks with low chairman ownership.

6 Discussion and Tests of Alternative Hypotheses

Collectively, the results of the previous sections suggest that the large value losses of treated banks are due to increased shareholder monitoring costs. Quantitiatively, the discounted present value of increased monitoring expenditures accounts for around twenty-five percent of their loss in shareholder value. Moreover, as just shown in Section 5.2, around forty precent of the value loss can be attributed to free-riding problems as shareholder monitoring becomes more expensive. Following the guidance of my model and my previous empirical results, I finally attribute the residual shareholder value losses to increased managerial rents.

Despite empirical evidence supporting the model's predictions, my results make it difficult to finally conclude that the residual shareholder value losses are necessarily due to mangerial rents. My strategy is to rule out alternative hypotheses that might explain these residual value losses.[19]

Government Tail Risk Insurance An important question is whether the government provides different degrees of tail risk insurance to small and large banks. If this is the case, part of the discounts observed in treated bank value might just reflect a loss of government insurance, as opposed to re-

[18]Pre-treatment valuations in the two ownership groups are not statistically different from each other.

[19]For expositional convenience, the tables relative to this section are confined to the appendix.

duced Fed monitoring. To test this hypothesis, I construct a daily version of the Gandhi and Lustig (2015) risk factor capturing aggregate tail risk in US banks' stock returns. As discussed in their paper, this size factor is the normal risk-adjusted return on a portfolio that goes long in small bank stocks and short in large bank stocks, and represents a bank-specific risk factor orthogonal to other equity and bond factors. In the appendix, I test whether treated banks experience a change in their exposure to bank-specific tail risk after the treatment, where I measure this risk exposure as the quarterly loading of bank excess returns on the size factor. In practice, I repeat the usual exercise using each bank's quarterly loading on the size factor (the estimate from a quarterly time-series regression of daily bank excess returns on the daily size factor) as dependent variable. My results show no significant changes in deregulated banks' exposure to tail risk, and therefore to government tail risk insurance.

Financial Statement Disclosure A second possible channel for the residual losses in treated bank value is reduced financial disclosure (Hutton et al. (2009)). To rule out this hypothesis, I use a policy provision of the Fed policy allowing treated BHCs to keep filing form FR Y-9C, while also preventing them to revert to form FR Y-9SP if they choose to do so. Following this provision, I define treated banks as voluntary filers if they file form FR Y-9C in March 2006 (the first quarter in which the policy becomes effective).[20] In the appendix, I analyze the treatment effect on twenty-nine voluntary filers (the voluntary-reporting group), and compare it to the effect on the remaining treated banks (the not-reporting group). The treatment effect on each sub-group is a one percent decrease in Tobin's q, both in baseline specifications and when I add time-varying controls. Similarly, the treatment induces a 7.7 percent drop in voluntary-reporting BHCs' Market-to-Book, almost identical to the 7.6 percent drop for not-reporting BHCs. The results are similar when I add time-varying controls, confirming that the treatment affects treated banks irrespective of their financial disclosure.

Liquidity, Volatility, and Market Frictions Another possible concern is that the stocks of treated BHCs become riskier or less liquid following the treatment. Lower information availability might decrease the liquidity of treated banks' stocks—therefore justifying an illiquidity premium. Alter-

[20] The policy gives the Fed the option to determine if a small bank should file form FR Y-9C based on additional individual criteria such as diversification. However, this provision is only effective from the second half of 2006 and virtually never used by the Fed in subsequent periods.

natively, institutional investors might treat the stocks of small and large banks differently, possibly using Fed thresholds to define their investment strategy. For example, if many institutional investors can only hold stocks of large banks, one would expect a decrease in turnover, an increase in idiosyncratic risk, and a decrease in market information responsiveness for treated banks' stocks.

My results show no significant changes in the liquidity, volatility, and market information responsiveness of treated banks' stocks after the treatment. More specifically, the data shows no significant changes in five stock liquidity measures commonly used in the market microstructure literature, namely Effective Tick Size (Holden (2009), Goyenko, Holden, and Trzcinka (2009)), the Corwin and Schultz (2012) Bid-Ask Spread measure, the Amihud (2002) measure, Zero Days Traded (the number of days in which a stock is not traded) and Turnover (traded volume divided by shares outstanding). Similarly, the data shows no significant changes in treated banks' risk profile, where I use the standard deviation of BHC stock returns to measure total risk and the residual standard deviations from the Fama-French four factor model and the Adrian, Friedman, and Muir (2015) Financial CAPM model to measure bank idiosyncratic risk. Finally, I find no evidence of changes in stock price responsiveness to market information, as measured by the delay variables of Hou and Moskowitz (2005).

Leverage and Capital Requirements I finally analyze the treatment effect on leverage and capital ratios. The policy closely follows another Fed regulation relaxing the capital requirements of treated BHCs' parent companies (71 FR 9897). According to this regulation, the parent companies of BHCs with less than $500 million in total assets (i.e. the parent companies of treated BHCs) are exempted from regular capital requirements to finance levered acquisitions. Although unlikely (capital requirements exemptions are optional, and the banking subsidiaries of treated BHCs are still subject to regular capital requirements), there might be a concern that high leverage increases bank default risk, resulting in lower valuation. The appendix shows that the leverage and the regulatory capital ratios of treated banks do not change after the treatment.

7 Conclusion

In this paper, I use a Fed policy relaxing the reporting requirements of a subset of US banks as a quasi-natural experiment to investigate the impact of regulatory monitoring on shareholder value. The paper shows that Tobin's q and equity market-to-book of deregulated banks respectively fall by one and seven percent after the policy, and shows that this result is due to an increase in shareholder monitoring costs when regulatory monitoring decreases. I show that, absent regulatory monitoring, increased shareholder monitoring costs lead to increased monitoring expenditure, managerial rents, and free-riding problems between shareholders.

From an economic standpoint, the paper shows that monitoring has a large impact on firm value, and demonstrates the positive role of regulation in reducing shareholder monitoring costs. From a policy standpoint, the paper provides an empirical counter-argument to the standing view that financial regulation is bad for bank investors, especially in small and medium-sized banks. In this sense, future work should be aimed at measuring the contribution of agency frictions to the value discounts observed in very large banks (Minton et al. (2017)), and quantifying the costs and benefits of financial regulation for these large, complex financial institutions.

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Figure 1

Common Trends in Pre-Policy Bank Valuation

This figure reports a parallel trends diagnostic test on treated and control banks' Tobin's q (Panel A) and Market-to-Book (Panel B). I first divide the sample into two sub-samples, the pre-treatment sample before the first quarter of 2006 and the post-treatment sample starting with the first quarter of 2006. In each of these sub-samples, I run a kernel-weighted local polynomial regression to obtain a smoothed estimate of the trend component of valuation. The local polynomial regression uses an Epanechnikov kernel and the rule-of-thumb bandwidth suggested in Fan and Gijbels (1996). The figure reports point estimates and 95% confidence intervals of the trend component of treated and control banks' valuation as functions of the estimation quarter. Tobin's q and Market-to Book are defined as in Table 1.

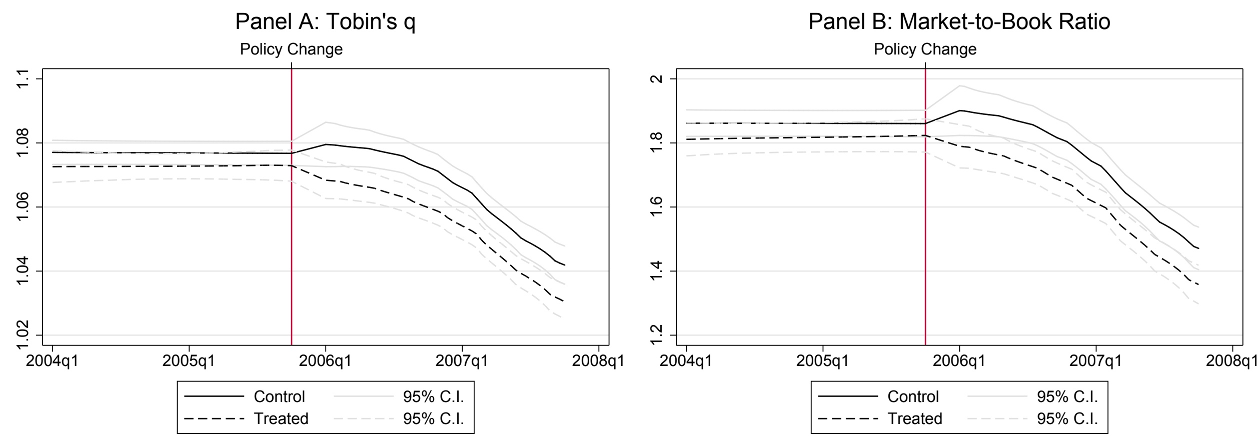

Figure 2

Bank Size Manipulation

This figure shows point estimates and 95% confidence intervals of the smoothed cross-sectional density of bank total assets during the 2005-2007 period (Panel A) and during the four quarters preceding the Policy (Panel B). The goal of the figure is to detect discontinuities indicative of size manipulation around the Policy threshold. The smoothed densities are obtained by first constructing finely-gridded histograms of the cross-section of bank total assets, and by then smoothing the histograms on each size of the threshold using local linear regression. The optimal histogram bin size and local linear regression bandwidth are calculated using the procedure in McCrary (2008).

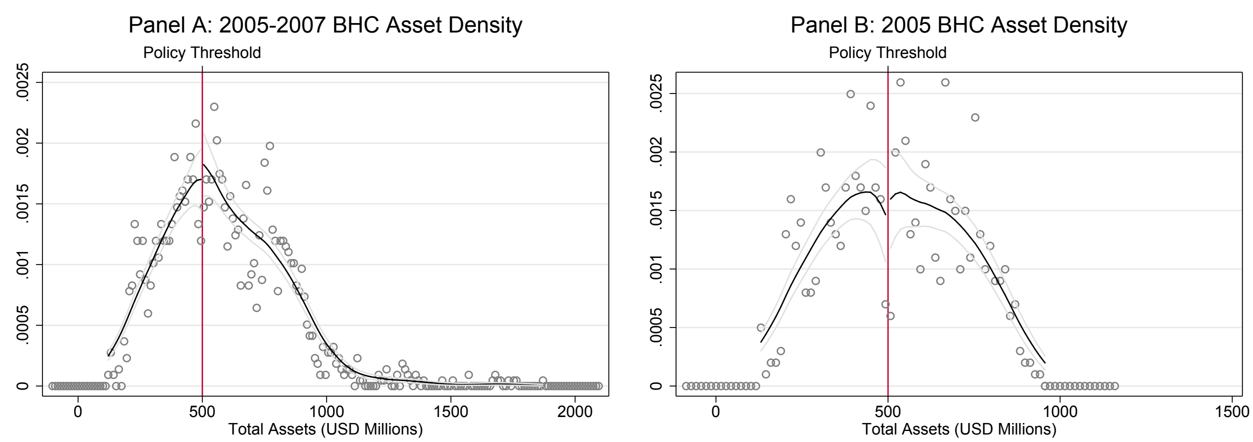

Table 1

Summary Statistics

This table reports summary statistics for the variables in the paper, both in the main sample and in the treated and control sub-samples. In Panel A, Tobin's q is the market value of total assets (market value of equity plus book value of debt) divided by the book value of total assets. Market-to-Book is the market value of equity divided by the book value of equity. Professional Services are fees paid to management consulting firms, investment banks, and auditing firms, in millions of US dollars. Cash flow risk is a quarterly average of the absolute difference between monthly analyst consensus forecast of two-year-forward bank EPS and the realized EPS value corresponding to each consensus forecasts. In Panel B, leverage is total liabilities divided by total assets, Tier 1 Ratio is Tier 1 Capital divided by Risk-Weighted Assets, Profitability is net income divided by net interest income, and ROE is net income divided by book value of equity. Total Assets are reported in millions of US dollars. Finally, diversification is non-interest income divided by net interest income, and asset growth is quarterly growth in BHC total assets.

Panel A: Shareholder Value, Monitoring Expenditure, and Cash Flow Risk

	Full Sample				Treated				Control			
	N	Mean	Med.	SD	N	Mean	Med.	SD	N	Mean	Med.	SD
Tobin's q	2,623	1.07	1.06	0.05	1,329	1.06	1.06	0.05	1,294	1.07	1.06	0.05
Market-to-Book	2,623	1.75	1.65	0.57	1,329	1.71	1.60	0.57	1,294	1.80	1.72	0.56
Professional Fees	1,756	0.14	0.10	0.16	862	0.13	0.10	0.14	894	0.16	0.12	0.18
Cash Flow Risk	937	0.87	0.24	2.38	306	1.54	0.34	3.80	631	0.55	0.22	1.04

Panel B: Additional Variables

	Full Sample				Treated				Control			
	N	Mean	Med.	SD	N	Mean	Med.	SD	N	Mean	Med.	SD
Leverage	2,624	0.91	0.91	0.03	1,329	0.91	0.91	0.03	1,295	0.91	0.91	0.02
Tier 1 Ratio	2,289	0.12	0.12	0.03	1,096	0.13	0.12	0.04	1,193	0.12	0.11	0.03
Total Assets	2,703	554.9	535.6	232.5	1,341	386.5	382.8	128.5	1,362	720.6	696.8	188.8
Profitability	2,701	0.23	0.26	0.34	1,340	0.20	0.24	0.44	1,361	0.25	0.27	0.19
ROE	2,624	0.02	0.03	0.03	1,329	0.02	0.02	0.03	1,295	0.03	0.03	0.02
Diversification	2,701	0.27	0.22	0.24	1,340	0.26	0.20	0.29	1,361	0.27	0.24	0.18
Asset Growth	2,655	0.03	0.02	0.06	1,308	0.03	0.02	0.06	1,347	0.03	0.02	0.05

Table 2

The Policy Effect on Bank Shareholder Value

This table reports estimates of the treatment effect on bank valuation using the empirical specification in Equation (12). The coefficient associated with the "Post × Treated" interaction term captures the percentage change in treated bank valuation due to the treatment. The table includes year-quarter Fixed Effects (FE) and BHC FE. All the variables are defined as in Table 1.

	log Tobin's q			log Market-to-Book		
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated	-0.010***	-0.011***	-0.010***	-0.069***	-0.079***	-0.074***
	(0.00)	(0.00)	(0.00)	(0.03)	(0.02)	(0.02)
Leverage		0.318***	0.253**		5.473***	5.170***
		(0.12)	(0.10)		(0.81)	(0.68)
Tier 1 Ratio		0.376***	0.280***		2.539***	1.746***
		(0.08)	(0.07)		(0.51)	(0.48)
log Assets			-0.032***			-0.234***
			(0.01)			(0.05)
Profitability			-0.004			0.041
			(0.00)			(0.04)
ROE			0.091**			0.292
			(0.04)			(0.47)
Diversification			-0.004			-0.054
			(0.00)			(0.04)
Asset Growth			-0.006			-0.021
			(0.01)			(0.07)
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.360	0.393	0.418	0.413	0.470	0.503
Observations	2,177	2,177	2,177	2,177	2,177	2,177

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table 3

Robustness and Placebo Tests: Tobin's *q*

This table reports sample bandwidth selection tests (Panel A) and placebo tests (Panel B) on my main Tobin's *q* result. In the first four specifications of Panel A, I use two small samples of BHCs with average 2005 total assets between $400 and $600 million (Specifications (1) and (2)), and between $300 and $700 million (Specifications (3) and (4)). In the last four specifications, I use two large samples of BHCs with total assets between $150 million and $1 billion (Specifications (5) and (6)), and between $150 million and $1.5 billion (Specifications (7) and (8)). In the first six specifications of Panel B, I use asset thresholds of $300 million, $750 million and $1 billion to separate treated and control BHCs. In Specifications (7) and (8) I use the last quarter of 2004 as treatment quarter, dropping post-2005 observations from the sample. In the last two specifications, I use the last quarter of 2006 as treatment quarter. The dependent variable in all specifications is the natural logarithm of Tobin's *q*. Unreported control variables include leverage, Tier 1 Ratio, total assets, profitability, ROE, diversification, and asset growth.

Panel A: Sample Bandwidth Selection

	$400M-600M		$300M-700M		$150M-1B		$150M-1.5B	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post × Treated	-0.012**	-0.012**	-0.011**	-0.012***	-0.010***	-0.012***	-0.011***	-0.012***
	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.117	0.169	0.087	0.131	0.058	0.105	0.046	0.089
Observations	355	355	724	724	1,313	1,313	1,611	1,611

Panel B: Placebo Tests

	$300M Threshold		$750M Threshold		$1B Threshold		After 12/2004		After 12/2006	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Post × Treated	-0.00	-0.00	0.00	-0.00	0.00	0.00	0.00	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.385	0.459	0.339	0.403	0.360	0.422	0.054	0.146	0.351	0.408
Observations	1,056	1,056	1,509	1,509	2,076	2,076	1,028	1,028	2,177	2,177

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table 4

The Policy Effect on Bank Professional Expenditure

This table shows the treatment effect on treated banks' professional expenditure. In the first three specifications I use the natural logarithm of professional fees as dependent variable, while in the last three specifications I use the natural logarithm of professional fees normalized by net interest income. Additional control variables not reported in the table include total assets, profitability, ROE, diversification, and asset growth.

	log Professional Fees			$\log \frac{\text{Professional Fees}}{\text{Net Interest Income}}$		
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated	0.259***	0.267***	0.244***	0.225**	0.224**	0.232***
	(0.09)	(0.09)	(0.07)	(0.09)	(0.09)	(0.08)
Leverage		-2.080	-1.640		2.051	0.885
		(3.22)	(2.49)		(3.08)	(2.53)
Tier 1 Ratio		-4.471***	-2.173		-1.436	-1.290
		(1.51)	(1.34)		(1.46)	(1.35)
Other Controls	No	No	Yes	No	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.076	0.101	0.182	0.047	0.062	0.129
Observations	999	999	999	999	999	999

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table 5

Professional Expenditure Growth and Post-Treatment Value Losses

In this table I study the interaction between post-treatment professional expenditure growth and post-treatment bank value losses. In the table, the term "Post × Treated × Prof. Fees" captures treated banks' professional expenditures that only occur after the treatment. Z-Score is computed as the moving average of bank capital-asset ratio (book value of equity divided by book value of assets), plus the moving average of ROA, divided by the moving standard deviation of ROA. Moving averages are calculated over a horizon of three quarters. Equity Volatility is the quarterly standard deviation of daily equity returns. Tail risk is the negative of the average return over the 5% worst return days that a bank's stock experiences in a given quarter (Ellul and Yerramilli (2013)). Professional fees are normalized by net interest income. Unreported control variables include total assets, leverage, profitability, ROE, diversification, and asset growth.

	log Tobin's q			log Market-to-Book		
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated	-0.001	-0.001	-0.000	0.003	-0.000	0.004
	(0.01)	(0.01)	(0.01)	(0.04)	(0.03)	(0.03)
Prof. Fees	-0.037	-0.067	-0.075*	-0.103	-0.244	-0.437
	(0.05)	(0.04)	(0.04)	(0.52)	(0.45)	(0.36)
Post × Treated × Prof. Fees	-0.139***	-0.105**	-0.124**	-1.447***	-1.196***	-1.188***
	(0.05)	(0.05)	(0.06)	(0.54)	(0.43)	(0.39)
Z-Score		0.000	0.000		0.000	0.000
		(0.00)	(0.00)		(0.00)	(0.00)
Equity Volatility		1.681***	1.681***		11.419***	10.430***
		(0.29)	(0.25)		(1.41)	(1.55)
Tail Risk		-0.813***	-0.789***		-6.008***	-5.713***
		(0.11)	(0.10)		(0.63)	(0.54)
Other Controls	No	No	Yes	No	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.290	0.336	0.376	0.368	0.417	0.485
Observations	1,641	1,641	1,641	1,641	1,641	1,641

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table 6

Managerial Rents: Earnings Smoothing in the Financial Crisis

In this table, I study the impact of Fed monitoring on bank funding costs, profitability, and earnings smoothing during the financial crisis. In Panel A, I study the change in funding costs (total interest expense divided by total loans), interest revenue (interest income divided by total loans), and ROE. In Panel B, I study the change in LLP (loan loss provisions normalized by net interest income) and DNLLP (constructed following Kanagaretnam et al. (2014) as the absolute negative residual from a regression of LLP on previous-quarter loan loss allowance, current-quarter loan charge-offs to assets, loans to assets, non-performing loans to assets and change in total loans) during the financial crisis. The dependent variable used to calculate DNLLP 1 is current-quarter LLP, while the dependent variable used to calculate DNLLP 2 is previous-quarter LLP. The sample period is 2006-2008. Unmonitored banks are banks that are below the $500 million threshold for the entire sample period. Unreported controls include previous-quarter Tobin's q, leverage, the Tier 1 Ratio, total assets, diversification and asset growth in Panel A, as well as operating profitability and ROE in Panel B.

Panel A: Funding Costs and Profitability

	$\log \frac{\text{Int. Expense}}{\text{Total Loans}}$		$\log \frac{\text{Int. Income}}{\text{Total Loans}}$		log ROE	
	(1)	(2)	(3)	(4)	(5)	(6)
Crisis × Unmonitored	0.053**	0.053***	0.018	0.019	-0.112	-0.157*
	(0.02)	(0.02)	(0.01)	(0.01)	(0.10)	(0.09)
Controls	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.673	0.755	0.626	0.662	0.137	0.200
Observations	899	899	899	899	774	774

Panel B: Loan Loss Provisions

	$\log \frac{\text{LLP}}{\text{Net Int. Income}}$		log DNLLP 1		log DNLLP 2	
	(1)	(2)	(3)	(4)	(5)	(6)
Crisis × Unmonitored	-0.359	-0.531***	0.610**	0.614**	0.704***	0.708***
	(0.25)	(0.18)	(0.25)	(0.25)	(0.24)	(0.24)
Controls	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.286	0.521	0.336	0.351	0.344	0.360
Observations	614	614	543	543	549	549

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table 7

Cash Flow Risk, Shareholder Value, and Professional Expenditures

In this table I study the treatment effect on value and professional expenditure for treated banks with above- and below-median cash flow risk, where cash flow risk is defined as in Table 1. Unreported control variables include leverage, Tier 1 Ratio, total assets, profitability, ROE, diversification and asset growth.

	log Tobin's q		log Market-to-Book		log Prof. Fees	
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated × Low CF Risk	0.001	-0.003	-0.015	-0.021	0.101	0.202**
	(0.00)	(0.01)	(0.04)	(0.04)	(0.10)	(0.10)
Post × Treated × High CF Risk	-0.018***	-0.014***	-0.152***	-0.114***	0.421***	0.338***
	(0.01)	(0.01)	(0.04)	(0.04)	(0.12)	(0.08)
Controls	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.373	0.434	0.436	0.525	0.135	0.271
Observations	1,547	1,547	1,547	1,547	737	737

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table 8

Ownership, Management Monitoring, and Value

In this table I study the post-treatment interaction between bank ownership, professional expenditure, and value, immediately following the treatment. I first assign treated banks to two groups based on whether their pre-treatment chairman ownership falls in the bottom two terciles (low-ownership) or in the top tercile (high-ownership) of the pre-treatment chairman ownership distribution in my sample. In the table, I then study how different levels of pre-treatment chairman ownership interact with changes in post-treatment professional expenditure and value. Since the focus of the table is the short-term treatment effect on professional expenditure and value, my estimates only include data from 2005 and 2006. Quarterly bank ownership data comes from S&P Capital IQ. Unreported control variables include total assets, leverage, the Tier 1 Ratio, profitability, ROE, diversification, and asset growth.

	log Prof. Fees		$\log \frac{\text{Prof. Fees}}{\text{Net Int. Income}}$		log Market-to-Book	
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated × Low Chair Own.	0.167*	0.183*	0.188*	0.187*	-0.079***	-0.077***
	(0.09)	(0.09)	(0.09)	(0.10)	(0.03)	(0.03)
Post × Treated × High Chair Own.	0.521***	0.512***	0.416***	0.477***	-0.028	-0.045*
	(0.07)	(0.06)	(0.11)	(0.08)	(0.05)	(0.03)
Controls	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.085	0.149	0.083	0.175	0.055	0.228
Observations	368	368	368	368	782	782

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

A Solving for the Optimal Contract

Substituting the manager's first incentive-compatibility (5) constraint into (2)-(4), the problem becomes finding $m(y)$ and $\pi_1(y)$ to maximize

$$\begin{aligned}\mathcal{L} &= \int_{\underline{y}}^{\bar{y}} [P - m(y)(P - \pi_1(y) + k)]\, dF(y) - I + \omega \int_{\underline{y}}^{\bar{y}} [y - P + m(y)(P - \pi_1(y))]\, dF(y) \\ &+ \int_{\underline{y}}^{\bar{y}} [\mu(y)[y - P + m(y)(P - \pi_1(y))] + \lambda(y)[P - m(y)\pi_1(y)]]\, dy, \end{aligned} \quad \text{(A.1)}$$

where ω, $\mu(y)$, and $\lambda(y)$ respectively denote the multipliers on (3), (4), and (6). Taking first-order conditions of (A.1) with respect to $m(y)$ yields

$$\frac{\partial \mathcal{L}}{\partial m(y)} = [P - \pi_1(y)][(\omega - 1) f(y) + \mu(y)] - kf(y) - \lambda(y)\pi_1(y). \quad \text{(A.2)}$$

If $m(y) = 1$, it must be that $\partial\mathcal{L}/\partial m(y) > 0$.[A.1] Therefore,

$$[P - \pi_1(y)][(\omega - 1) f(y) + \mu(y)] > kf(y) + \lambda(y)\pi_1(y) \geq 0. \quad \text{(A.3)}$$

This implies that $R - \pi_1(y) > 0$ and $\lambda^*(y) = 0$. On the other hand,

$$\frac{\partial \mathcal{L}}{\partial \pi_1(y)} = f(y)(1 - \omega) - \mu(y), \quad \text{(A.4)}$$

implying that to satisfy $\partial\mathcal{L}/\partial\pi_1(y) \geq 0$, $\omega^* \leq 1$. Then from (A.3), $\mu(y) > 0$ and the limited-liability constraint must bind such that in the monitoring region $\pi_1(y) = y$.

[A.1] For a given $\hat{y}$, if $m(\hat{y}) = 1$ it must be that $(\mathcal{L}(m(\hat{y}) = 1) - \mathcal{L}(m(\hat{y}) = 0))/(1 - 0) > 0$.

B Additional Results: Bank Value

Table B1

Robustness and Placebo Tests: Market-to-Book

This table reports sample bandwidth selection tests (Panel A) and placebo tests (Panel B) on my main Market-to-Book result. In the first four specifications of Panel A, I use two small samples of BHCs with average 2005 total assets between $400 and $600 million (Specifications (1) and (2)), and between $300 and $700 million (Specifications (3) and (4)). In the last four specifications I use two large samples of BHCs with total assets between $150 million and $1 billion (Specifications (5) and (6)), and between $150 million and $1.5 billion (Specifications (7) and (8)). In the first six specifications of Panel B, I use asset thresholds of $300 million, $750 million and $1 billion to separate treated and control BHCs. In Specifications (7) and (8) I use the last quarter of 2004 as treatment quarter, dropping post-2005 observations from the sample. In the last two specifications, I use the last quarter of 2006 as treatment quarter. The dependent variable in all specifications is the natural logarithm of Tobin's q. Unreported control variables include leverage, Tier 1 Ratio, total assets, profitability, ROE, diversification, and asset growth.

Panel A: Sample Bandwidth Selection

	$400M-600M		$300M-700M		$150M-1B		$150M-1.5B	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post × Treated	-0.087**	-0.088**	-0.055**	-0.072***	-0.052**	-0.073***	-0.055***	-0.075***
	(0.04)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.149	0.338	0.106	0.296	0.068	0.250	0.055	0.215
Observations	355	355	724	724	1,313	1,313	1,611	1,611

Panel B: Placebo Tests

	$300M Threshold		$750M Threshold		$1B Threshold		After 12/2004		After 12/2006	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Post × Treated	-0.03	-0.04	0.01	-0.00	0.03	0.01	-0.01	-0.00	-0.04	-0.04*
	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.03)	(0.02)
Controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.432	0.528	0.396	0.518	0.427	0.532	0.038	0.145	0.407	0.496
Observations	1,056	1,056	1,509	1,509	2,076	2,076	1,028	1,028	2,177	2,177

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table B2

Bank Size Manipulation Tests

This table shows point estimates (and associated t-statistics) of discontinuities in the cross-sectional density of bank assets around the $500 million policy implementation threshold. The smoothed density is obtained by first constructing a finely-gridded histogram of BHC total assets and then smoothing the histogram on each size of the threshold using local linear regression. The reported tests are then Wald tests of the null hypothesis that the log difference in the smoothed density above and below the threshold is zero. The optimal histogram bin size and local linear regression bandwidth are calculated as in McCrary (2008).

	2005-2007 Sample	2005 Sample	2006-2007 Sample
Discontinuity Estimate	0.0737	0.110	0.0379
t-stat	0.674	0.522	0.330
Observations	2,039	692	1,347

Table B3

Event Study Around Policy Date

In this table I report the results of an event study around the Fed policy date (March 6, 2006). For each bank in my sample, in the second half of 2005 I estimate the market model by regressing daily bank stock returns on a constant and the daily CRSP value-weighted index. I then use the estimated coefficients to compute abnormal stock returns (the difference between actual returns and market-model-predicted returns) around the event date. I choose a symmetric event window starting two weeks before and ending two weeks after the event day week. Next, I compute daily average abnormal returns in the treated and control groups, and then compute group-level Cumulative Abnormal Returns (CARs) as the sum of these daily average abnormal returns within the event window. I finally compute the t-statistics for the null hypothesis that CAR is zero as the ratio between CAR and the standard deviation of average abnormal returns, normalized by the inverse of the square root of the number of days in the event window (see, for example, Corrado (2011)). In the last two columns of the table, I repeat the same exercise using weekly returns instead of daily returns.

	Daily Frequency		Weekly Frequency	
	Treated	Control	Treated	Control
Cumulative Abnormal Return	-0.0180	0.00264	-0.0139	0.00725
t-stat	-2.144	0.277	-3.315	1.189
Observations (Event Window)	24	24	5	5

Table B4

Additional Robustness

This table provides robustness tests for the main results in Table 2 using different restrictions on the main sample. In the first two specifications, I restrict the sample to the years 2005 and 2006. In Specifications (3) and (4), I extend the sample to include the financial crisis. In Specifications (5) and (6) I only include survivor BHC (BHCs whose data is available for the entire 2004-2007 period). In Specifications (7) and (8), I drop banks that get listed on the stock market after the treatment. The dependent variables are the natural logarithm of Tobin's q (Panel A) and Market-to-Book (Panel B). Unreported control variables include leverage, Tier 1 Ratio, profitability, ROE, diversification, and asset growth.

Panel A: log Tobin's *q* Regressions

	2005-2006 Sample		2004-2008 Sample		Survivors Only		Listed in 2005	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post × Treated	-0.013***	-0.014***	-0.008**	-0.008**	-0.008*	-0.010**	-0.010***	-0.010***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.078	0.128	0.630	0.679	0.370	0.419	0.351	0.412
Observations	1,113	1,113	2,711	2,711	1,518	1,518	2,103	2,103

Panel B: log Market-to-Book Regressions

	2005-2006 Sample		2004-2008 Sample		Survivors Only		Listed in 2005	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post × Treated	-0.074***	-0.089***	-0.070**	-0.072***	-0.056*	-0.069**	-0.069***	-0.075***
	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.086	0.251	0.647	0.710	0.428	0.514	0.404	0.503
Observations	1,113	1,113	2,711	2,711	1,518	1,518	2,103	2,103

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table B5

Quarterly Treatment Effects

This table provides quarterly estimates of the treatment effect on bank value. The table is identical to Table 2, but here I assign an individual indicator to each post-treatment quarter. For example, the "Q1-2006 × Treated" indicator identifies observations for treated banks in the first quarter of 2006. All the variables are defined as in Table 1.

	log Tobin's q			log Market-to-Book		
	(1)	(2)	(3)	(4)	(5)	(6)
Q1-2006 × Treated	-0.009**	-0.010***	-0.010**	-0.057**	-0.065***	-0.060***
	(0.00)	(0.00)	(0.00)	(0.02)	(0.02)	(0.02)
Q2-2006 × Treated	-0.011***	-0.012***	-0.011***	-0.069**	-0.078***	-0.073***
	(0.00)	(0.00)	(0.00)	(0.03)	(0.03)	(0.03)
Q3-2006 × Treated	-0.012***	-0.013***	-0.013***	-0.079***	-0.089***	-0.084***
	(0.00)	(0.00)	(0.00)	(0.03)	(0.03)	(0.03)
Q4-2006 × Treated	-0.013***	-0.013***	-0.013***	-0.073**	-0.082***	-0.077***
	(0.00)	(0.00)	(0.00)	(0.03)	(0.03)	(0.03)
Q1-2007 × Treated	-0.009**	-0.010**	-0.009**	-0.065**	-0.073**	-0.068**
	(0.00)	(0.00)	(0.00)	(0.03)	(0.03)	(0.03)
Q2-2007 × Treated	-0.008	-0.009**	-0.009**	-0.064*	-0.079**	-0.075**
	(0.00)	(0.00)	(0.00)	(0.04)	(0.03)	(0.03)
Q3-2007 × Treated	-0.009*	-0.009*	-0.009*	-0.073*	-0.081**	-0.074**
	(0.00)	(0.00)	(0.00)	(0.04)	(0.03)	(0.03)
Q4-2007 × Treated	-0.007	-0.008	-0.008	-0.077*	-0.086**	-0.079**
	(0.01)	(0.01)	(0.01)	(0.05)	(0.04)	(0.04)
Leverage		0.318***	0.254**		5.475***	5.170***
		(0.12)	(0.10)		(0.81)	(0.68)
Tier 1 Ratio		0.376***	0.280***		2.540***	1.747***
		(0.08)	(0.07)		(0.51)	(0.48)
Other Controls	No	No	Yes	No	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.361	0.394	0.418	0.413	0.470	0.503
Observations	2,177	2,177	2,177	2,177	2,177	2,177

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table B6

Falsification Tests: Non-Fed-Regulated Firms

In this table, I study whether firms that are not regulated by the Fed experience a valuation discount at the beginning of 2006. I first merge quarterly Compustat with the Fed Bank Regulatory dataset to identify and remove BHCs from the sample. I then identify non-BHC financial firms as firms with CRSP SIC code between 6000 and 6799. Finally, I remove observations of firms with less than $400 million and more than $600 million in 2005 average total assets, and use a $500 million asset threshold to classify firms as "small" (average 2005 assets below the threshold) and "large" (average 2005 assets above the threshold). In Panel A, I investigate valuation changes in the falsification sample of non-financial firms. In Panel B, I investigate valuation changes in the sample of non-BHC financial firms. Unreported control variables include leverage (book value of debt divided by book value of equity), quarterly operating investment (percentage change in quarterly operating assets, where operating assets are the sum of PP&E, trade receivables net of trade payables, deferred taxes and investment tax credit, and other current assets), interest coverage (operating income before depreciation divided by interest expense), profitability (operating income divided by revenues), and Return on Assets (operating income divided by total assets).

Panel A: Non-Financials

	log Tobin's q			log Market-to-Book		
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Small Non-Fin.	-0.026	-0.042	-0.046	0.066	0.050	0.041
	(0.05)	(0.05)	(0.04)	(0.08)	(0.08)	(0.07)
log Assets		-0.185***	-0.197***		-0.288***	-0.304***
		(0.05)	(0.04)		(0.08)	(0.08)
Other Controls	No	No	Yes	No	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.161	0.190	0.225	0.139	0.165	0.226
Observations	3,459	3,459	3,459	3,268	3,268	3,268

Panel B: Non-BHC Financials

	log Tobin's q			log Market-to-Book		
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Small Non-BHC	0.109	0.040	-0.032	0.131	0.112	0.040
	(0.20)	(0.19)	(0.15)	(0.20)	(0.18)	(0.15)
log Assets		-0.383*	-0.415*		-0.105	-0.164
		(0.20)	(0.20)		(0.18)	(0.17)
Other Controls	No	No	Yes	No	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.231	0.337	0.508	0.310	0.314	0.558
Observations	299	299	299	299	299	299

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

C Additional Results: Management Monitoring

Table C1

Triple Differences: Policy Effect on Market-to-Book

In this table I investigate whether the negative correlation between post-treatment professional expenditure growth and value discounts is mechanically driven by changes in other variables that are correlated with professional expenditures. In practice, I repeat the same exercise as in Table 5 but interacting the "Post × Treated" indicator with ROE, total assets and Z-Score.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Post × Treated (*a*)	-0.072***	-0.071***	-0.084***	-0.072***	-0.069***	0.940	-0.072***	-0.073***	-0.065**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.72)	(0.03)	(0.03)	(0.03)
ROE (*b*)		0.689**	0.294						
		(0.33)	(0.42)						
(*a*) × (*b*)			0.654*						
			(0.34)						
log Assets (*c*)					-0.282***	-0.261***			
					(0.06)	(0.06)			
(*a*) × (*c*)						-0.078			
						(0.06)			
Z-Score (*d*)								0.000	0.000
								(0.00)	(0.00)
(*a*) × (*d*)									-0.000*
									(0.00)
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.368	0.377	0.380	0.368	0.403	0.406	0.368	0.376	0.377
Observations	2,623	2,623	2,623	2,623	2,623	2,623	2,623	2,516	2,516

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table C2

Audit Fees

In this table, I show the treatment effect on different components of bank professional expenditure, and in particular on audit fees. The data comes from annual AuditAnalytics (AA). In Panel A, I show the treatment effect on AuditAnalytics audit fees, non-audit fees (the sum of employee benefit plan audits, due diligence and accounting related to mergers and acquisitions, internal control reviews, and other fees) and the difference between annual professional fees from Compustat and total annual fees (sum of audit and non-audit fees) from AuditAnalytics. In Panel B, I scale the variables by annual net income from Compustat. Unreported control variables include annual leverage, Tier 1 Ratio, total assets, ROE, and diversification, defined as in Table 1.

Panel A: log Fees

	AA Audit Fees		AA Non-Audit Fees		Residual Prof. Fees	
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated	-0.029	-0.019	0.197*	0.207*	1.425***	1.306***
	(0.05)	(0.05)	(0.11)	(0.11)	(0.35)	(0.34)
Controls	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.415	0.470	0.020	0.044	0.182	0.232
Observations	894	894	855	855	218	218

Panel B: log Fees-to-Net Income

	AA Audit Fees		AA Non-Audit Fees		Residual Prof. Fees	
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated	-0.009	0.057	0.186	0.262**	1.316***	1.135***
	(0.10)	(0.07)	(0.15)	(0.13)	(0.38)	(0.42)
Controls	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.134	0.594	0.088	0.402	0.128	0.195
Observations	827	827	790	790	215	215

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table C3

Internal Controls and Post-Treatment Professional Expenditure

In this table I study the interaction between internal controls and professional expenditure. I assign treated banks to one of two groups based on whether they mention (the Internal Controls (IC) group) or they do not mention (the No-IC group) internal controls as a source of professional expenditure in the notes to their 2006 and 2007 10-K filings. The table provides an estimate of the treatment effect on professional expenditure in these two groups. Unreported control variables include total assets, profitability, ROE, diversification, and asset growth.

	log Professional Fees			$\log \frac{\text{Professional Fees}}{\text{Net Interest Revenue}}$		
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated × No-IC	0.059	0.057	0.105	0.086	0.083	0.087
	(0.09)	(0.09)	(0.08)	(0.10)	(0.10)	(0.09)
Post × Treated × IC	0.403***	0.422***	0.331***	0.337***	0.337***	0.326***
	(0.11)	(0.10)	(0.09)	(0.11)	(0.11)	(0.09)
Leverage		-1.981	-1.415		2.187	0.911
		(3.12)	(2.45)		(3.10)	(2.58)
Tier 1 Ratio		-4.557***	-2.467*		-1.431	-1.576
		(1.51)	(1.35)		(1.52)	(1.43)
Controls	No	No	Yes	No	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.102	0.128	0.187	0.054	0.068	0.127
Observations	923	923	923	923	923	923

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table C4

SEC Accelerated Filers

In this table, I investigate whether the observed changes in valuation and professional expenses after the treatment are due to size-related SOX provisions as opposed to the Fed policy. Similar to Iliev (2010), in Panel A I run a falsification test to investigate whether SEC resolution 70 FR 56825 (allowing small, non-accelerated SEC filers to postpone the implementation of SOX) has a valuation impact on non-accelerated SEC filers after the first quarter of 2006. In Panel B, I similarly investigate whether the treatment effect on professional fees comes from the subset of treated BHCs that are non-accelerated filers. Unreported control variables include leverage, Tier 1 Ratio, profitability, ROE, diversification, and asset growth.

Panel A: Accelerated Filers vs. Non-Accelerated Filers

	log Tobin's q		log Market-to-Book		log Prof. Fees		$\log \frac{\text{Prof. Fees}}{\text{Net Int. Income}}$	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post × Nonacc. Filer	-0.004	-0.005	-0.021	-0.036	0.128	0.111	0.108	0.118
	(0.00)	(0.00)	(0.02)	(0.02)	(0.08)	(0.08)	(0.09)	(0.08)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.039	0.090	0.061	0.217	0.031	0.077	0.043	0.106
Observations	985	985	985	985	461	461	461	461

Panel B: Interaction Effects, Treated × Accelerated Filers

	log Tobin's q		log Market-to-Book		log Prof. Fees		$\log \frac{\text{Prof. Fees}}{\text{Net Int. Income}}$	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post × Nonacc. Treated	-0.011***	-0.011***	-0.055**	-0.077***	0.246***	0.213**	0.207**	0.227***
	(0.00)	(0.00)	(0.02)	(0.02)	(0.08)	(0.08)	(0.09)	(0.08)
Post × Acc. Treated	-0.026***	-0.027***	-0.130***	-0.142***	0.204	0.214	0.225	0.201
	(0.01)	(0.01)	(0.05)	(0.04)	(0.15)	(0.15)	(0.16)	(0.15)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.099	0.153	0.098	0.262	0.056	0.097	0.062	0.124
Observations	1,025	1,025	1,025	1,025	480	480	480	480

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table C5

Summary Statistics: Funding Costs, Profitability, and Earnings Smoothing

This table reports summary statistics for the dependent variables used in Section 5.1.1, both in the 2006-2008 full sample and in the two sub-samples of banks with total assets below \$500 million and with total assets between \$500 and \$700 million (the "unmonitored" and "monitored" groups, respectively). In the table, LLP stands for Loan Loss Provisions, while DNLLP stands for Discretionary Negative Loan Loss Provisions (see Table 6). All the variables are constructed using data from quarterly Compustat Bank, and are reported in percentage terms.

	2006-2008 Sample				Unmonitored				Monitored			
	N	Mean	Med.	SD	N	Mean	Med.	SD	N	Mean	Med.	SD
Int. Expense/Total Loans	1,129	1.02	0.99	0.32	625	1.01	0.98	0.36	504	1.02	1.00	0.27
Int. Income/Total Loans	1,128	2.30	2.21	0.50	625	2.33	2.22	0.59	503	2.25	2.21	0.36
ROE	1,067	1.24	1.99	3.89	613	1.01	1.92	3.97	454	1.54	2.13	3.75
LLP/Net Interest Income	1,110	0.00	0.00	0.03	612	0.00	0.00	0.03	498	0.00	0.00	0.02
DNLLP 1	645	6.55	4.61	6.33	359	6.68	4.64	6.38	286	6.38	4.49	6.28
DNLLP 2	651	6.62	4.57	6.33	364	6.70	4.75	6.36	287	6.51	4.41	6.30

Table C6

Funding Costs and Earnings Smoothing: Robustness and Placebo

In this table, I show two sets of robustness test on the results of Table 6. In Panel A, I show changes in the funding costs (interest expense divided by interest income, Specification (1), and interest expense divided by total loans, Specification (2)), profitability (ROA and ROE), LLP (LLP to loans, Specification (5), and LLP to net interest income, Specification (6)), and discretionary LLP (DLLP 1 and 2) of unmonitored banks during the financial crisis, where I restrict the sample to banks that survive for the entire 2006-2008 period. In Panel B, I use an alternative threshold of $400 million to define unmonitored banks. Unreported controls include previous-quarter Tobin's *q*, leverage, Tier 1 Ratio, total assets, diversification, and asset growth in the first four specifications of both panels, as well as operating profitability and ROE in the last four specifications.

Panel A: Surviving Banks

	Funding Costs		ROA/ROE		LLP		DNLLP	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crisis × Unmonitored	0.033	0.061**	-0.080	-0.088	-0.519***	-0.553**	0.463*	0.619**
	(0.02)	(0.02)	(0.10)	(0.10)	(0.19)	(0.22)	(0.25)	(0.26)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.578	0.756	0.261	0.233	0.416	0.562	0.379	0.385
Observations	645	645	560	560	433	433	409	417

Panel B: $400M Monitoring Threshold Placebo Sample

	Funding Costs		ROA/ROE		LLP		DNLLP	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crisis × Small	0.011	0.031	-0.140	-0.156	-0.144	-0.078	0.379	0.492
	(0.02)	(0.03)	(0.13)	(0.13)	(0.26)	(0.29)	(0.27)	(0.30)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.513	0.748	0.254	0.236	0.350	0.526	0.340	0.318
Observations	911	911	783	783	630	630	541	553

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table C7

Robustness: Cash Flow Risk, Shareholder Value, and Professional Expenditure

In this table I perform a robustness check on the results of Table 7 by using alternative risk measures to sort treated banks. In Panel A I sort treated banks based on whether their average Z-Score is above or below the median Z-Score in my sample. Similarly, in Panel B I sort treated banks based on whether their average equity volatility is above or below the median equity volatility in my sample. Both Z-Score and equity volatility are defined as in Table 5. Unreported control variables include leverage, Tier 1 Ratio, total assets, profitability, ROE, diversification and asset growth.

Panel A: Z-Score Sorting

	log Tobin's q		log Market-to-Book		log Prof. Fees	
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated × Low Z-Score	-0.008	-0.008*	-0.050	-0.058*	0.244*	0.215**
	(0.00)	(0.00)	(0.03)	(0.03)	(0.14)	(0.09)
Post × Control × High Z-Score	-0.012***	-0.013***	-0.086***	-0.088***	0.272***	0.269***
	(0.00)	(0.00)	(0.03)	(0.03)	(0.09)	(0.09)
Controls	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.361	0.419	0.414	0.504	0.076	0.182
Observations	2,177	2,177	2,177	2,177	999	999

Panel B: Equity Volatility Sorting

	log Tobin's q		log Market-to-Book		log Prof. Fees	
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated × Low Volatility	-0.006	-0.007	-0.027	-0.041	0.320***	0.267***
	(0.00)	(0.00)	(0.03)	(0.03)	(0.10)	(0.09)
Post × Treated × High Volatility	-0.012***	-0.013***	-0.095***	-0.094***	0.212*	0.227***
	(0.00)	(0.00)	(0.03)	(0.03)	(0.12)	(0.08)
Controls	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.360	0.417	0.416	0.505	0.079	0.183
Observations	2,160	2,160	2,160	2,160	995	995

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table C8

Chairman Ownership and Professional Expenditure Persistence

This table shows the persistence of the treatment effect on professional expenditure for treated banks with chairman ownership in the bottom two terciles of the chairman ownership distribution in my sample, as well as in the top tercile of the distribution. The independent variable is the natural logarithm of professional expenditures. Unreported control variables include leverage, Tier 1 Ratio, total assets, profitability, ROE, diversification and asset growth.

	Low Chairman Own. Treated			High Chairman Own. Treated		
	(1)	(2)	(3)	(4)	(5)	(6)
Q1-2006 × Treated	0.148	0.160*	0.173*	0.272**	0.293***	0.238**
	(0.10)	(0.09)	(0.09)	(0.11)	(0.10)	(0.09)
Q2-2006 × Treated	0.288**	0.280**	0.290***	0.395***	0.404***	0.314**
	(0.11)	(0.11)	(0.11)	(0.14)	(0.13)	(0.12)
Q3-2006 × Treated	0.144	0.153	0.150	0.406***	0.429***	0.337***
	(0.11)	(0.10)	(0.10)	(0.13)	(0.13)	(0.12)
Q4-2006 × Treated	0.033	0.020	0.027	0.421***	0.424***	0.328**
	(0.12)	(0.11)	(0.11)	(0.16)	(0.15)	(0.16)
Q1-2007 × Treated	0.210*	0.196*	0.209**	0.484***	0.486***	0.389**
	(0.12)	(0.12)	(0.10)	(0.18)	(0.16)	(0.16)
Q2-2007 × Treated	0.275**	0.277**	0.265***	0.511***	0.531***	0.414***
	(0.13)	(0.12)	(0.10)	(0.17)	(0.15)	(0.13)
Q3-2007 × Treated	0.351**	0.344***	0.343***	0.530***	0.541***	0.447***
	(0.14)	(0.13)	(0.10)	(0.18)	(0.16)	(0.14)
Q4-2007 × Treated	0.198	0.188	0.167	0.338	0.333	0.259
	(0.20)	(0.20)	(0.17)	(0.27)	(0.25)	(0.24)
Controls	No	Yes	Yes	No	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.069	0.098	0.173	0.120	0.137	0.190
Observations	875	875	875	667	667	667

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table C9

Chairman Ownership and Market-to-Book Discount Persistence

This table shows the persistence of the treatment effect on Market-to-Book for treated banks with chairman ownership in the bottom two terciles of the chairman ownership distribution in my sample, as well as in the top tercile of the distribution. The independent variable is the natural logarithm of Market-to-Book. Unreported control variables include leverage, Tier 1 Ratio, total assets, profitability, ROE, diversification and asset growth.

	Low Chairman Own. Treated			High Chairman Own. Treated		
	(1)	(2)	(3)	(4)	(5)	(6)
Q1-2006 × Treated	-0.045*	-0.053**	-0.051**	-0.052*	-0.067**	-0.056**
	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)
Q2-2006 × Treated	-0.061**	-0.069**	-0.068**	-0.061*	-0.075**	-0.064*
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Q3-2006 × Treated	-0.068**	-0.075**	-0.076***	-0.075**	-0.096***	-0.084**
	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)
Q4-2006 × Treated	-0.067**	-0.069**	-0.069**	-0.063	-0.085**	-0.071*
	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)
Q1-2007 × Treated	-0.069**	-0.072**	-0.070**	-0.055	-0.075**	-0.066*
	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)
Q2-2007 × Treated	-0.060	-0.070**	-0.070**	-0.052	-0.082*	-0.074*
	(0.04)	(0.04)	(0.03)	(0.05)	(0.05)	(0.04)
Q3-2007 × Treated	-0.075*	-0.075**	-0.070**	-0.049	-0.082*	-0.061
	(0.04)	(0.04)	(0.03)	(0.05)	(0.04)	(0.04)
Q4-2007 × Treated	-0.094*	-0.094**	-0.090**	-0.059	-0.086	-0.077
	(0.05)	(0.04)	(0.04)	(0.06)	(0.05)	(0.05)
Controls	No	Yes	Yes	No	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.425	0.484	0.513	0.410	0.474	0.524
Observations	1,910	1,910	1,910	1,503	1,503	1,503

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

D Tests of Additional Hypotheses

Table D1

Government Tail Risk Insurance

In this table, I investigate the treatment effect on treated banks' exposure to bank-specific tail risk (Gandhi and Lustig (2015)). In each quarter from Q1-2004 to Q4-2008, I sort commercial bank stocks into five size portfolios based on their market capitalization at the end of the previous quarter. I compute daily value-weighted excess returns on each of the five size portfolios, and regress these daily excess returns on the Fama-French *market*, *hml* and *smb* risk factors (from Kenneth French's website), and two factors measuring bank interest rate risk (*ltg*, the yield on a 10-year treasury note minus the yield on a 2-year treasury note) and credit risk (*crd*, the Moody's Seasoned Aaa Corporate Bond Yield index minus the yield on a 10-year treasury note). The data used to construct *ltg* and *crd* comes from the Federal Reserve of St. Louis' website. I combine the residuals from the time-series regressions in a $(T_d \times 5)$ matrix (where T_d is the number of daily portfolio return observations for the period 2004-2007), and obtain the size factor as the second principal component of this matrix. The table shows the treatment effect on the quarterly loading of each bank's excess returns on the size risk factor. The loadings I use as dependent variables in the first three specifications come from the market model augmented with the bank size factor, while the loadings in the last three specifications come from the Gandhi-Lustig (GL) specification that includes the bank size factor and the other orthogonal factors (*market*, *hml*, *smb*, *ltg* and *crd*) as risk factors. The unreported liquidity controls include all the liquidity variables from Table D3, Panel A. The remaining unreported controls include leverage, Tier 1 Ratio, profitability, ROE, diversification, and asset growth.

	Factor Loading (Market Model)			Factor Loading (GL Model)		
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated	0.000	0.001	0.000	0.000	0.001	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Liquidity Controls	No	Yes	Yes	No	Yes	Yes
Other Controls	No	No	Yes	No	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.016	0.025	0.047	0.014	0.021	0.039
Observations	2,044	2,044	2,044	2,044	2,044	2,044

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table D2

Voluntary Reporting

This table compares the treatment effect on Tobin's q (Panel A) and Market-to-Book (Panel B) across two sub-groups of treated BHCs. The first sub-group consists of treated BHCs that voluntarily file form FR Y-9C after the treatment. The second sub-group consists of treated BHCs that stop filing form FR Y-9C after the treatment. Unreported control variables include professional fees, profitability, ROE, diversification, and asset growth.

Panel A: log Tobin's q Regressions

	Voluntary Reporting			Not Reporting		
	(1)	(2)	(3)	(4)	(5)	(6)
Post $\times$ Treated	-0.012**	-0.012***	-0.012***	-0.010**	-0.011***	-0.010***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leverage		0.395**	0.311**		0.291**	0.211*
		(0.15)	(0.13)		(0.13)	(0.11)
Tier 1 Ratio		0.489***	0.366***		0.293***	0.184***
		(0.11)	(0.11)		(0.07)	(0.06)
Other Controls	No	No	Yes	No	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.360	0.404	0.425	0.353	0.374	0.407
Observations	1,412	1,412	1,412	1,922	1,922	1,922

Panel B: log Market-to-Book Regressions

	Voluntary Reporting			Not Reporting		
	(1)	(2)	(3)	(4)	(5)	(6)
Post $\times$ Treated	-0.082*	-0.089**	-0.084**	-0.078***	-0.084***	-0.075***
	(0.04)	(0.03)	(0.04)	(0.03)	(0.03)	(0.02)
Leverage		5.873***	5.307***		5.215***	4.868***
		(0.94)	(0.88)		(0.91)	(0.74)
Tier 1 Ratio		3.053***	2.236***		2.062***	1.094**
		(0.71)	(0.73)		(0.48)	(0.42)
Other Controls	No	No	Yes	No	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.420	0.487	0.503	0.407	0.462	0.512
Observations	1,412	1,412	1,412	1,922	1,922	1,922

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table D3

Liquidity, Volatility, and Market Frictions

In this table, I study the treatment effect on liquidity, volatility, and market information responsiveness of treated banks' stocks. In Panel A, I show the treatment effect on the Holden (2009) Effective Tick Size, the Corwin and Schultz (2012) Bid-Ask Spread, and the Amihud (2002) liquidity measures (constructed as in the referenced papers). Moreover, I show the effect on Zero Days Traded (number of days in which a stock is not traded) and Turnover (daily volume divided by shares outstanding). Effective Tick Size and Zero Days Traded are computed on a quarterly basis, while Bid-Ask Spread, Amihud and Turnover are quarterly averages of daily measures. In Panel B, I show the treatment effect on quarterly return volatility, quarterly idiosyncratic volatility (IdVol) from the Fama-French four factor model (FF4), and quarterly idiosyncratic volatility from the Adrian et al. (2015) Financial CAPM model (FCAPM). Finally, in Specifications (7)-(10) I show the effect on quarterly measures of price responsiveness to market information (D1 and D2, as in Hou and Moskowitz (2005)). All the variables used in the table are constructed using daily stock returns from CRSP. The control variables in Panels A and B include leverage, Tier 1 Ratio, profitability, ROE, diversification, and asset growth. Moreover, Panel B includes all the liquidity variables from Panel A as additional controls.

Panel A: Liquidity

	Effective Tick		CS Spread		Amihud		Zero Days		Turnover	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Post × Treated	-0.000	-0.000	-0.003	-0.003	0.000*	0.000*	0.006	0.001	-0.000	-0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.037	0.089	0.252	0.299	0.043	0.054	0.082	0.118	0.049	0.097
Observations	2,044	2,044	2,044	2,044	2,044	2,044	2,044	2,044	2,044	2,044

Panel B: Equity Volatility and Market Delay

	Total Vol		FF4 IdVol		FCAPM IdVol		D1		D2	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Post × Treated	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	0.040*	0.030	0.245	0.222
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)	(0.02)	(0.40)	(0.39)
Liquidity Controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Other Controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.212	0.629	0.208	0.608	0.205	0.610	0.018	0.040	0.013	0.021
Observations	2,044	2,044	2,044	2,044	2,044	2,044	2,044	2,044	2,044	2,044

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.

Table D4

Leverage and Capital Ratios

In this table, I investigate the treatment effect on bank leverage and capital requirements. In Panel A, I investigate the treatment effect on three different measures of bank leverage, namely liabilities divided by total assets, divided by the book value of equity and divided by total earning assets (the sum of cash and due from banks, assets sold under repurchase agreements, trading account securities, investment securities, loans net of loan loss allowance, customer acceptances, and other assets). In Panel B, I investigate the treatment effect on the Tier 1, Tier 2 and Combined (Tier 1 plus Tier 2) Capital Ratio of treated banks. The Tier 1 Ratio is the sum of equity capital and minority interests, divided by risk-weighted assets. The Tier 2 Ratio is the sum of cumulative preferred stock, qualifying debt, and allowance for credit losses minus investment in certain subsidiaries, divided by risk-weighted assets. Unreported control variables include profitability, ROE, diversification, and asset growth.

Panel A: Leverage

	$\log \frac{\text{Liabilities}}{\text{Assets}}$		$\log \frac{\text{Liabilities}}{\text{Equity}}$		$\log \frac{\text{Liabilities}}{\text{Earning Assets}}$	
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated	-0.001	-0.001	-0.009	-0.012	-0.002	-0.002
	(0.00)	(0.00)	(0.03)	(0.03)	(0.00)	(0.00)
Controls	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.012	0.048	0.014	0.073	0.038	0.111
Observations	2,575	2,575	2,575	2,575	2,575	2,575

Panel B: Capital Ratios

	log Tier 1 Ratio		log Tier 2 Ratio		log Combined Ratio	
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treated	0.026	0.033	-0.064	-0.065	0.007	0.013
	(0.02)	(0.02)	(0.05)	(0.05)	(0.02)	(0.02)
Controls	No	Yes	No	Yes	No	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
BHC FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.028	0.175	0.050	0.056	0.062	0.176
Observations	2,178	2,178	2,159	2,159	2,199	2,199

Note: Standard errors (in parentheses) are clustered at the BHC-level. ***, **, and * respectively denote statistical significance at the 1%, 5%, and 10% levels.