

The Stock Market and Bank Risk-Taking

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Abstract

We argue that stock market pressure to generate earnings encourages banks to increase risk. We measure risk using confidential supervisory ratings as well as financial information released in regulatory filings. We document that there is an increase in the risk-taking behavior of banks that become part of publicly traded bank holding companies (BHCs) either through a public listing (IPO) or acquisition by a publicly-traded BHC. This increase in risk is greater than the increase in risk for a control group of banks that intended a private-to-public transition through an IPO or acquisition, but where the deal failed. This finding is robust to instrumenting deal failure with an index of stock returns shortly after deal announcement. There are a number of explanations of this finding, but cross-sectional and time-series evidence points to stock-market earnings pressure. In particular, we find that the relative increase in risk by banks that transition to being publicly held is more pronounced if they have good governance, consistent with the idea that stock-price maximization underlies the incentive to take risk. We also find more pronounced effects in periods when the Fed funds rate and credit spreads are low. This finding is consistent with the idea that when there is downward pressure on bank earnings, publicly-held banks tend to increase risk more than privately-held banks.

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1. Introduction

It is now well understood that excessive risk taking by financial institutions is one of the main causes of financial crises and severe recessions (Jorda, Schularick and Taylor, 2013). Yet, we still know relatively little about what gives rise to such risk-taking in the first place. Numerous authors have posited that part of the problem is tied to management compensation, which is often structured so that managers benefit from good performance but bear only a small share of the costs of bad performance (Bolton, Mehran and Shapiro, 2010; and Bebchuk, Cohen and Spamann, 2010). Others have argued that explicit or implicit debt guarantees by the government allow firms to take socially excessive risk without bearing the private costs (Kane, 1985; Pennacchi, 1987; and Farhi and Tirole, 2012). And Gennaioli, Shleifer and Vishny (2012) attribute excessive risk-taking to a behavioral bias that leads financial firms to neglect the risk of adverse tail outcomes.

In this paper, we put forth and empirically examine another explanation -- namely that pressure from the stock market induces financial institutions to take more risk. Our explanation is motivated by the observation that the growth of the U.S. banking sector over the past 25 or so years was concentrated among publicly-traded banks. In fact, from 1990 – 2014 the total assets of publicly-traded banks in the U.S. increased by about six-fold from \$2 trillion to \$12 trillion, while those of privately-held banks merely doubled from \$1 trillion to \$2 trillion. (See Figure 1.)

Our explanation for the role of the stock market in increasing bank risk is based on the "short-termism" model of Stein (1989), which shows that when firms place weight on short-term stock prices they will take difficult-to-observe actions that boost current earnings at the expense of long-run profitability. Stock market investors rationally interpret higher current earnings as attributable in part to better long-run fundamentals and value. This, in turn, creates incentives for firms to pump up short-term earnings. This type of reasoning has often been used to argue that the

stock market induces firms to take too little risk because long-term risky projects like R&D lower short-run profitability. But in banking the easiest way to increase short-run profitability is to take more risk. For example, banks can loosen lending standards, which increases the current yield on their loans but also subsequent default rates. And they can use more short-term funding, thereby lowering current funding costs but exposing them to greater rollover and run risk. We also examine other related potential mechanisms for increased risk-taking, which include an explanation based on the “quiet life” evidence of Bertrand and Mullainathan (2003), decreased managerial ownership, and access to lower cost financing.

To measure bank risk taking, we use confidential information on bank safety and soundness ratings as assessed by bank supervisors. The supervisory ratings include the six so-called "component" ratings (Capital Adequacy, Asset Quality, Management, Earnings, Liquidity, and Sensitivity to Market Risk), a "composite" CAMELS rating based on the component ratings, and a loan-level risk rating from the Federal Reserve's Survey of Terms of Business Lending (STBL). We supplement the confidential data with publicly available data from regulatory filings on financial measures of risk such as capital, portfolio composition, and reliance on less stable funding. Finally, we combine these data with historical information on the stock listing status of each bank's (top tier) holding company.

A valuable feature of our data is that we are able to track changes in risk-taking behavior when a bank transitions from being privately held to one that is held by a publicly-traded bank holding company (BHC). This transition could occur either through an initial public offering (IPO) or an acquisition of a privately-held bank by a publicly-traded BHC. Because acquired banks often remain legally distinct companies that undergo their own supervisory reviews and must still submit their own regulatory filings, we are able to track them following an acquisition. We start by

presenting evidence that when banks make this transition, their CAMELS ratings deteriorate and the risk of their loans increases. In addition, after a transition to public listing status bank there is an increase in risk based on financial information in regulatory filings, such as lower capital ratios, a shift to riskier asset types, and more short-term funding.

While this evidence is consistent with stock market pressure leading to an increase in risk, it is difficult to interpret this empirical relationship as being causal; the factors that give rise to the IPO or acquisition in the first instance could be correlated with a change in the environment that increases risk or the incentive to take risk. For example, an IPO might come in response to growth opportunities associated with population and business expansion that increase the demand for residential and commercial mortgages. But taking advantage of these growth opportunities could increase risk.

To address this identification challenge, we use a difference-in-differences (DD) approach that compares the change in risk of banks that switch ownership status (the treatment group) to a set of banks that intended to go public or be acquired but whose deals were cancelled (the control group). The idea here -- following Seru (2014) and Bernstein (2014) in their work on innovation - is that we are comparing the change in risk of banks in the treatment group to a set of banks in the control group whose decisions were likely driven by the same potentially endogenous factors. For example, if the intention to go public is correlated with an expansion of growth opportunities and increase in risk, then the comparison with banks that intended to go public but did not end up doing so should alleviate the concern that the treatment group is facing a substantially different environment than the control group. Using this estimation strategy, we find a significant deterioration in CAMELS, loan risk ratings, and risk measures based on financial information in regulatory filings relative to the control group of banks with cancelled IPOs or acquisitions. These

findings are robust to matching to the control group of banks with deal cancellations based on size. Moreover, there are no significant differences in pre-treatment trends in CAMELS rating. Finally, we find that these newly listed and acquired treatment banks subsequently underperform during the crisis, with for example lower return on equity and higher ratios of non-performing loans.

While this approach goes some distance in dealing with endogeneity concerns, it is possible that deal cancellations could be correlated with factors related to bank risk. Therefore, we follow Bernstein (2014) and instrument for deal completion with an index of stock returns in the two month after the deal is announced. Deals are more likely to be cancelled when an index of bank stock returns are low. Under the assumption that stock returns over this short window are uncorrelated with longer-term risk-taking incentives, the predicted value of this first-stage regression should be purged of the component of deal failure that could be correlated with risk-taking incentives. Indeed, we find that the results are robust to this IV approach.

To support our causal interpretation, we also use a different control group of successful mergers, but one where there is no change in public/private status. In particular, we find that when private banks are acquired by another private bank or when public banks are acquired by other public banks there is no reduction in CAMELS or loan risk ratings, nor is there an increase in risk measures based on financial information in regulatory filings.

We have interpreted the results as evidence that banks try to pump up short-term earnings to influence market perceptions of their long-run value as in the short-termism model of Stein (1989). To buttress this interpretation, we present evidence that the effects we have identified are stronger among banks that are subjected to greater stock market pressure. In particular, we show that supervisory ratings as well as a measure of risk based on regulatory filings deteriorate more if

the bank has a smaller board, fewer insider board members, and better governance according to the measure developed by Gompers, Ishii and Metrick (2003). Thus, the more banks are focused on the stock price, the more risk they take. In addition, we find that treatment banks increase risk most relative to control banks during periods where the Fed funds rate and credit spreads are low. This supports the notion that banks are trying to pump up short-term earnings through greater risk when there is more downward pressure on earnings in a low interest-rate and credit-risk environment.

This cross-sectional evidence is arguably consistent with a variant of our earnings pressure explanation – namely that when managers of banks are insulated from the stock market, they want to lead a low-risk, "quiet life" as suggested by the evidence of Bertand and Mullainathan (2003) in their work on non-financial firms. In this interpretation, it is possible that banks increase risk from a level that is too low relative to the level that maximizes firm value. While we cannot completely rule out this interpretation, the fact that the results are stronger in a low interest-rate and credit-risk environment is difficult to square with the "quiet life" story.

These cross-sectional findings are also difficult to square with other potential explanations of our baseline findings. Among these is that banks increase risk because owner-managers of private banks reduce their shareholdings – and thus the risk to which they are exposed – when they take the firm public or sell to another firm. However, this explanation would not predict stronger effects for better-governed banks. And it would predict the same effect when private banks sell to other private banks, which is not what we find. Finally, it is possible that a bank's optimal risk level is greater if it has greater access to financing when they go public or are sold to a larger bank. But this interpretation is also difficult to square with our cross-sectional evidence.

The remainder of this paper is organized as follows. Section 2 describes the data and presents the basic finding that banks increase risk when they go public or are acquired by a publicly traded BHC. Section 3 then attempts to establish that this is a causal relationship through our DD approach. Section 4 introduces cross-sectional evidence in an attempt to better understand the mechanism underlying our baseline findings of an increase in risk when banks are held by publicly-traded entities. Section 5 concludes.

2. Data and Descriptive Evidence

To construct the sample, we start with the universe of U.S. commercial banks that are held by a bank holding company (BHC) and have non-missing information on total assets in the Call Reports between 1990 and 2012. This yields a starting panel of 220,194 commercial bank-quarter observations for 8,314 (3,511) unique commercial banks (BHCs). Using several sources, we supplement a variety of measures of risk based on bank balance sheet characteristics with confidential information on bank safety and soundness ratings as assessed by bank supervisors, and with historical information on the identity and stock listing status of each bank's (top-tier) holder.

2.1. Information on Bank Risk Taking

We examine two primary measures of bank risk taking. First, we use measures based on confidential supervisory information from the National Information Center (NIC) of the Federal Reserve System. The NIC dataset covers all on-site examinations of safety and soundness conducted by banking regulators, whose main outcome is six "component" ratings -- Capital Adequacy, Asset Quality, Management, Earnings, Liquidity, and Sensitivity to Market Risk -- and an overall "composite" CAMELS rating. Each of these ratings ranges between a value of 1 and 5,

with the risk profile and risk-management practices of banks rated 1 or 2 considered "strong" and those rated 3, 4, or 5 considered "weak." An advantage of having individual component ratings is that we can measure bank risk taking outcomes along several dimensions. In addition, compared to balance sheet variables, the supervisory ratings also capture an ex-ante aspect of bank risk taking since they are assigned taking into account not only the current risk profile of the bank, but also the ability of management to identify, measure, monitor and control the six types of risks that are rated.

We complement these data with confidential information on loan-level risk from the Federal Reserve's Survey of Terms of Business Lending (STBL), which is available for the 1997 to 2012 period (see Berger, Kashyap, and Scalise (1995) for an early study that uses STBL).² The survey asks participating banks about the terms of all commercial and industrial loans issued during the first full business week of the middle month in every quarter. Banks report the risk rating of each loan by mapping their internal loan risk ratings to a scale defined by the Federal Reserve. Loan risk ratings vary from 1 to 5, with 5 representing the highest risk.

Second, we use Call Reports to construct a set of risk measures based on the composition of bank capital and asset portfolios, the maturity structure of bank liabilities, and the sources of bank income. Standard bank balance sheet characteristics such as total assets and Tier 1 capital ratio, are also retrieved from Call Reports. Details on the definition of the variables used in the analysis are in Appendix A.

² The STBL is a quarterly survey on the terms of business lending of a stratified sample of about 400 banks conducted by the U.S. Federal Reserve, which typically covers a very large share of assets in the U.S. banking sector. For example, the combined assets of the banks responding to the survey for the fourth quarter of 2011 represented about 60 percent of all assets of U.S. commercial banks.

2.2. Information on Private-to-Public Transitions

To construct our sample of private-to-public public transitions, we use the NIC data and several other standard sources of historical information on BHC stock listing status. From the NIC data, we retrieve the full history of identifiers of the BHC that is the (top-tier) holder of each commercial bank, and an indicator variable for whether the BHC reports to the SEC. Using this variable as a starting point, we construct an indicator variable for whether the bank is privately held or part of a publicly-traded BHC by using historical stock market listing information from the New York Fed CRSP-FRB link and lists of all IPO filings of financial firms (SIC codes between 6000 and 6999) from Thomson-Financial's SDC New Issues database, Capital IQ Key Developments database, and SNL Financial Capital Offerings database. This process leads to a final merged BHC-commercial bank sample running from 1990-2012 of 178,980 commercial bank-quarter observations for 7,166 (3,251) unique commercial banks (BHCs) whose historical stock listing status we are able to confirm.

The sample of private-to-public transitions used in the analysis – which we refer to as the “Switchers” sub-sample – is comprised of all commercial banks that are in the final merged BHC-commercial bank sample and experience a private-to-public public transition sometime during the 1990-2012 period. Private-to-public transitions occur in one of two ways: either a privately-held bank completes an initial public offering (IPO) or a privately held bank is acquired by a publicly-traded bank holding company (BHC). To identify the transitions due to IPOs, we extract the filings that are classified as completed in the lists of all IPO filings from the three sources detailed in the previous paragraph. We identify transitions due to acquisitions using the Merger Table from the NIC data, which keeps a full historical record of dates and identities of target and acquirer banks for the universe of all completed acquisitions of U.S. commercial banks. We are able to track the ratings of a commercial bank after it has been acquired because acquired banks often remain

legally distinct companies that must still submit their own regulatory filings and, thus, retain their identifier. The Switchers sub-sample consists of 1,294 (758) commercial banks (BHCs) that underwent a private-to-public transition sometime during the 1990-2012 period, yielding 26,776 commercial bank-quarter observations. Of these transitions, 406 (206) are commercial banks (BHCs) that completed an IPO, which yield 15,411 commercial bank-quarter observations.

Finally, we also construct a sub-sample of private-to-public transitions that were attempted but failed either because the IPO filing was withdrawn or the acquisition was not completed. This sub-sample serves as the control group in our baseline identification strategy. After submitting an initial registration statement to the SEC (usually Form S-1) to announce their intention to go public, filers have the option to withdraw the IPO filing by submitting the SEC's Form RW during the marketing period of the equity issuance to investors (the "book-building" phase). Potential acquirers also typically announce their intention to bid for a target, which can be followed by an announcement to withdraw the bid. To identify withdrawn IPOs, we flag the filings that are classified as withdrawn from the lists of all IPO filings contained in the three sources detailed above. To identify withdrawn acquisitions, we use all acquisitions filings of financial firms that are classified as not completed from analogous data sources, which include Thomson-Financial's SDC M&A database, Capital IQ Key Developments database, and SNL Financial Mergers and Acquisitions database. Filing withdrawals are common both in IPO and M&A markets, as approximately 15 percent of all IPO and M&A announcements of financial firms are ultimately withdrawn, a figure that is in line with the 20 percent of IPO filings by innovative firms that are withdrawn as reported in Bernstein (2014). The control group consists of 227 (176) commercial

banks (BHCs) that either withdrew their IPO application or were the target of a withdrawn private-to-public acquisition attempt, yielding 4,793 commercial bank-quarter observations.³

2.3. Descriptive Statistics and Suggestive Evidence

Table 1 presents summary statistics of our main sample. Banks in the Switchers sub-sample tend to be smaller and somewhat riskier based on the supervisory ratings relative to other banks in the full sample. In Table 2, we provide evidence of a statistical relationship between ownership status of the BHC (public or private) and the supervisory risk variables as well as the risk measures based on Call Report data. Specifically, in Panels A and B we report results of pooled (Panel A) and firm fixed effects (Panels B) regressions, with each of the eight supervisory ratings as the dependent variable in a ten-year window running up to the crisis (1997-2006). We also report results for two alternative scores that are constructed by aggregating across the ratings (Columns 9 and 10). The explanatory variables are a dummy variable that equals one for commercial banks that are held by a publicly-traded BHC, bank size (total assets of the commercial bank), as well as year-quarter fixed effects.

Across the full set of ratings, the coefficient of the publicly-traded BHC variable is positive and strongly statistically significant, indicating that publicly-traded banks score consistently worse across all supervisory ratings. In Panel C, we report the results of the same fixed effect regressions except that the dependent variables in these regressions are risk measures based on Call Report data. These risk measures are all greater after banks transition to publicly-traded status. The last column in Panel C reports the results of a regression in which the dependent variable is “Risk Factor,” which is a linear combination of the risk measures based on Call Report data, with weights

³ For 45 commercial banks these failed transition attempts are due to a withdrawn IPO.

calculated using principal component analysis. Table B.4 shows that the estimates are somewhat stronger for the sub-sample of banks that switched ownership status via an IPO.

There are a number of cross-sectional studies (Kwan, 2004 and Nichols et al., 2009) that do not find statistically significant differences in risk across ownership status especially after controlling for size. This may be because their tests use proxies for risk that are based on measures of ex-post operating performance, such as non-performing loans or volatility of operating performance, an approach that has limited power in normal times (see our evidence in Table 9 below).⁴ Overall, our descriptive evidence suggests that there is a public-private bank risk taking differential – i.e., publicly-traded banks have higher measures of risk on average, than privately-held ones, and these measures of risk increase after a bank transitions from private to public status.

3. Identifying the Effect of the Stock Market on Bank Risk Taking

One concern with the descriptive evidence in Table 2 is that the private-to-public transition could be endogenous and correlated with bank risk. For example, an IPO might come in response to growth opportunities such as population and business expansion that increase the demand for residential and commercial mortgages. If these same growth opportunities also increase bank risk, then the estimates would not have a causal interpretation.

⁴ Other papers have shown that banks increase risk when they convert from a mutual form of organization to stock ownership (Esty, 1997; Schrand and Unal, 1998). These papers interpret the finding as evidence that shareholders have incentives to increase risk when they get all of the benefits on the upside but bear only a part of the losses on the downside. Since the conversion is often also associated with an initial public offering of stock it is unclear whether the earnings pressure hypothesis we have advanced here might also be part of the explanation.

3.1. Empirical Framework

To address this identification challenge, we use a difference-in-differences (DD) approach that compares the change in risk of banks that switch ownership status (the treatment group) to the change in risk of a set of banks that intended to go public or be acquired but whose deals were cancelled (the control group). The idea here – following Seru (2014) and Bernstein (2014) in their work on innovation – is that we are comparing the change in risk of banks in the treatment group to a set of banks whose private-to-public transition decisions were plausibly driven by the same potentially endogenous factors. For example, the intention to go public could be correlated with an increase in the demand for residential and commercial mortgages as banks seek capital from the markets to fund growth to meet this increase in demand. However, the increased demand for credit could, in principle, be associated with an increase in the risk of the bank’s existing portfolio. To the extent that the increase in risk is associated with the intention to go public, comparing within-bank changes in risk taking of treated banks to those of relatively similar banks in the control group should help to alleviate selection concerns such as these. Of course, it is important that the reason that the deal is withdrawn is not correlated with a change in the bank’s risk environment, an issue we take up below.

More formally, to examine the effect of private-to-public transitions on bank risk taking, we use the following baseline difference-in-difference (DD) regression specification:

$$RISK_{it} = \alpha + \beta_1 \times After_{it} + \beta_2 \times After_{it} \times Treatment_i + \gamma \times Z_{it} + \mu_t + \mu_i + \varepsilon_{it} \quad (1)$$

where i and t index commercial banks and year-quarters. $RISK$ is measured by the variety of supervisory ratings and financial information. $After$ is an indicator variable that takes a value of one for all the bank-quarters after the announcement date and zero otherwise, and $Treatment$ is an indicator variable that takes a value of one for commercial banks in the treatment group and zero

for those in the control group. Z_{it} controls for bank-level covariates of risk taking decisions and in the baseline specification is measured as bank size (total assets), while μ_t and μ_i are year-quarter dummies and commercial bank fixed effects, respectively. The inclusion of bank size, as well as bank and time fixed effects means that our estimates compare the (within-bank) response of risk measures for treated banks to that of similarly-sized control banks in the same year-quarter. We evaluate statistical significance using robust clustered standard errors adjusted for non-independence of observations within BHCs.⁵ In order to better focus on the build-up of risk pre-crisis, in all our baseline tests we examine a ten-year window running up to the crisis (1997-2006). The focus on the pre-crisis period helps to ease the potential concern that changes in supervisory standards after the crisis may be driving our results. The null hypothesis is that the coefficient of interest, β_2 , which captures the effect of changes in stock listing status on bank risk, is equal to zero.

Before reporting our baseline findings for the DD estimation, we present comparisons of the treatment and control groups prior to the intended private-to-public transitions. Table 3, Panel A shows that the only difference between treatment and control groups is size, with banks in the treatment group larger than those in the control group (a log difference of 31.5%). But other balance sheet ratios including the Tier 1 capital ratio, deposits to assets, and loans to assets are essentially the same across the two groups. Importantly, there is no difference in the average CAMELS ratings and the year-to-year change in CAMELS ratings in the pre-transition period. Panel B looks at differences in the treatment and control groups in a multivariate regression setting.

⁵ We do so to address the concern that the key source of variation in the analysis is at the BHC level (Bertrand, Duflo, and Mullainathan (2004)). This correction relaxes the assumption that commercial bank observations are independent within each BHC. We verify that the results are robust to adjusting the standard errors for clustering at the commercial bank level.

We report estimates from linear-probability regression analysis of the likelihood that an IPO or private-to-public M&A deal is successfully completed for three different specifications: one that includes the full set of our baseline controls in the year prior to the announcement (Column 1); one that adds the composite CAMELS rating in the year prior to the announcement (Column 2); and one that also adds the annual change of the composite CAMELS ratings in each of the two years prior to the treatment (Column 3). Pre-announcement balance sheet variables, CAMELS ratings and changes in CAMELS rating are not statistically significant in these regressions.

3.2. Baseline DD Estimates

Table 4 reports results from estimating our baseline DD regression (1) for each of the supervisory risk ratings (Panel A) and for the risk measures based on financial information (Panel B), in turn. For each of the supervisory risk rating measures in Panel A, the estimates indicate that after a private-to-public transition there is a deterioration in a bank's supervisory ratings relative to a similarly-sized bank that attempts but does not complete a transition.

The results in Panel B indicate that stock listing leads to riskier bank behavior across numerous financial measures. Among other things, banks reduce their Tier 1 capital ratio, tilt their assets to riskier types,⁶ shorten the maturity of their liabilities, and increase reliance on more volatile sources of funding. Table B.6 shows that, while public listing results in a greater focus on risky assets, overall asset growth is not greater among banks that become publicly listed.

⁶ For example, Table B.6 shows that they increase the share of their portfolio invested in commercial real estate loans and residential mortgages.

To help gauge the economic significance of our estimates and assess their plausibility, we conduct two exercises based on the estimate for the composite CAMELS rating in Column (7) of Panel A. First, we examine how a private-to-public transition moves a bank in the empirical distribution of the rating. Since our DD specification includes bank fixed effects, we use the within-bank distribution (i.e., the distribution after removing bank fixed effects) as the benchmark. The estimated 0.224 increase in CAMELS following a transition moves a bank from the 50th to the 75th percentile of the distribution, which is a sizable effect that corresponds to a full quartile of the conditional distribution of the rating. Second, we compare the effect of a private-to-public transition to that of bank size. We calculate these marginal effects by multiplying the respective estimates by the within-firm standard deviation of bank size. The marginal impact of a private-to-public transition is substantially larger than the effect of a large, two-standard deviation change in the effect of bank size ($0.013 \times 1.88 = 0.024$) on the composite CAMELS rating.

While the effect is somewhat stronger for the composite CAMELS and the STBL loan risk ratings, the effects are sizable across component ratings, including the management, asset, capital, and earnings quality categories. Depending on the rating, the magnitude of the implied effect of a private-to-public transition ranges between about 1/3 and 1/2 of a one standard deviation movement in the within-bank distribution. The estimates for the financial risk measures are roughly comparable in magnitude to those for the supervisory ratings. For example, the estimated 0.096 increase in the Risk Factor following a transition (Column (10) of Panel B) also corresponds to about a full quartile move in the conditional distribution of the factor, from the 50th to the 75th (-0.101) percentile. The marginal impact of a private-to-public transition on the Risk Factor is also much larger than the effect of a large, two-standard deviation change in the effect of bank size ($0.019 \times 1.88 = 0.036$).

The results in Table B.5 indicate that our baseline estimates for the supervisory ratings are little changed if we match to the control group of banks based on the time at which the transition announcement occurs and on (pre-treatment) size. This matched-sample DD approach (Heckman, Ichimura, and Todd, 1997) addresses the potential concern that comparing treated and control banks that have different sizes may raise selection issues. See the table for more details on the matching procedure. To implement the estimator, we use a methodology that is analogous to the long-run event studies approach (e.g., Barber and Lyons (1997)) and, for each bank-quarter, construct a “benchmark” CAMELS, which is the group mean of CAMELS for a matched portfolio of banks. The matched portfolio is constructed based on year and commercial bank size.

Figure 2 shows results of a graphical analysis in which we plot the likelihood (average annual frequency) of a bad CAMELS rating in event time leading up to and after the year when a bank announces a private-to-public transition. In line with our baseline estimates, there is a sharp change in the supervisory risk ratings of treated banks starting from right after the announcement ($t=+1$), but there is no change in ratings for banks in the control group. CAMELS ratings of treated banks continue to deteriorate in the subsequent years ($t = +2$ to $t=+4$). Finally, in line with the evidence presented in Table 2, the CAMELS ratings of treated and control banks display no meaningful trends in the years prior to announcement ($t=-1$ to $t=-5$). The CAMELS levels for treated and control banks are also very similar in the pre-treatment period.

3.3. Robustness to Using an Alternative Control Group

Next, we estimate specification (1) using an alternative control group of mergers that are successful but do not lead to a change in public/private status because they involve either a private bank that is acquired by another private bank or a public bank that is acquired by another public

banks. Since this control group is comprised only of M&A deals, we limit the treatment group to acquisitions of a private bank by a public bank, thereby excluding IPOs. Bloom, Sadun, and Van Reenen (2012) use a similar approach to estimate the productivity effect of transferring ownership to a US multinational. In using this control group we are making the identifying assumption that while an acquisition could select for banks facing an increase in the risk environment, this increase does not depend on the type of ownership change (i.e., private to public, private to private, public to public). The resulting sample consists of 21,757 commercial bank-quarter observations involving 1,089 unique BHCs and 1,631 unique commercial banks between 1990 and 2012.

As in our baseline DD estimation, we check to see whether there are any significant differences in the treatment and control groups before the acquisition. Table 5, Panel A shows the only statistically significant difference in balance sheet variables between the two groups is size, with the treatment group being somewhat smaller (a log difference of about 19%). Moreover, CAMELS and the change in the CAMELS pre-acquisition are the same across the two groups. The similarity of the two groups is also evident on Panel B, which reports estimates of a linear-probability regression analysis of the likelihood that a bank becomes the target of a private-to-public acquisition bid as compared to other types of acquisitions. We examine three different specifications: one that includes the full set of prior-year baseline controls (Column 1); one that adds the year-prior composite CAMELS rating (Column 2); and one that also adds the changes in the composite CAMELS rating in each of the two years prior to the acquisition (Column 3). There are no statistically significant coefficients, indicating that there are no balance sheet differences across the two groups, nor are there differences in pre-acquisition CAMELS and trends in CAMELS.

DD estimates using this alternative control group are reported in Table 6. Panel A shows results for each of the supervisory ratings, and Panel B has results for the financial measures of risk. In line with our baseline results, the estimates indicate that there is a deterioration in CAMELS and loan risk ratings, as well as an increase in financial risk measures when private banks are acquired by public banks, but not when either private banks are acquired by another private bank or public banks are acquired by other public banks. For example, the estimates in Column 7, Panel A show that there is an increase in the composite CAMELS rating of 0.094, which is smaller but remains economically significant relative to the baseline estimate of 0.224. Overall, our DD estimates are stable across different control groups, suggesting that our findings are not simply an artifact of a particular choice of control group.

3.4. Robustness to Using a 2SLS-IV Estimator

In our last robustness analysis, we address the potential concern that deal cancellations (used on our baseline DD estimation) could be correlated with factors related to bank risk, thus leading to a selection bias in the estimates. We follow the approach of Bernstein (2014), which instruments for deal completion with an index of stock returns in the two months after the deal is announced. Under the assumption that stock returns over this short window are uncorrelated with longer-term risk-taking incentives, the predicted value of this first-stage regression should be purged of the component of deal failure that could be correlated with changes in the risk environment.

Specifically, we estimate the following 2SLS-IV specification:

$$RISK_i^{Post} = \alpha + \beta_1 \widehat{Completed Deal}_i + \gamma_1 RISK_i^{Pre} + \gamma_2 Z_i + \mu_t + \varepsilon_t \quad (2)$$

where $RISK_i^{Post}$ is the average bank risk proxy in the quarters after the announcement date, $RISK_i^{Pre}$ is the corresponding average in the quarters prior to the announcement, and $\widehat{Completed Deal}$ is a predicted probability that a private-to-public transaction occurs. This predicted probability is estimated from the (first-stage) regression,

$$\widehat{Completed Deal}_i = \alpha_2 + \beta_2 S\&P Bank Returns_i + \gamma_3 Z_i + \mu_t + \varepsilon_i \quad (3)$$

where we are using the S&P Bank Index returns in the two months following each announcement as the instrument.

Table 7 shows that the instrument has predictive power in the first stage and does not appear to be selecting on observables. As shown in Table 7, deals announced when the bank stock index performs poorly are less likely to be completed. This is evident in Panel A, where we show that deals are less likely to be completed when index returns are in the bottom quartile rather than the top quartile. It is also evident in Panel B, where we report various version of the first stage of our 2SLS-IV analysis. Panel A also shows that other bank characteristics appear to be unrelated to index stock returns so there is no indication that our instrument is selecting on observables.

Table 8 reports the 2SLS-IV estimates for each of the supervisory ratings (Panel A), and each of the financial risk measures (Panel B). After instrumenting with stock returns, transitions to public listing status continue to lead to a significant deterioration in banks' supervisory ratings and to a significant increase in financial risk measures.⁷ The estimated stock market impact remains sizable across all supervisory ratings and all financial risk measures.⁸

⁷ For example, the estimates in Column 7, Panel A show that there is an increase in the composite CAMELS rating of 0.303, which is economically significant and somewhat larger than our baseline DD estimates in Table 4.

⁸ We caution against a strong interpretation of our results on the STBL risk rating since sample size is small once we collapse the sample at the deal announcement level.

3.5. Evidence on Bank Performance

Having studied the effect on supervisory ratings and financial risk measures in the run-up to the crisis, we now examine the impact of stock market listing on bank operating performance during the crisis. If, as we show, treatment banks take greater risk in the ten years prior to the financial crisis, it should manifest itself in poorer operating performance during the crisis in measures such as Return on Equity, Return on Assets, non-performing loans, and loan loss provisions. To examine this prediction, we conduct a DD analysis with these and other measures of bank operating performance as the dependent variable and with cancelled deals as the control group. We now add an interaction term with the crisis dummy, which allows us to test whether there was greater underperformance of the treated banks relative to control banks during the crisis. The results are reported in Panel A of Table 9. To facilitate comparison, Panel B reports results without the interaction term. The estimates indicate that newly listed and acquired treatment banks significantly underperformed during the crisis, a result that holds along all the measures of performance considered. There is no evidence that underperformance of banks that transition to publicly-held status exists in normal times.

4. Cross-Sectional and Time-Series Evidence

We have interpreted the results as evidence that banks try to pump up short-term earnings to influence market perceptions of their long-run value as would be suggested by application of the short-termism model of Stein (1989). To buttress this interpretation, we examine whether the effects we have identified vary systematically across banks in a way that is consistent with this interpretation. Specifically, we expect that the effects should be stronger among banks that are subjected to greater stock market pressure. We also expect that banks should try to pump up short-

term earnings through greater risk in a low interest-rate and credit-risk environment, when they are faced with more downward pressure on earnings.

To examine these finer implications of the short-termism story, we add to the baseline DD specification (1) an interaction term of the treatment effect with standard measures of corporate governance, which include board size, the percentage of insider board members, and the number of anti-takeover provisions based on the index developed by Gompers, Ishii and Metrick (2003), which we refer to as GIM. We expect that the treatment effect to be larger for better governed banks, which presumably are more focused on maximizing stock prices.

Table 10, Panels A and B reports estimates from this triple-DD specification for the composite CAMELS rating (Panel A) and our Risk Factor measure. The results indicate that composite CAMELS rating deteriorates more and there is a greater increase in the Risk Factor relative to control banks if the bank has a smaller board, fewer insider board members, and better governance according to the GIM measure. While these results are consistent with short-termism, they are also consistent with the idea that, when managers of banks are insulated from the stock market, they want to lead a low-risk, "quiet life" as suggested by the evidence of Bertand and Mullainathan (2003) in their work on non-financial firms. In this interpretation, it is possible that banks increase risk from a level that is too low relative to the level that maximizes firm value.

Panels C and D of Table 10 look at another set of variables that are also arguably linked to short-term stock-market pressure: institutional ownership concentration; turnover of institutional shares, and the extent of stock-trading by the CEO. All of the findings are consistent with the view that stock-market pressure leads to an increase in risk-taking.

Panels E and F of Table 10 look at time series variation in the treatment effect. In particular, we examine whether risk-taking incentives of publicly-held banks are increased relative to privately-held banks at times when there is more downward pressure on bank earnings, i.e. when interest rates are low (as measured by the Fed funds rate) and when credit spreads are low (as measured by the spread of yields on long-term investment-grade corporate bonds over those of comparable-maturity Treasuries and the spread of A2/P2 overnight commercial paper rates over AA overnight commercial paper rates, respectively). These panels show that supervisory ratings deteriorate more and financial risk measures increase more during periods when the Fed funds rate and credit spreads are low. The findings are consistent with the work of Hanson and Stein (2015), which shows that commercial banks increase the duration of the securities holdings when short-term rates are low presumably in an effort to increase yield. But the findings are difficult to explain with the quiet life story and would seem to favor an explanation based on stock-market induced earnings pressure as in the short-termism model of Stein (1989).

5. Conclusion

In this paper, we argue and present evidence that a focus on short-term stock prices induces publicly traded banks to increase risk relative to privately-held banks. This finding raises a number of additional questions.

First, what effect does this increase in risk-taking incentives of publicly-traded banks have on the behavior of privately-held banks? If these incentives essentially increase the supply of credit by publicly-traded banks, they make privately-held banks less profitable and may induce them to take more risk as well. Alternatively, these banks – which may be more focused on long

run value – could reduce their supply of credit in response, acting as something of a stabilizing force.

Second, do these sorts of risk-taking incentives exist in other non-bank financial intermediaries? Kacperczyk and Schnabl (2013) and Chernenko and Sunderam (2014) present evidence that suggests that they do. These papers show that assets under management in institutional money market funds are much more sensitive to yield than are retail money market funds, which in turn creates strong financial incentives for institutional money market funds to increase risk, much as stock-market pressure creates incentives for banks to increase risk. It would therefore not be surprising if institutional bond funds engaged in similar behavior, or if open-ended bond funds took more risk than closed-end funds (which do not see greater fund flows when yield increases). Similar incentives might also exist in insurance. While reaching for yield has been shown to exist in insurance (Becker and Ivashina, forthcoming), is it more pronounced among publicly-traded insurance companies as compared to mutual organizations?

Finally, what are the implications of bank risk-taking behavior for regulation? Our findings provide some support for the view that compensation schemes should require management to hold stock for longer periods. Of course, the wisdom of such a policy depends on whether one believes that the risk-taking behavior documented here is socially excessive. Our findings also point to a tension in regulatory policy. While bank regulators may want to limit the impact of the stock market on banks, securities regulators try to promote good corporate governance, which tends to increase the power of shareholders and thus the stock market. As we have shown, good governance practices may actually increase risk-taking incentives.

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Appendix A: Variable Definitions

The variables used in this paper are extracted from four main data sources: the National Information Center (NIC) of the Federal Reserve System, the Federal Reserve's Survey of Terms of Business Lending (STBL), Call Reports, and lists of announced (completed and withdrawn) IPOs and M&As from SDC, Capital IQ, and SNL Financial. For each data item, we indicate the relevant source in square brackets. The variables are defined as follows:

Bank Risk – Outcome Measures Based on Supervisory Data [NIC/STBL]:

- *Capital Adequacy* rating: "A financial institution is expected to maintain capital commensurate with its risks and the ability of management to identify, measure, monitor, and control these risks. The capital adequacy of an institution is rated based on, but not limited to, an assessment of the following evaluation factors: the level and quality of capital and the overall financial condition of the institution; the ability of management to address emerging needs for additional capital; balance-sheet composition, including the nature and amount of intangible assets, market risk, concentration risk, and risks associated with nontraditional activities; risk exposure represented by off-balance-sheet activities" (source: Commercial Bank Examination Manual).
- *Asset Quality* rating: "The asset-quality rating reflects the quantity of existing and potential credit risk associated with the loan and investment portfolios, other real estate owned, other assets, and off-balance-sheet transactions. The ability of management to identify, measure, monitor, and control credit risk is also reflected here. The asset quality of a financial institution is rated based on, but not limited to, an assessment of the following evaluation factors: the adequacy of underwriting standards, soundness of credit-administration practices, and appropriateness of risk-identification practices; the level, distribution, severity, and trend of problem, classified, nonaccrual, restructured, delinquent, and nonperforming assets for both on- and off-balance-sheet transactions; the adequacy of the allowance for loan and lease losses and other asset valuation reserves; the credit risk arising from or reduced by off-balance-sheet transactions, such as unfunded commitments, credit derivatives, commercial and standby letters of credit, and lines of credit; the diversification and quality of the loan and investment portfolios; the extent of securities underwriting activities and exposure to counterparties in trading activities; the existence of asset concentrations; the adequacy of loan and investment policies, procedures, and practices; the ability of management to properly administer its assets, including the timely identification and collection of problem assets; the adequacy of internal controls and management information systems; the volume and nature of credit-documentation exceptions" (source: Commercial Bank Examination Manual).
- *Management* rating: "The capability of the board of directors and management, in their respective roles, to identify, measure, monitor, and control the risks of an institution's activities, and to ensure a financial institution's safe, sound, and efficient operation in compliance with applicable laws and regulations is reflected in this rating. The capability and performance of management and the board of directors is rated based on, but not limited to, an assessment of the following evaluation factors: the level and quality of oversight and support of all institution activities by the board of directors and management; the ability of the board of directors and management, in their respective roles, to plan for and respond to risks that may arise from changing business conditions or the initiation of new activities or products; the adequacy of and conformance with appropriate internal policies and controls addressing the operations and risks of significant activities; compliance with laws and regulations; responsiveness to recommendations from auditors and supervisory authorities; management depth and succession; the extent that the board of directors and management are affected by or susceptible to dominant

influence or concentration of authority; reasonableness of compensation policies and avoidance of self-dealing" (source: Commercial Bank Examination Manual).

- *Earnings* rating: "The earnings rating reflects not only the quantity and trend of earnings, but also factors that may affect the sustainability or quality of earnings. High levels of market risk may unduly expose the institution's earnings to volatility in interest rates. The rating of an institution's earnings is based on, but not limited to, an assessment of the following evaluation factors: the level of earnings, including trends and stability; the ability to provide for adequate capital through retained earnings; the quality and sources of earnings; the level of expenses in relation to operations; the adequacy of the budgeting systems, forecasting processes, and management information systems in general; the adequacy of provisions to maintain the allowance for loan and lease losses and other valuation allowance accounts; the exposure of earnings to market risk such as interest-rate, foreign-exchange, and price risks" (source: Commercial Bank Examination Manual).
- *Liquidity* rating: "In evaluating the adequacy of a financial institution's liquidity position, consideration should be given to the current level and prospective sources of liquidity compared to funding needs. Liquidity is rated based on, but not limited to, an assessment of the following evaluation factors: the adequacy of liquidity sources compared with present and future needs and the ability of the institution to meet liquidity needs without adversely affecting its operations or condition; the availability of assets readily convertible to cash without undue loss; access to money markets and other sources of funding; the level of diversification of funding sources, both on- and off-balance-sheet; the degree of reliance on short-term, volatile sources of funds, including borrowings and brokered deposits, to fund longer-term assets; the trend and stability of deposits; the ability to securitize and sell certain pools of assets; the capability of management to properly identify, measure, monitor, and control the institution's liquidity position, including the effectiveness of funds-management strategies, liquidity policies, management information systems, and contingency funding plans" (source: Commercial Bank Examination Manual).
- *Sensitivity to Market Risk* rating: "The sensitivity to market risk component reflects the degree to which changes in interest rates, foreign-exchange rates, commodity prices, or equity prices can adversely affect a financial institution's earnings or economic capital. Market risk is rated based on, but not limited to, an assessment of the following evaluation factors: the sensitivity of the financial institution's earnings or the economic value of its capital to adverse changes in interest rates, foreign-exchange rates, commodity prices, or equity prices; the ability of management to identify, measure, monitor, and control exposure to market risk given the institution's size, complexity, and risk profile; the nature and complexity of interest-rate risk exposure arising from nontrading positions; where appropriate, the nature and complexity of market-risk exposure arising from trading and foreign operations" (source: Commercial Bank Examination Manual).
- *CAMELS* ("composite") rating: "The composite rating generally bears a close relationship to the component ratings assigned. However, the composite rating is not derived by computing an arithmetic average of the component ratings. When assigning a composite rating, some components may be given more weight than others depending on the situation at the institution. The ability of management to respond to changing circumstances and address the risks that may arise from changing business conditions or the initiation of new activities or products is an important factor in evaluating a financial institution's overall risk profile, as well as the level of supervisory attention warranted" (source: Commercial Bank Examination Manual).
- *Overall Bank Quality Score*: Is defined as the tightest of the eight supervisory risk ratings ("component" CAMELS, "composite" CAMELS, and STBL loan risk rating) for each bank in any given

quarter.

- *Bad Rating Dummy*: An indicator that equals one if the bank is rated as weak (a rating of 3 and above) along any of the eight supervisory ratings ("component" CAMELS, "composite" CAMELS, and STBL loan risk rating) in any given quarter.

Bank Risk – Outcome Measures Based on Regulatory Filings [Call Reports]:

- *Leverage Ratio*: Tier 1 capital (RCFD8274) minus the adjustment to tier 1 capital (RCFDC228) for financial subsidiaries, divided by total assets for leverage capital purposes (RCFDL138) minus tangible assets (RCFDB505).
- *Total Risk Based Capital Ratio*: The sum of tier 1 capital (RCFD8274), tier 2 capital (RCFD8275), and the adjustment to risk-weighted assets for financial subsidiaries (RCFDC228), divided by risk-weighted assets (RCFDA223) minus the adjustment to risk-weighted assets for financial subsidiaries (RCFDB504).
- *Hot Money* (also referred to as Short-term Money): The sum of large time deposits with a remaining maturity of less than one year (RCONA242), federal funds purchased and securities sold under agreements to resell (RCONB993 + RCFDB995), interest-bearing deposits in foreign offices, trading liabilities net of revaluation losses (RCFD3548-RCFD3547), accounts payable (RCFD3066), dividends declared but not yet payable (RCFD2932), and advances with a remaining maturity of one year or less (RCFDB571), all divided by total assets (RCFD2170).
- *Maturity Mismatch*: Approximate weighted-average time to maturity or re-pricing date of interest-bearing assets less the approximate weighted-average time to maturity or re-pricing date of liabilities. Maturities are reported in ranges that go from up to three months, over three months through 12 months, over a year through three years, and so on. The midpoint of each of these ranges is assumed to be the maturity – i.e., for example, the maturity of the 1 year to 3 years range is assumed to be 2 years. Interest-earning assets are comprised of securities (Schedule RC-B, Memoranda Item 2) and loans and leases (Schedule RC-C Part I, Memoranda Item 2). Liabilities are comprised of deposits (Schedule RC-E Part I, Memoranda Items 2, 3, 4) and other borrowed money (Schedule RC-M, Memoranda Item 5).
- *Core Deposits to Assets*: Total deposits minus non-core deposits, divided by total assets (RCFD2170). Total deposits is the sum of non-interest deposits (RCON6631+RCFN6631) and interest deposits (RCON6636 + RCFN6636). Non-core deposits is the sum of brokered deposits (RCON2365) and large time deposits (RCON2604).
- *Return on Risky Assets*: noninterest income net of deposit fees (RIAD4079- RIAD4080) and fiduciary income (RIAD4070) divided by total assets (RCFD2170).
- *Volatile Liabilities Dependence Ratio*: The sum of interest-bearing foreign liabilities (RCFN6636), large time deposits (RCON2604), federal funds borrowed and repos (RCONB993 + RCFDB995), demand notes issued to the U.S. Treasury and other borrowed money (RCFD3190) minus federal funds lent and reverse repos (RCONB987 + RCFDB989) and assets held in the trading account (RCFD3545 – RCON3543 – RCFN3543), all divided by total assets (RCFD2170).
- *Private MBS*: The sum of residential mortgage pass-through securities not guaranteed by GNMA or issued by FNMA or FHLMC (RCFDG308 + RCFDG311) other residential mortgage-backed securities collateralized by MBS issued or guaranteed by US government agencies or sponsored agencies (RCFDG316 + RCFDG319) and all other residential MBS not issued or guaranteed by U.S. government agencies or sponsored agencies (RCFDG320 + RCFDG323), all divided by total assets (RCFD2170).

- *Income from Securities*: realized gains on available-for-sale securities (RIAD3196, Schedule RI 6b), which is the net gain or loss realized during the calendar year to date from the sale, exchange, redemption, or retirement of all available-for-sale securities.
- *Delinquencies/Loan Loss Reserves Growth*: The growth rate of the ratio of Delinquencies on all loans and leases (RC-N) divided by reserves for loan losses (RCFD3123). The growth rate is defined as an annual, quarter-on-quarter rate.
- *Risk Weighted Assets Growth*: The growth rate of risk-weighted assets (RCFD8274). The growth rate is defined as an annual, quarter-on-quarter rate.
- *Total Loan Growth*: The growth rate of Total loans and lease financing receivables (RCFD5369). The growth rate is defined as an annual, quarter-on-quarter rate.
- *CRE Loan Growth*: The growth rate of Loans secured by real estate (RCFD1410) minus loans secured by 1-4 family residential properties (RCON1797 + RCON5367 + RCON5368). The growth rate is defined as an annual, quarter-on-quarter rate.
- *C&I Loan Growth*: The growth rate of Commercial and industrial loans (RCFD1766). The growth rate is defined as an annual, quarter-on-quarter rate.
- *RRE Loan Growth*: The growth rate of Loans secured by 1-4 family residential properties (RCON1797 + RCON5367 + RCON5368). The growth rate is defined as an annual, quarter-on-quarter rate.
- *Off Balance Sheet Commitments Growth*: The growth rate of the sum of total gross notional amount of interest rate derivative contracts held for trading (RCFDA126), total gross notional amount of foreign exchange derivatives contracts held for trading (RCFDA127), total gross notional amount of other derivatives contracts held for trading (RCFD8723+RCFD8724), total gross notional amount of interest rate derivative contracts held for purposes other than trading (RCFD8725), total gross notional amount of foreign exchange derivatives contracts held for purposes other than trading (RCFD8726), total gross notional amount of other derivatives contracts held for purposes other than trading (RCFD8727+ RCFD8728), and unused commitments (RC-L-1.). The growth rate is defined as an annual, quarter-on-quarter rate.
- *Private Mortgage Backed Securities (MBS) to Total Assets*: The sum of Pass through mortgage securities not guaranteed by GNMA or issued by FNMA and FHLMC (RCFDG308 + RCFDG311) plus other residential mortgage backed-securities not issued or guaranteed by U.S. government agencies or sponsored agencies (RCFDG316 + RCFDG320 + RCFDG319 + RCFDG323), all divided by total assets (RCFD2170).
- *Non Interest Income to Total Income*: The ratio of Total noninterest income (RIAD4079) divided by total noninterest income plus total interest income (RIAD4079 + RIAD4074).
- *Fiduciary Income to Total Income*: The ratio of Income from fiduciary activities (RIAD4070) divided by total noninterest income plus total interest income (RIAD4079 + RIAD4074).
- *Investment Banking Income to Total Income*: The ratio of Income from investment banking, advisory, brokerage, and underwriting fees and commissions (RIADC886 + RIADC888 + RIADC887) divided by total noninterest income plus total interest income (RIAD4079 + RIAD4074).
- *Trading Income to Total Income*: The ratio of Trading revenue (RIADA220) divided by total non-interest income plus total interest income (RIAD4079 + RIAD4074).
- *ABS to Total Assets*: The Ratio of Held-to-maturity asset-backed securities (ABS) at fair value (RCFDC027) divided by total assets (RCFD2170).

- *Risk Factor*: linear combination of the nine balance sheet measures of risk used in the main analysis (*Tier 1 Capital Ratio, Risk Weighted Assets Growth, Total Loan Growth, Off Balance Sheet Commitments Growth, Hot Money, Maturity Mismatch, Return on Risky Assets, Volatile Liabilities Dependence Ratio, Trading Income to Total Income*), with weights calculated using principal component analysis in the entire sample. All specifications use the cumulative distribution function of the Risk Factor, CDF(Risk Factor).

Bank Operating Performance – Outcome Measures:

- *ROE*: The ratio of Income (loss) before income taxes, extraordinary items, and other adjustments (RIAD4301) minus taxes on ordinary income (RIAD4302), divided by total bank equity capital (RCFD3210).
- *ROA*: The ratio of Income (loss) before income taxes, extraordinary items, and other adjustments (RIAD4301) minus taxes on ordinary income (RIAD4302), divided by total assets (RCFD2170).
- *Loan Loss Provisions to Total Assets*: The ratio of Provision for loan and lease losses (RIAD4230) divided by total assets (RCFD2170).
- *Net Interest Margin*: The ratio of Annualized net interest income (RIAD4074) divided by (30-day average) interest-earning assets (RCFD3381+ RCFDB558 + RCFDB559 + RCFDB560 + RCFD3365 + RCFD3360 + RCFD3484 + RCFD3401).
- *Overhead Costs Ratio*: The ratio of Noninterest expense (RIAD4093) divided by revenue. Revenue is the sum of net interest income (RIAD4074) and noninterest income (RIAD4079)).
- *Delinquencies/Loan Loss Reserves*: The ratio of Delinquencies on all loans and leases (RC-N) divided by reserves for loan losses (RCFD3123).
- *Non Performing Loans to Assets*: The sum of all loans that are past due 90 days or more and still accruing (Schedule RC-N, Items 1 – 9 Column B) divided by total loans (RCFD2112).
- *Noncurrent Loan Ratio*: The sum of loans that are more than 30-day past due and still accruing (Schedule RC-N Column A) and those that are not accruing (Schedule RC-N Column C) divided by total loans (RCFD2112).

Bank Characteristics:

- *Bank Size*: The natural logarithm of total assets (RCFD2170).
- *Loans to Assets*: Total loans and lease financing receivables (RCFD5369) divided by total assets (RCFD2170).
- *Deposit to Assets*: The sum of Non-interest deposits (RCON6631+RCFN6631) and interests deposits (RCON6636+RCFN6636), all divided by total assets (RCFD2170).
- *Securities to Loans*: Securities excluding the trading account (RCFD8641) divided by total loans and lease financing receivables (RCFD5369).
- *Tier 1 Capital Ratio*: The sum of tier 1 capital (RCFD8274) and the adjustment to risk-weighted assets for financial subsidiaries (RCFDB504), divided by risk-weighted assets (RCFDA223) minus the adjustment to risk-weighted assets for financial subsidiaries (RCFDB504).

- *Board Size*: The total number of directors on the board in a given bank-quarter. All specifications use the cumulative distribution function of Board Size, CDF(Board Size). [SEC filings retrieved from Compact Disclosures and Capital IQ]
- *Insider Dominated Board*: The ratio of the number of inside directors to the total number of directors in a given bank-quarter. All specifications use the cumulative distribution function of Insider Dominated Board, CDF(Insider Dominated Board). [SEC filings retrieved from Compact Disclosures and Capital IQ]
- *Institutional Ownership Concentration*: The concentration of institutional ownership measured as the Herfindhal Index (HHI) of institutional investors' ownership shares, which are defined as the fraction of firm k shares owned by any given institutional investor, i , in any given quarter, t , $w_{k,i,t}$. All ownership percentages are derived based on the number of shares outstanding and correspond to calendar dates. [Thomson-Reuters Institutional Holdings (13F) database]
- *Institutional Ownership Low Turnover*: The inverse-rank of the average (using portfolio shares $w_{k,i,t}$) of institutional investors' portfolio turnover based on Cahart (1997). Specifically, if we denote the set of companies held by investor i by Q ; the turnover rate of investor i at quarter t is defined as $TR_{i,t} = \frac{\sum_{j \in Q} |N_{j,i,t}P_{j,t} - N_{j,i,t-1}P_{j,t-1} - N_{j,i,t-1}\Delta P_{j,t}|}{\frac{1}{2} \sum_{j \in Q} |N_{j,i,t}P_{j,t} + N_{j,i,t-1}P_{j,t-1}|}$, where $P_{j,t}$ and $N_{j,i,t}$ represent the price and the number of shares, respectively, of company j held by institutional investor i at quarter t . [Thomson-Reuters Institutional Holdings (13F) database]
- *CEO Insider Trading*: The number of CEO sales of shares minus the number of CEO purchases of shares divided by the total number of CEO trades within a given quarter. Only cleansed, non-derivative transactions are included. [Thomson Reuters Insider Filings (Forms 3, 4, 5, and 144) Database].

Time-Series Variables:

- *Bond Spread*: The quarterly spread of yields on long-term (10-year) investment-grade (BBB and above) corporate bonds over those of comparable-maturity Treasury securities.
- *CP Spread*: The quarterly spread of A2/P2 overnight commercial paper rates over AA overnight commercial paper rates.

Table 1: Summary Statistics

This table presents summary statistics (means) for the main samples used in the analysis. Column (1) refers to the starting merged BHC-Commercial Bank Sample, which consists of 178,980 commercial bank-quarter observations for the universe of commercial banks held by a BHC between 1990 and 2012. Column (2) refers to the Switchers sub-sample is defined as those commercial banks in the starting sample that over the sample period experience a switch from being held by a privately-held BHC to a publicly-traded BHC. Switches occur for two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC, and lead to 26,776 commercial bank-quarter observations involving 758 BHCs and 1,294 commercial banks between 1990 and 2012. Columns (3) refers to the baseline identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period announce and either complete ('treatment' group) or withdraw ('control' group) a switch from being held by a privately-held BHC to a publicly-traded BHC. The announced switches are due to two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC, which leads to a sample of 31,569 commercial bank-quarter observations involving 934 unique BHCs and 1,521 unique commercial banks between 1990 and 2012. Definitions for all variables are in Appendix A.

	BHC-Commercial Bank Sample	Switchers Sample	"Identification sample" with Cancelled Deals as Controls
	Mean (1)	Mean (2)	Mean (3)
<i>Public Listing Status:</i>			
Public BHC (dummy)	0.40	0.52	0.44
<i>Supervisory Ratings:</i>			
Capital Adequacy (% bad)	1.65 (0.06)	1.81 (0.07)	1.80 (0.07)
Asset Quality (% bad)	1.70 (0.13)	1.93 (0.15)	1.91 (0.15)
Management Quality (% bad)	1.78 (0.10)	1.99 (0.11)	1.98 (0.11)
Earnings (% bad)	1.85 (0.16)	1.96 (0.17)	1.95 (0.16)
Liquidity (% bad)	1.63 (0.06)	1.79 (0.07)	1.77 (0.07)
Risk-sensitivity (% bad)	1.66 (0.05)	1.88 (0.06)	1.87 (0.06)
Combined CAMELS (% bad)	1.73 (0.08)	1.94 (0.09)	1.92 (0.09)
STBL Loan Risk (% bad)	3.15 (0.15)	3.31 (0.17)	3.28 (0.17)
Overall Bank Quality	2.26 (0.26)	2.47 (0.28)	2.44 (0.28)
Bad Rating Dummy	0.26	0.28	0.28
<i>Bank Characteristics:</i>			
Total Assets, log (\$1,000s)	12.14	11.78	11.61
Loans to Assets	0.61	0.61	0.60
Deposit to Assets	0.70	0.73	0.73
Securities to Loans	0.49	0.53	0.52
Tier 1 Capital	0.09	0.09	0.09
Bank-Quarter Observations	178,980	26,776	31,569
BHCs	3,251	758	934
Commercial Banks	7,166	1,294	1,521

Table 2: Descriptive Evidence

The starting sample is the merged BHC-Commercial Bank Sample, which consists of 234,535 commercial bank-quarter observations for the universe of commercial banks held by a BHC between 1990 and 2012. The Switchers sub-sample is defined as those commercial banks in the starting sample that over the sample period experience a switch from being held by a privately-held BHC to a publicly-traded BHC. Switches occur for two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC. The Switchers sample consists of 26,776 commercial bank-quarter observations involving 758 BHCs and 1,294 commercial banks between 1990 and 2012. The period considered is the run-up to the crisis, which leads to a sample of up to 14,479 commercial bank-quarter observations involving 464 unique BHCs and 788 unique commercial banks between 1997 and 2006. Panel A of this table reports descriptive evidence for the starting sample. Specifically, we report parameter estimates from OLS regressions of each management score on a dummy that equals one for commercial banks that are held by a publicly-traded BHC, while controlling for bank size. For the Switchers sample, we report parameter estimates from OLS regressions of each management score (Panel B) and of bank decisions (Panel C) on a dummy that equals one for commercial banks that are held by a publicly-traded BHC, while also controlling for commercial bank fixed effects. Year-quarter dummies are included in all regressions. p-values (in parentheses) are clustered at the BHC level, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

Panel A: OLS Analysis of Supervisory Ratings										
	Capital Adequacy [1]	Asset Quality [2]	Management Quality [3]	Earnings [4]	Liquidity [5]	Risk [6]	Composite CAMELS [7]	STBL Loan Risk [8]	Overall Bank Quality Score [9]	Bad Rating Dummy [10]
Public BHC	0.107*** (0.018)	0.082*** (0.020)	0.143*** (0.019)	0.085*** (0.024)	0.182*** (0.018)	0.164*** (0.018)	0.149*** (0.019)	0.156*** (0.010)	0.136*** (0.020)	0.061*** (0.011)
Total Assets	-0.035*** (0.005)	-0.045*** (0.006)	-0.065*** (0.005)	-0.055*** (0.006)	-0.057*** (0.005)	-0.046*** (0.005)	-0.060*** (0.005)	0.035*** (0.007)	-0.043*** (0.005)	-0.025*** (0.003)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.	90,733	90,733	90,733	90,733	90,733	85,376	90,733	150,665	90,495	90,733
Adj-R ²	0.048	0.059	0.062	0.052	0.059	0.052	0.067	0.059	0.047	0.047
Panel B: Fixed Effects Analysis of Supervisory Ratings										
Public BHC	0.095*** (0.036)	0.088*** (0.034)	0.098*** (0.032)	0.107*** (0.039)	0.062** (0.025)	0.095*** (0.034)	0.098*** (0.029)	0.322*** (0.075)	0.108*** (0.024)	0.054*** (0.017)
Total Assets	-0.023 (0.017)	-0.025 (0.019)	-0.013 (0.019)	-0.074*** (0.028)	-0.043*** (0.017)	0.048** (0.021)	-0.005 (0.018)	-0.039 (0.059)	-0.039 (0.025)	-0.029** (0.015)
Number of Obs.	11,864	11,864	11,864	11,864	11,864	11,665	11,864	27,785	11,864	11,864
Panel C: Fixed Effects Analysis of Bank Decisions										
Tier 1 Capital Ratio [1]	-0.002*** (0.000)	0.011*** (0.003)	0.015*** (0.004)	0.022*** (0.007)	0.046** (0.019)	1.202*** (0.397)	0.002** (0.001)	0.009*** (0.002)	0.002*** (0.000)	0.025*** (0.009)
Risk Wtd Assets Growth [2]	0.015*** (0.003)	0.015*** (0.003)	0.005*** (0.002)	-0.016** (0.007)	0.585*** (0.178)	1.336*** (0.225)	0.001 (0.001)	-0.006 (0.009)	-0.001* (0.000)	0.020*** (0.007)
Off-Balance Sheet Cmmts Growth [4]	0.015*** (0.004)	0.015*** (0.003)	0.005*** (0.002)	-0.016** (0.007)	0.585*** (0.178)	1.336*** (0.225)	0.001 (0.001)	-0.006 (0.009)	-0.001* (0.000)	0.020*** (0.007)
Total Loan Growth [3]	0.015*** (0.004)	0.015*** (0.003)	0.005*** (0.002)	-0.016** (0.007)	0.585*** (0.178)	1.336*** (0.225)	0.001 (0.001)	-0.006 (0.009)	-0.001* (0.000)	0.020*** (0.007)
Hot Money/Total Assets [5]	0.015*** (0.004)	0.015*** (0.003)	0.005*** (0.002)	-0.016** (0.007)	0.585*** (0.178)	1.336*** (0.225)	0.001 (0.001)	-0.006 (0.009)	-0.001* (0.000)	0.020*** (0.007)
Maturity Mismatch [6]	0.015*** (0.004)	0.015*** (0.003)	0.005*** (0.002)	-0.016** (0.007)	0.585*** (0.178)	1.336*** (0.225)	0.001 (0.001)	-0.006 (0.009)	-0.001* (0.000)	0.020*** (0.007)
Return on Risky Assets [7]	0.015*** (0.004)	0.015*** (0.003)	0.005*** (0.002)	-0.016** (0.007)	0.585*** (0.178)	1.336*** (0.225)	0.001 (0.001)	-0.006 (0.009)	-0.001* (0.000)	0.020*** (0.007)
Volatility Liabilities Dependence Ratio [8]	0.015*** (0.004)	0.015*** (0.003)	0.005*** (0.002)	-0.016** (0.007)	0.585*** (0.178)	1.336*** (0.225)	0.001 (0.001)	-0.006 (0.009)	-0.001* (0.000)	0.020*** (0.007)
Trading Income/Total Income [9]	0.015*** (0.004)	0.015*** (0.003)	0.005*** (0.002)	-0.016** (0.007)	0.585*** (0.178)	1.336*** (0.225)	0.001 (0.001)	-0.006 (0.009)	-0.001* (0.000)	0.020*** (0.007)
Risk Factor [10]	0.015*** (0.004)	0.015*** (0.003)	0.005*** (0.002)	-0.016** (0.007)	0.585*** (0.178)	1.336*** (0.225)	0.001 (0.001)	-0.006 (0.009)	-0.001* (0.000)	0.020*** (0.007)
Number of Obs.	11,864	11,302	11,463	11,404	11,864	11,201	11,861	11,842	11,864	11,201

Table 3: Difference-in-Differences Analysis, Diagnostic Tests – "Identification sample" with Cancelled Deals as Control Group

The sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period announce and either complete ('treatment' group) or withdraw ('control' group) a switch from being held by a privately-held BHC to a publicly-traded BHC. The announced switches are due to two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC, which leads to a sample of 31,569 commercial bank-quarter observations involving 934 unique BHCs and 1,521 unique commercial banks between 1990 and 2012. This table reports tests of the validity of the control group construction for the difference-in-differences analysis. Panel A reports summary statistics of pre-treatment CAMELS ratings, their trends, as well as balance sheet characteristics for banks in the treatment (Column 1) and control (Column 2) samples, respectively. These variables are measured as of the quarter prior to the announcement of a transition. Column 3 reports t-tests of the null hypothesis that treated and control banks are similar along each characteristic. Panel B reports OLS estimates from a linear probability model relating the likelihood of a deal succeeding to the pre-announcement characteristics of the commercial bank involved. Year-quarter dummies are included in all regressions. p-values (in parentheses) are robust, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

Panel A: Pre-Announcement Bank Characteristics for Withdrawn and Successful Deals			
	Treatment (Successful) Mean	Control (Withdrawn) Mean	Difference (t-stat)
	(1)	(2)	(3)
Total Assets _{t-1} , log (\$1,000s)	11.923	11.608	0.315*** (3.313)
Loans to Assets _{t-1}	0.602	0.607	-0.005 (-0.547)
Deposits to Assets _{t-1}	0.740	0.733	0.007 (0.636)
Securities to Loans _{t-1}	0.519	0.514	0.005 (-0.343)
Tier 1 Capital _{t-1}	0.088	0.089	-0.001 (-0.621)
CAMELS rating _{t-1}	1.903	1.895	0.008 (0.290)
Δ CAMELS rating _{t-1}	0.004	0.007	-0.003 (0.274)
Δ CAMELS rating _{t-2}	-0.009	-0.011	0.002 (0.213)
Number of Obs.	1,294	227	1,521
Panel B: Probability of Deal Succeeding			
	pre-event firm characteristics (1)	pre-event CAMELS (2)	pre-event trends (3)
Total Assets _{t-1}	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Loans to Assets _{t-1}	-0.006 (0.029)	-0.005 (0.029)	-0.009 (0.041)
Deposits to Assets _{t-1}	0.021 (0.020)	0.018 (0.021)	0.014 (0.016)
Securities to Loans _{t-1}	0.002 (0.003)	0.001 (0.003)	0.002 (0.005)
Tier 1 Capital _{t-1}	0.273 (0.251)	0.255 (0.261)	0.271 (0.287)
CAMELS rating _{t-1}		-0.004 (0.003)	-0.004 (0.005)
Δ CAMELS rating _{t-1}			0.003 (0.005)
Δ CAMELS rating _{t-2}			0.001 (0.003)
Year & Quarter Effects	Yes	Yes	Yes
Number of Obs.	1,294	1,287	1,275
Adj-R ²	0.041	0.039	0.039

Table 4: Difference-in-Differences Analysis, Baseline Tests – "Identification sample" with Cancelled Deals as Control Group

The starting sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period announce and either complete ('treatment' group) or withdraw ('control' group) a switch from being held by a privately-held BHC to a publicly-traded BHC. The announced switches are due to two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC, which leads to a sample of 31,569 commercial bank-quarter observations involving 934 unique BHCs and 1,521 unique commercial banks between 1990 and 2012. The period considered is the run-up to the crisis, which leads to a sample of up to 14,479 commercial bank-quarter observations involving 464 unique BHCs and 788 unique commercial banks between 1997 and 2006. This table reports the main results of the difference-in-differences analysis of each management score (Panel A) and bank decisions (Panel B). Specifically, the DID specification that is estimated is $RISK_{it} = \alpha + \beta_1 After_{it} + \beta_2 After_{it} \times Treatment_{it} + \gamma Z_{it} + \mu_i + \mu_t + \varepsilon_{it}$, where $After$ is an indicator variable that takes a value of one for all the quarters after the announcement date and zero otherwise, and $Treatment$ is an indicator variable that takes a value of one for commercial banks in the treatment group and zero for those in the control group. Year-quarter dummies as well as commercial bank fixed effects are included in all regressions. p -values (in parentheses) are clustered at the BHC level, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

Panel A: Analysis of Supervisory Ratings										
	Capital Adequacy [1]	Asset Quality [2]	Management Quality [3]	Earnings [4]	Liquidity [5]	Risk [6]	Composite CAMELS [7]	STBL Loan Risk [8]	Overall Bank Quality Score [9]	Bad Rating Dummy [10]
After*Treatment	0.296*** (0.096)	0.277*** (0.074)	0.245*** (0.083)	0.280** (0.126)	0.172 (0.143)	0.269*** (0.081)	0.224*** (0.065)	0.395*** (0.110)	0.323** (0.135)	0.234*** (0.067)
After	-0.139 (0.117)	-0.149 (0.212)	-0.117 (0.166)	-0.156 (0.235)	-0.102 (0.213)	-0.138 (0.165)	-0.112 (0.180)	-0.175 (0.179)	-0.141 (0.196)	-0.187 (0.226)
Total Assets	-0.009 (0.018)	0.006 (0.018)	0.002 (0.022)	-0.041 (0.029)	-0.021 (0.030)	0.065** (0.025)	0.013 (0.019)	-0.165 (0.180)	-0.025 (0.018)	-0.011 (0.016)
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.	14,479	14,479	14,479	14,479	14,479	13,991	14,479	32,884	14,479	14,479
Adj-R ²	0.539	0.424	0.498	0.451	0.512	0.451	0.509	0.441	0.444	0.372
Panel B: Analysis of Bank Decisions										
	Tier 1 Capital Ratio [1]	Risk Wtd Assets Growth [2]	Total Loan Growth [3]	Off-Balance Sheet Growth [4]	Hot Money/Total Assets [5]	Maturity Mismatch [6]	Return on Risky Assets [7]	Volatile Liabilities Dependence Ratio [8]	Trading Income/Total Income [9]	Risk Factor [10]
After*Treatment	-0.004*** (0.001)	0.019*** (0.005)	0.027** (0.013)	0.041** (0.020)	0.010** (0.005)	2.136*** (0.696)	0.003*** (0.001)	0.040*** (0.014)	0.002*** (0.000)	0.096*** (0.022)
After	0.001 (0.001)	0.007 (0.005)	-0.018 (0.013)	-0.019 (0.031)	-0.004 (0.005)	-0.343 (0.923)	-0.001 (0.001)	-0.027** (0.013)	-0.000 (0.000)	-0.035 (0.031)
Total Assets	-0.001*** (0.000)	0.010 (0.009)	0.008*** (0.002)	-0.018 (0.021)	0.240 (0.262)	1.158*** (0.199)	0.001*** (0.000)	0.036*** (0.010)	0.013* (0.007)	0.019 (0.020)
Number of Obs.	14,479	13,964	14,076	14,021	14,479	13,819	14,475	14,476	14,479	13,819

Table 5: Difference-in-Differences Analysis, Diagnostic Tests – "Identification sample" with Other M&A Deals as Control Group

The sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period become targets of a completed M&A deal, which involves either an acquisition of a privately-held target by a publicly-traded acquirer that lead to an ownership switch ('treatment' group) or an acquisition between two publicly-traded or two privately-held BHCs that do not lead to an ownership switch ('control' group). The resulting sample consists of 21,757 commercial bank-quarter observations involving 1,089 unique BHCs and 1,631 unique commercial banks between 1990 and 2012. This table reports tests of the validity of the control group construction for the difference-in-differences analysis. Panel A reports summary statistics of pre-treatment CAMELS ratings, their trends, as well as balance sheet characteristics for banks in the treatment (Column 1) and control (Column 2) samples, respectively. These variables are measured as of the quarter prior to the M&A deal. Column 3 reports t-tests of the null hypothesis that treated and control banks are similar along each characteristic. Panel B reports OLS estimates from a linear probability model relating the likelihood of a deal involving a private to public switch to the pre-announcement characteristics of the target commercial bank. Year-quarter dummies are included in all regressions. p-values (in parentheses) are robust, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

Panel A: Pre-Event Bank Characteristics for Targets of Private to Public and Other M&A Deals			
	Treatment (Private to Public M&As)	Control (Other M&As)	Difference (t-stat)
	Mean (1)	Mean (2)	(3)
Total Assets _{t-1} , log (\$1,000s)	11.931	12.122	-0.192*** (-3.097)
Loans to Assets _{t-1}	0.589	0.590	-0.001 (-0.134)
Deposits to Assets _{t-1}	0.748	0.744	0.004 (0.451)
Securities to Loans _{t-1}	0.521	0.520	0.001 (-0.100)
Tier 1 Capital _{t-1}	0.084	0.085	0.000 (0.138)
CAMELS rating _{t-1}	1.889	1.856	0.032 (0.802)
Δ CAMELS rating _{t-1}	-0.004	-0.002	-0.002 (0.309)
Δ CAMELS rating _{t-2}	-0.012	-0.009	-0.003 (-0.414)
Number of Obs.	676	955	1,631
Panel B: Probability of Private to Public M&A Deal			
	pre-event firm characteristics (1)	pre-event CAMELS (2)	pre-event trends (3)
Total Assets _{t-1}	-0.014 (0.011)	-0.014 (0.011)	-0.015 (0.013)
Loans to Assets _{t-1}	-0.119 (0.091)	-0.111 (0.090)	-0.115 (0.091)
Deposits to Assets _{t-1}	0.091 (0.083)	0.097 (0.089)	0.096 (0.091)
Securities to Loans _{t-1}	-0.037 (0.034)	-0.045 (0.036)	-0.048 (0.038)
Tier 1 Capital _{t-1}	-0.159 (0.283)	-0.194 (0.288)	-0.219 (0.281)
CAMELS rating _{t-1}		-0.007 (0.014)	-0.007 (0.016)
Δ CAMELS rating _{t-1}			0.007 (0.010)
Δ CAMELS rating _{t-2}			0.006 (0.009)
Year & Quarter Effects	Yes	Yes	Yes
Number of Obs.	1,631	1,626	1,609
Adj-R ²	0.145	0.145	0.144

Table 6: Difference-in-Differences Analysis, Baseline Tests – "Identification sample" with Other M&A Deals as Control Group

The starting sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period become targets of a completed M&A deal, which involves either an acquisition of a privately-held target by a publicly-traded acquirer that lead to an ownership switch ('treatment' group) or an acquisition between two publicly-traded or two privately-held BHCs that do not lead to an ownership switch ('control' group). The resulting sample consists of 21,757 commercial bank-quarter observations involving 1,089 unique BHCs and 1,631 unique commercial banks between 1990 and 2012. The period considered is the run-up to the crisis, which leads to a sample of up to 14,479 commercial bank-quarter observations involving 464 unique BHCs and 788 unique commercial banks between 1997 and 2006. This table reports the main results of the difference-in-differences analysis of each management score (Panel A) and bank decisions (Panel B). Specifically, the DID specification that is estimated is $RISK_{it} = \alpha + \beta_1 After_{it} + \beta_2 After_{it} \times Treatment_{it} + \gamma Z_{it} + \mu_i + \varepsilon_{it}$, where $After$ is an indicator variable that takes a value of one for all the quarters after the M&A deal (completion) date and zero otherwise, and $Treatment$ is an indicator variable that takes a value of one for commercial banks in the treatment group and zero for those in the control group. Year-quarter dummies as well as commercial bank fixed effects are included in all regressions. p-values (in parentheses) are clustered at the BHC level, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

Panel A: Analysis of Supervisory Ratings										
	Capital Adequacy [1]	Asset Quality [2]	Management Quality [3]	Earnings [4]	Liquidity [5]	Risk [6]	Composite CAMELS [7]	STBL Loan Risk [8]	Overall Bank Quality Score [9]	Bad Rating Dummy [10]
After*Treatment	0.079** (0.037)	0.183** (0.079)	0.148*** (0.042)	0.109*** (0.027)	0.006 (0.062)	0.151*** (0.049)	0.094*** (0.021)	0.105*** (0.031)	0.065*** (0.019)	0.051*** (0.015)
After	0.025 (0.043)	-0.038 (0.046)	0.007 (0.049)	0.068 (0.062)	0.025 (0.041)	0.032 (0.047)	0.042 (0.047)	0.072 (0.076)	0.035 (0.048)	0.019 (0.031)
Total Assets	0.017** (0.008)	0.012 (0.010)	0.011 (0.010)	-0.020 (0.014)	0.004 (0.006)	0.013 (0.012)	0.011 (0.010)	0.009 (0.057)	0.001 (0.008)	-0.001 (0.006)
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.	10,312	10,312	10,312	10,312	10,312	10,001	10,312	28,281	10,312	10,312
Adj-R ²	0.636	0.610	0.626	0.638	0.659	0.626	0.671	0.241	0.592	0.543
Panel B: Analysis of Bank Decisions										
	Tier 1 Capital Ratio [1]	Risk Wtd Assets Growth [2]	Total Loan Growth [3]	Off-Balance Sheet Growth [4]	Hot Money/Total Assets [5]	Maturity Mismatch [6]	Return on Risky Assets [7]	Volatile Liabilities Dependence Ratio [8]	Trading Income/Total Income [9]	Risk Factor [10]
After*Treatment	-0.007*** (0.001)	0.013** (0.006)	0.015** (0.004)	0.027*** (0.008)	0.008** (0.003)	2.017*** (0.451)	0.003*** (0.000)	0.011* (0.006)	0.002*** (0.001)	0.095*** (0.020)
After	0.002 (0.001)	0.001 (0.008)	-0.007 (0.011)	-0.017 (0.013)	-0.005 (0.006)	-0.107 (0.437)	-0.001 (0.001)	0.001 (0.012)	0.000 (0.000)	0.012 (0.044)
Total Assets	-0.001*** (0.000)	0.007*** (0.002)	-0.012*** (0.001)	0.003 (0.003)	0.149** (0.059)	-0.250** (0.109)	-0.000** (0.000)	-0.007*** (0.001)	0.000** (0.000)	0.107*** (0.003)
Number of Obs.	10,312	9,871	9,982	9,991	10,312	9,756	10,308	10,309	10,312	9,756

Table 7: Instrumental Variable (2-SLS) Analysis, Diagnostic Tests – "Identification sample" with Cancelled Deals as Control Group

The sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period announce and either complete or withdraw a switch from being held by a privately-held BHC to a publicly-traded BHC. The announced switches are due to two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC, which leads to a sample of 31,569 commercial bank-quarter observations involving 934 unique BHCs and 1,521 unique commercial banks between 1990 and 2012. This table reports tests of the validity of the S&P Bank Index as an instrument for deal completion in a two-stage least square (2SLS) analysis. Panel A reports summary statistics of pre-announcement CAMELS ratings, their trends, as well as balance sheet characteristics for banks that experience an S&P Bank Index drop (Column 1) and other banks in the sample (Column 2), respectively. These variables are measured to include all quarters in the pre-announcement period starting from one year prior to the announcement of a transition. Column 3 reports t-tests of the null hypothesis that banks that experience an S&P Bank Index drop are similar to other banks in the sample along each characteristic. A bank is classified as experiencing an S&P Bank Index drop if the two-month S&P Bank Index returns following its deal announcement are at the bottom of the distribution of all announcements in the same year. Panel B reports OLS estimates from a linear probability model relating the likelihood of a deal succeeding to alternative definitions of S&P Bank Index drop and to the pre-announcement characteristics of the commercial bank involved. Filer year dummies are included in all regressions. p-values (in parentheses) are robust, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

Panel A: Pre-event Characteristics of Firms Announcing before High vs. Low S&P Bank Index			
	Bottom 25% Mean (1)	Top 25% Mean (2)	Difference (t-stat) (3)
Probability of Deal Success	0.807	0.863	-0.056*** (4.034)
Total Assets, log (\$1,000s)	11.714	11.647	0.066 (0.683)
Loans to Assets	0.587	0.572	0.015 (1.154)
Deposits to Assets	0.735	0.750	-0.015 (-1.420)
Securities to Loans	0.515	0.520	-0.004 (-0.339)
Tier 1 Capital	0.090	0.088	0.002 (0.705)
CAMELS rating	1.902	1.886	0.016 (0.301)
Δ CAMELS rating	-0.001	-0.003	0.001 (0.303)
Panel B: Probability of Deal Succeeding			
	(1)	(2)	(3)
S&P Bank Index	0.271*** (0.103)		
Percentile CDF of S&P Bank Index		0.077*** (0.019)	
Bottom 25% of S&P Bank Index			-0.050*** (0.016)
Filing Year Effects	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes
Number of Obs.	1,521	1,521	1,521
Adj-R ²	0.105	0.104	0.104

Table 8: Instrumental Variable (2-SLS) Analysis, Baseline Tests – "Identification sample" with Cancelled Deals as Control Group

The starting sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period announce and either complete or withdraw a switch from being held by a privately-traded BHC to a publicly-traded BHC. The announced switches are due to two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC, which leads to a sample of 934 unique event BHCs and 1,521 unique event commercial banks between 1990 and 2012. The period considered is the run-up to the crisis, which leads to a sample of up to 14,479 commercial bank-quarter observations involving 464 unique BHCs and 788 unique commercial banks between 1997 and 2006. This table reports the main results of the instrumental variable (2SLS) analysis of each management score (Panel A) and bank decisions (Panel B). Specifically, the IV-2SLS specification that is estimated is $RISK_i^{Post} = \alpha + \beta_1 \widehat{Completed Deal}_i + \gamma_1 RISK_i^{Pre} + \gamma_2 Z_i + \mu_i + \varepsilon_i$, where $RISK_i^{Post}$ is the average risk-taking proxy in the quarters after the announcement date, $RISK_i^{Pre}$ is the corresponding average in the quarters prior to the announcement, and $\widehat{Completed Deal}_i$ is an indicator variable for those commercial banks that complete their switch from private to public as predicted from the following (first-stage) regression: $\widehat{Completed Deal}_i = \alpha_2 + \beta_2 S\&P Bank_i + \gamma_3 Z_i + \mu_i + \varepsilon_i$, in which we use S&P Bank Index returns in the two months following each announcement as the instrument. Filer year dummies are included in all regressions. p-values (in parentheses) are robust, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

Panel A: Analysis of Supervisory Ratings										
	Capital Adequacy [1]	Asset Quality [2]	Management Quality [3]	Earnings [4]	Liquidity [5]	Risk [6]	Composite CAMELS [7]	STBL Loan Risk [8]	Overall Bank Quality Score [9]	Bad Rating Dummy [10]
Completed Deal	0.142** (0.055)	0.266*** (0.059)	0.280*** (0.055)	0.251*** (0.063)	0.178*** (0.060)	0.232*** (0.071)	0.303*** (0.052)	0.305*** (0.091)	0.269*** (0.054)	0.167*** (0.044)
Total Assets	0.064 (0.150)	-0.095 (0.168)	-0.132 (0.158)	-0.064 (0.181)	-0.208 (0.172)	-0.159 (0.145)	-0.125 (0.149)	0.015 (0.059)	-0.001 (0.153)	-0.033 (0.101)
Filing Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.	788	788	788	788	788	703	788	101	788	788
Adj-R ²	0.152	0.124	0.137	0.109	0.118	0.144	0.124	0.255	0.144	0.109
Panel B: Analysis of Bank Decisions										
	Tier 1 Capital Ratio [1]	Risk Wtd Assets Growth [2]	Total Loan Growth [3]	Off-Balance Sheet Growth [4]	Hot Money/Total Assets [5]	Maturity Mismatch [6]	Return on Risky Assets [7]	Volatile Liabilities Dependence Ratio [8]	Trading Income/Total Income [9]	Risk Factor [10]
Completed Deal	-0.005*** (0.002)	0.017*** (0.005)	0.019*** (0.006)	0.028*** (0.008)	0.010** (0.005)	1.975*** (0.554)	0.003*** (0.000)	0.042*** (0.013)	0.003*** (0.000)	0.101*** (0.030)
Total Assets	-0.003*** (0.001)	0.008 (0.019)	0.012*** (0.003)	-0.014 (0.017)	0.198 (0.231)	0.878*** (0.223)	-0.001 (0.002)	0.008*** (0.001)	0.010 (0.009)	0.013 (0.039)
Number of Obs.	788	788	788	788	788	749	788	788	788	788

Table 9: Analysis of Bank Performance During the Crisis

The sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period announce and either complete ('treatment' group) or withdraw ('control' group) a switch from being held by a privately-held BHC to a publicly-traded BHC. The announced switches are due to two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC, which leads to a sample of 31,569 commercial bank-quarter observations involving 934 unique BHCs and 1,521 unique commercial banks between 1990 and 2012. This table reports the main results of the difference-in-differences analysis of alternative metrics of bank performance for a specification that allows for time-series heterogeneity in the treatment effect by adding an interactive term with a crisis dummy (Panel A) and for the baseline specification (Panel B). Specifically, the interactive DID specification that is estimated is $Perf_{ormance_{it}} = \alpha + \beta_1 After_{it} + \beta_2 After_{it} \times Treatment_{it} + \beta_3 After_{it} \times Crisis_{it} + \gamma Z_{it} + \mu_t + \mu_i + \varepsilon_{it}$, where $After$ is an indicator variable that takes a value of one for all the quarters after the announcement date and zero otherwise, $Treatment$ is an indicator variable that takes a value of one for commercial banks in the treatment group and zero for those in the control group, and $Crisis$ is an indicator variable that takes a value of one for all quarters between 2007Q4 and 2009Q4. Year-quarter dummies as well as commercial bank fixed effects are included in all regressions. p-values (in parentheses) are clustered at the BHC level, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

	ROE	ROA	Non Performing Loans/Assets	Loan Loss Provisions/Assets	Net Interest Margin	Overhead Costs Ratio	Delinquencies/ Loan Loss Reserves	Noncurrent Loan Ratio
	1	2	3	4	5	6	7	8
Panel A: Analysis of Bank Performance During the Crisis								
After*Treatment*Crisis	-0.029*** (0.004)	-0.003*** (0.000)	0.014*** (0.002)	0.008*** (0.001)	-0.004*** (0.001)	0.038*** (0.009)	0.508*** (0.072)	0.019*** (0.003)
After*Treatment	-0.002 (0.002)	0.000 (0.001)	0.004 (0.003)	0.000 (0.001)	-0.001 (0.001)	0.008 (0.007)	0.095 (0.092)	0.000 (0.003)
After	0.001 (0.001)	-0.000 (0.001)	-0.005 (0.004)	-0.000 (0.001)	0.001 (0.001)	-0.003 (0.010)	-0.311 (0.346)	-0.006 (0.004)
Implied Treatment Effect During the Crisis {F-stat, $H_0 : \beta_2 + \beta_3 = 0$ }	[-0.031] {70.83}	[-0.003] {12.55}	[0.018] {25.05}	[0.009] {28.65}	[-0.005] {14.99}	[0.046] {8.43}	[0.604] {28.01}	[0.019] {24.53}
Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.	31,569	31,569	31,569	31,441	31,569	31,471	31,521	31,538
Adj-R ²	0.358	0.353	0.468	0.426	0.659	0.511	0.408	0.427
Panel B: Analysis of Bank Performance in the Overall Sample Period								
After*Treatment	0.000 (0.006)	-0.000 (0.001)	0.004 (0.004)	0.001 (0.001)	-0.002 (0.002)	0.028 (0.040)	0.378 (0.230)	0.006 (0.006)
After	0.003 (0.010)	-0.000 (0.001)	-0.000 (0.004)	0.001 (0.001)	-0.002 (0.002)	-0.017 (0.039)	-0.172 (0.172)	-0.001 (0.006)
Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.	31,569	31,569	31,569	31,441	31,569	31,471	31,521	31,538
Adj-R ²	0.353	0.346	0.454	0.418	0.645	0.504	0.402	0.421

Table 10: Analysis of Heterogeneity in the Effect of the Private-to-Public Transition

The sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period announce and either complete ('treatment' group) or withdraw ('control' group) a switch from being held by a privately-held BHC to a publicly-traded BHC. The announced switches are due to two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC, which leads to a sample of 31,569 commercial bank-quarter observations involving 934 unique BHCs and 1,521 unique commercial banks between 1990 and 2012. This table reports the main results of the difference-in-differences analysis of a dummy for bad management score, which is defined as a rating of 3 or worse, and of the bank risk factor for a specification that allows for cross-sectional (Panels A to D) and time-series (Panels E and F) heterogeneity in the treatment effect by adding an interactive term. Specifically, the interactive DID specification that is estimated is $RISK_{it} = \alpha + \beta_1 After_{it} + \beta_2 After_{it} \times Treatment_{it} + \beta_3 After_{it} \times Treatment_{it} \times X_i + \gamma Z_{it} + \mu_t + \mu_i + \varepsilon_{it}$, where $After_{it}$ is an indicator variable that takes a value of one for all the quarters after the announcement date and zero otherwise, $Treatment_{it}$ is an indicator variable that takes a value of one for commercial banks in the treatment group and zero for those in the control group, and X is the cumulative density function of the sorting variable used in turn in each column, which include the total number of directors (Column (1) of Panels A and B), the ratio of the number of directors that are insiders to the total number of directors (Column (2) of Panels A and B), the GIM index of takeover protection by Gompers, Ishii, and Metrick (2003) (Column (3) of Panels A and B), the concentration of institutional ownership measured as the Herfindhal Index (HHI) of institutional investors' ownership shares (Column (1) of Panels C and D), the inverse-rank of the average institutional investors' portfolio turnover based on Cahart (1997) (Column (2) of Panels C and D), the frequency of CEO net-sales of stock (Column (3) of Panels C and D), the Federal Funds Rate (Column (1) of Panels E and F), and bond and commercial paper spreads over comparable treasuries (Column (2) and (3) of Panels E and F). Year-quarter dummies as well as commercial bank fixed effects are included in all regressions. p-values (in parentheses) are clustered at the BHC level, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

	Panel A: Analysis of Cross-Sectional Heterogeneity. Y=CAMELS Rating, X=			Panel B: Y=Risk Factor, X=		
	Board Size	Insider Dominated Board	GIM Index	Board Size	Insider Dominated Board	GIM Index
	[1]	[2]	[3]	[1]	[2]	[3]
After*Treatment*X	-0.026** (0.010)	-0.030*** (0.008)	-0.079** (0.034)	-0.046** (0.016)	-0.033** (0.012)	-0.037*** (0.011)
After*Treatment	0.075*** (0.026)	0.075*** (0.026)	0.090*** (0.031)	0.070** (0.033)	0.062** (0.033)	0.034*** (0.006)
After	-0.037 (0.025)	-0.039 (0.025)	-0.036 (0.027)	-0.023 (0.030)	-0.022 (0.029)	-0.052 (0.041)
Number of Obs.	18,225	18,225	9,786	17,346	17,346	8,875
	Panel C: Additional Analysis of Cross-Sectional Heterogeneity. Y=CAMELS Rating, X=					
	Inst Ownership Concentration	Inst Investor Low Turnover	CEO Insider Trading	Inst Ownership Concentration	Inst Investor Low Turnover	CEO Insider Trading
	[1]	[2]	[3]	[1]	[2]	[3]
After*Treatment*X	0.098*** (0.008)	-0.103*** (0.002)	0.028** (0.013)	0.024*** (0.009)	-0.077*** (0.016)	0.042** (0.020)
After*Treatment	0.025 (0.026)	0.095*** (0.027)	0.058** (0.028)	0.074* (0.039)	0.084*** (0.025)	0.024* (0.013)
After	-0.039 (0.024)	-0.039 (0.025)	-0.043 (0.036)	-0.046 (0.039)	-0.038 (0.028)	-0.043 (0.030)
Number of Obs.	17,876	10,878	5,614	16,565	9,281	4,716
	Panel E: Analysis of Time-Series Heterogeneity. Y=CAMELS Rating, X=					
	Fed Funds Rate	Bond Spread	Commercial Paper Spread	Fed Funds Rate	Bond Spread	CP Spread
	[1]	[2]	[3]	[1]	[2]	[3]
After*Treatment*X	-0.015* (0.009)	-0.068*** (0.006)	-0.015** (0.007)	-0.041*** (0.011)	-0.025*** (0.007)	-0.060*** (0.009)
After*Treatment	0.048** (0.024)	0.074*** (0.011)	0.035** (0.017)	0.045*** (0.012)	0.028*** (0.008)	0.053* (0.031)
After	-0.018 (0.024)	-0.030 (0.024)	-0.017 (0.017)	-0.014 (0.031)	-0.017 (0.029)	-0.009 (0.033)
Number of Obs.	31,569	31,569	31,569	30,448	30,448	30,448

Figure 1: The Growth of Public Banking

This figure describes the evolution of aggregate total assets in the U.S. commercial banking sector from 1990 to 2014. Aggregate total assets of commercial banks are measured as the sum of consolidated assets reported by each commercial bank in its Call Report filing for the universe of U.S. filers. Note that this definition does not include nonbank assets of bank holding companies (BHCs), which would equal to the difference between total assets as reported by BHCs in their Y-9C and those of commercial bank assets as defined in the figure. For each commercial bank, we estimate the ownership status of its (top-holder) BHC based on a NIC indicator for whether the BHC's securities are traded and are subject to registration, or it is required to report to the SEC. Panel A shows the level of aggregate total assets of U.S. commercial banks that are held by a publicly-traded BHC and of U.S. commercial banks that are held by a privately-held BHC from 1990 to 2014. Panel B shows the growth rate of these aggregate series. Specifically, we plot each of the two series scaled by its respective 1990Q1 level. Sources: National Information Center (NIC) and Call Reports.

Panel A: The Value of Aggregate Total Assets of Public and Private U.S. Commercial Banks

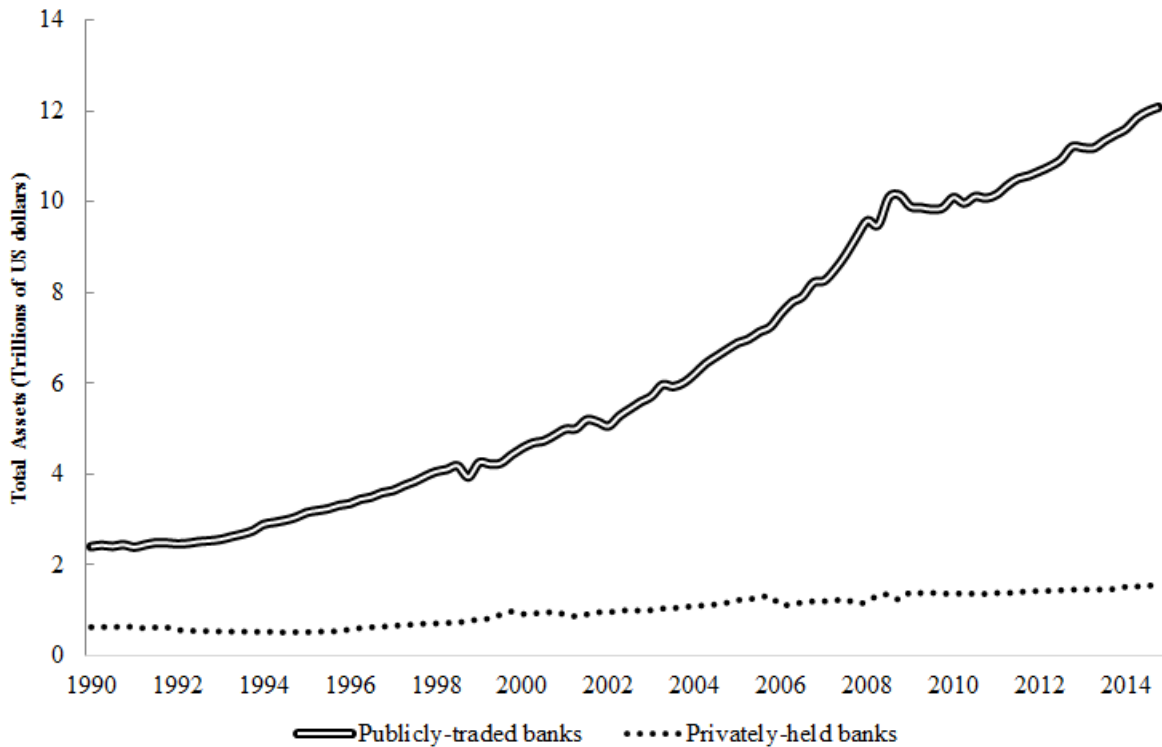


Figure 1 (Continued): The Growth of Public Banking

This figure describes the evolution of aggregate total assets in the U.S. commercial banking sector from 1990 to 2014. Aggregate total assets of commercial banks are measured as the sum of consolidated assets reported by each commercial bank in its Call Report filing for the universe of U.S. filers. Note that this definition does not include nonbank assets of bank holding companies (BHCs), which would equal to the difference between total assets as reported by BHCs in their Y-9C and those of commercial bank assets as defined in the figure. For each commercial bank, we estimate the ownership status of its (top-holder) BHC based on a NIC indicator for whether the BHC's securities are traded and are subject to registration, or it is required to report to the SEC. Panel A shows the level of aggregate total assets of U.S. commercial banks that are held by a publicly-traded BHC and of U.S. commercial banks that are held by a privately-held BHC from 1990 to 2014. Panel B shows the growth rate of these aggregate series. Specifically, we plot each of the two series scaled by its respective 1990Q1 level. Sources: National Information Center (NIC) and Call Reports.

Panel B: The Growth of Aggregate Total Assets of Public and Private U.S. Commercial Banks

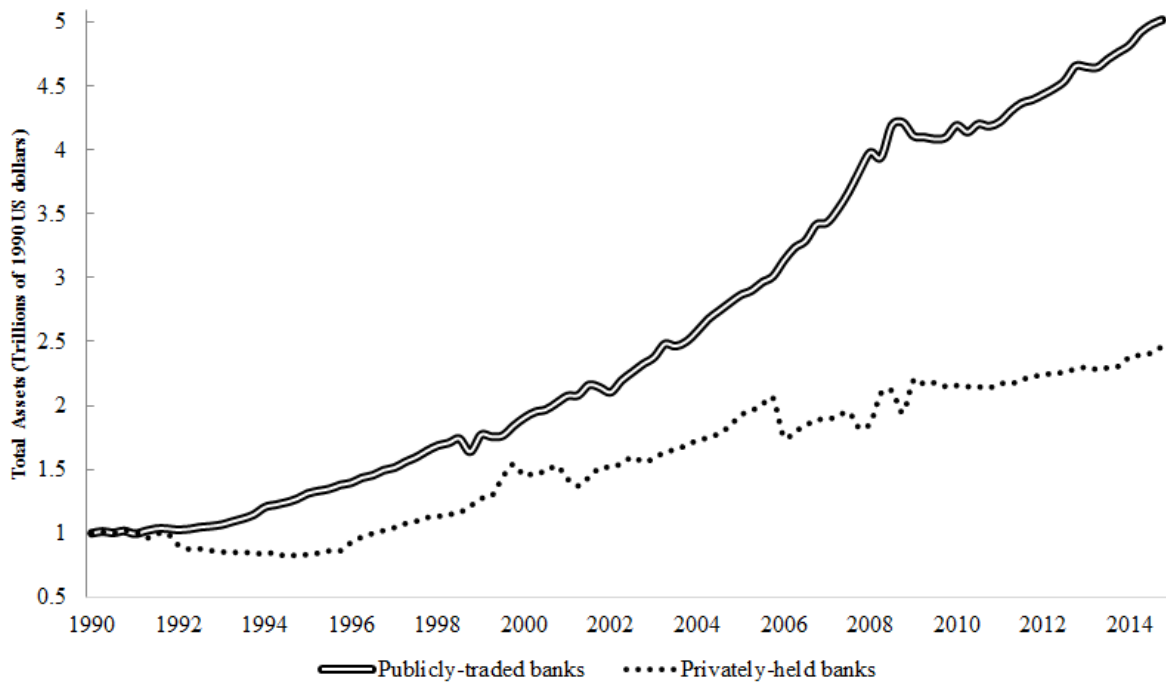
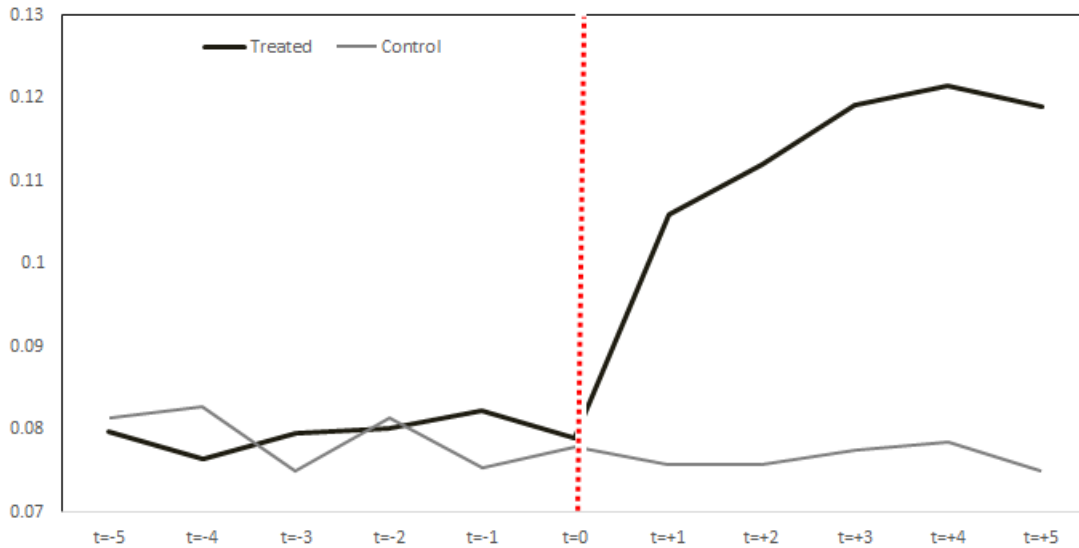


Figure 2: Bank Risk Taking Before and After a Private-to-Public Transition

The sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period announce and either complete ('treatment' group) or withdraw ('control' group) a switch from being held by a privately-held BHC to a publicly-traded BHC. The announced switches are due to two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC, which leads to a sample of 31,569 commercial bank-quarter observations involving 934 unique BHCs and 1,521 unique commercial banks between 1990 and 2012. This figure shows the likelihood (average annual frequency) of a bad CAMELS rating (vertical axis) in event time leading to and after the year when a bank announces a private-to-public transition ($t=0$) for treated (the black line) and control banks (the gray line). Observations to the left (right) of the $t=0$ line correspond to years before (after) transition announcement.



Appendix B: Additional Results For "The Stock Market and Bank Risk Taking"

Table B.1: Is There a Public-Private Management Quality and Risk Taking Gag? Univariate Cross-Sectional Evidence

This table presents summary statistics and univariate tests of differences in means between banks held by publicly-traded vs. privately-held BHCs in our merged BHC-Commercial Bank Sample, which consists of 234,535 commercial bank-quarter observations for the universe of commercial banks held by a BHC between 1990 and 2012.

	All BHCs			Large But Not Complex			Large & Complex			Very Large		
	Public (1)	Private (2)	Diff (3)	Public (4)	Private (5)	Diff (6)	Public (7)	Private (8)	Diff (9)	Public (10)	Private (11)	Diff (12)
<i>Supervisory Quality Ratings of Commercial Banks (levels):</i>												
Capital Adequacy	1.66	1.65	0.01***	1.55	1.43	0.12***	1.62	1.45	0.17***	1.59	1.36	0.23***
Asset Quality	1.70	1.69	0.01	1.58	1.54	0.04***	1.65	1.45	0.20***	1.67	1.32	0.35***
Management Quality	1.78	1.76	0.02*	1.65	1.58	0.07**	1.70	1.47	0.22***	1.70	1.34	0.36***
Earnings	1.85	1.85	0.01	1.74	1.68	0.08**	1.78	1.70	0.08***	1.76	1.66	0.10***
Liquidity	1.66	1.60	0.06***	1.57	1.39	0.18***	1.61	1.41	0.20***	1.60	1.22	0.39***
Risk-sensitivity	1.70	1.63	0.08***	1.57	1.52	0.05**	1.70	1.32	0.38***	1.70	1.21	0.49***
Combined CAMELS	1.74	1.73	0.01**	1.61	1.49	0.12***	1.68	1.46	0.22***	1.68	1.32	0.36***
STBL Loan Risk	3.34	3.02	0.32***	3.41	3.32	0.09**	3.37	3.01	0.37***	3.36	3.02	0.34***
Overall Bank Quality Score	2.28	2.24	0.04***	2.21	2.11	0.10***	2.26	2.10	0.16***	2.25	1.95	0.30***
Bad Rating Dummy	0.26	0.25	0.01***	0.22	0.19	0.03***	0.25	0.16	0.09***	0.25	0.12	0.13***
<i>Supervisory Quality Ratings of Commercial Banks (likelihood of a "new" bad rating (%)):</i>												
Capital Adequacy	2.58	2.39	0.19***	1.55	1.54	0.01	2.27	1.14	1.14***	1.39	0.33	1.07***
Asset Quality	4.92	4.64	0.28***	3.59	3.57	0.02	4.52	2.61	1.91***	4.36	2.00	2.36***
Management Quality	4.28	4.02	0.26***	2.31	2.29	0.02	3.20	2.06	1.14***	2.32	1.06	1.26***
Earnings	4.57	4.50	0.07	2.91	2.85	0.06	4.31	3.25	1.05***	3.90	3.06	0.83**
Liquidity	2.85	2.51	0.34***	2.06	2.02	0.04	2.24	1.21	1.03***	2.25	0.37	1.88***
Risk-sensitivity	4.31	3.28	1.04***	2.20	1.78	0.42	5.24	3.74	1.50***	3.76	2.71	1.05***
Combined CAMELS	3.17	3.11	0.06	2.01	2.00	0.01	2.54	1.92	0.62***	1.91	1.10	0.80***
STBL Loan Risk	15.91	13.14	2.77***	15.93	15.45	0.48**	15.84	12.30	3.55***	15.81	10.86	4.95***
Overall Bank Quality Score	7.59	7.32	0.27**	5.85	5.79	0.06	7.32	6.50	0.82***	7.90	6.00	1.89***
Bad Rating Dummy	10.12	9.90	0.22**	7.73	7.70	0.03	8.01	6.20	1.81***	7.12	5.30	1.82***
Bank-Quarter Obs	220,194											
BHCs	3,721											
Commercial Banks	8,314											
				15,363			38,153			21,064		
				329			259			174		
				1,226			2,337			1,327		

Table B.1 (continued): Is There a Public-Private Management Quality and Risk Taking Gag? Additional Univariate Tests

This table presents summary statistics and univariate tests of differences in means between banks held by publicly-traded vs. privately-held BHCs in our merged BHC-Commercial Bank Sample, which consists of 234,535 commercial bank-quarter observations for the universe of commercial banks held by a BHC between 1990 and 2012.

	All BHCs			Large But Not Complex			Large & Complex			Very Large		
	Public (1)	Private (2)	Diff (3)	Public (4)	Private (5)	Diff (6)	Public (7)	Private (8)	Diff (9)	Public (10)	Private (11)	Diff (12)
<i>Commercial Bank Performance & Other Risk Taking Variables:</i>												
ROE	1.82	2.39	-0.57***	1.82	4.26	-2.45***	1.82	2.28	-0.46***	1.91	2.46	-0.55***
Leverage ratio	9.25	9.24	0.01	8.86	9.61	-0.75***	10.16	10.22	-0.06	11.10	12.37	-1.27***
Tier 1 capital (to assets)	8.98	9.08	-0.10***	8.70	9.14	-0.43***	9.57	9.76	-0.19*	10.52	11.31	-0.79***
Non performing loans	1.62	1.61	0.01	1.49	1.47	0.02	1.63	1.53	0.10***	1.70	1.03	0.67***
Loan loss provisions	0.38	0.31	0.08***	0.38	0.37	0.01	0.45	0.36	0.10***	0.48	0.26	0.22***
Loan to assets g.r.	0.82	0.99	-0.18	1.21	0.71	0.50*	0.49	1.47	-0.98**	0.59	1.57	-0.98**
Off bal. sheet cmtmts g.r.	3.51	1.95	1.55***	1.88	1.46	0.42	0.17	0.52	-0.35	1.25	1.82	0.57
Hot money to assets g.r.	0.56	0.48	0.08***	0.79	0.32	0.47***	0.75	0.43	0.32***	0.90	0.70	0.20**
Liquid assets (to assets)	22.73	25.41	-2.68***	27.79	38.25	-10.46***	22.57	30.88	-8.31***	22.23	31.11	-8.88***
Net interest margin	4.04	4.27	-0.23***	3.90	4.08	-0.18***	3.84	3.80	0.04	3.85	3.81	0.04
Maturity mismatch	36.52	31.60	4.92***	43.98	41.68	2.31***	32.33	23.36	8.97***	32.37	25.68	7.69***
Return on risky assets	0.60	0.41	0.19***	0.61	0.56	0.06	0.84	0.67	0.17***	1.09	0.71	0.38***
Volatile liabilities depend.	13.64	13.09	0.55***	13.85	13.51	0.34	14.44	13.65	0.79**	15.00	13.81	1.19**
<i>Commercial Bank Characteristics:</i>												
Assets (Log)	12.41	11.93	0.48***	12.56	12.60	-0.04	12.62	12.61	0.01	12.88	12.77	0.11**
Publicly traded BHC	1	0	1	1	0	1	1	0	1	1	0	1
Complex BHC	0.37	0.12	0.25***	0	0	0	1	1	0	0.90	0.95	-0.05***
Total loans to assets	61.67	61.41	0.35***	57.61	52.21	5.41***	60.08	62.84	-2.77***	58.46	58.90	-0.54
Core deposits to assets	68.61	71.63	-3.14***	68.87	67.93	0.95**	64.60	68.08	-3.47***	61.47	61.64	-0.16
Private securities to loans	45.72	52.81	-7.08***	63.41	87.20	-23.79***	42.10	40.48	1.62*	41.92	43.68	-1.76
CRE loans to assets	20.29	21.71	-1.42***	16.03	23.48	-7.45***	15.98	14.76	1.22***	12.19	11.14	1.05***
C&I loans to assets	10.37	10.12	0.25***	9.48	5.74	3.74***	10.10	10.18	-0.08	9.74	7.96	1.78***
Non-interest income	13.89	11.87	2.02***	15.01	15.10	-0.09	17.43	15.89	1.54***	20.84	19.27	1.56***
Private label MBS to assets	0.27	0.20	0.07***	0.31	0.32	-0.01	0.37	0.27	0.10***	0.39	0.30	0.09***
Bank-Quarter Obs	220,194			15,363			38,153			21,064		
BHCs	3,721			329			259			174		
Commercial Banks	8,314			1,226			2,337			1,327		

Table B.2: Time-Series Evolution of the Public-Private Management Quality and Risk Taking Gap – LARGE & COMPLEX BHCs

This table reports differences in annual averages of each management score between banks held by publicly-traded vs. privately-held BHCs in our merged BHC-Commercial Bank Sample, which consists of 234,535 commercial bank-quarter observations for the universe of commercial banks held by a BHC between 1990 and 2012.

Year	Capital Adequacy 1	Asset Quality 2	Management Quality 3	Earnings 4	Liquidity 5	Risk 6	Overall Bank Quality Score 7	Bad Rating Dummy 8
1990	0.20***	0.34***	0.25***	0.35***	0.11***		0.30***	0.15***
1991	0.21***	0.32***	0.25***	0.35***	0.12***		0.33***	0.16***
1992	0.16***	0.31***	0.19***	0.28***	0.09**		0.26***	0.18***
1993	0.21***	0.33***	0.24***	0.26***	0.01		0.25***	0.13***
1994	0.08**	0.24***	0.16***	0.17***	0.01		0.10**	0.07***
1995	0.07*	0.03	0.03*	0.10***	0.01		0.01	0.07***
1996	0.15***	0.03	0.01	0.01	0.16***		0.01	0.03*
1997	0.03	0.05*	0.21***	0.01	0.23***	0.39***	0.07**	0.02
1998	0.05*	0.11***	0.22***	0.00	0.29***	0.45***	0.10***	0.01
1999	0.11***	0.14***	0.19***	0.00	0.32***	0.48***	0.08**	0.01
2000	0.24***	0.16***	0.26***	0.00	0.23***	0.37***	0.01	0.01
2001	0.17***	0.14***	0.20***	0.00	0.17***	0.34***	0.01	0.01
2002	0.31***	0.17***	0.24***	0.01	0.29***	0.47***	0.10***	0.02*
2003	0.25***	0.14***	0.26***	0.02	0.36***	0.48***	0.11***	0.04*
2004	0.33***	0.16***	0.33***	0.05*	0.42***	0.44***	0.19***	0.05**
2005	0.18***	0.12***	0.21***	0.06*	0.23***	0.25***	0.07*	0.04*
2006	0.12***	0.12***	0.05*	0.08**	0.13***	0.14***	0.08*	0.02*
2007	0.15***	0.11***	0.11***	0.10***	0.22***	0.25***	0.11**	0.04*
2008	0.38***	0.30***	0.20***	0.11***	0.43***	0.24***	0.21***	0.16***
2009	0.51***	0.38***	0.38***	0.49***	0.47***	0.33***	0.30***	0.21***
2010	0.47***	0.26***	0.23***	0.43***	0.37***	0.34***	0.28***	0.21***
2011	0.37***	0.05*	0.05*	0.10***	0.03*	0.12**	0.01	0.01
2012	0.15***	0.05*	0.07*	0.22***	0.05*	0.15***	0.07**	0.07**
Total	0.17***	0.20***	0.22***	0.08***	0.20***	0.38***	0.16***	0.09***

Table B.2 (continued): Time-Series Evolution of the Public-Private Management Quality and Risk Taking Gap – LARGE BHCs

This table reports differences in annual averages of each management score between banks held by publicly-traded vs. privately-held BHCs in our merged BHC-Commercial Bank Sample, which consists of 234,535 commercial bank-quarter observations for the universe of commercial banks held by a BHC between 1990 and 2012.

Year	Capital Adequacy 1	Asset Quality 2	Management Quality 3	Earnings 4	Liquidity 5	Risk 6	Overall Bank Quality Score 7	Bad Rating Dummy 8
1990	0.01	0.01	0.05**	0.01	0.08***		0.01	0.01
1991	0.06**	0.05***	0.12***	0.12***	0.10***		0.11***	0.05**
1992	0.10***	0.15***	0.13***	0.15***	0.05*		0.13***	0.06***
1993	0.12***	0.16***	0.12***	0.09**	0.01		0.07**	0.03*
1994	0.07**	0.06*	0.05**	0.10**	0.03*		0.03*	0.03*
1995	0.03	0.11***	0.04*	0.01	0.01		0.01	0.01
1996	0.10***	0.01	0.03*	0.01	0.08***		0.01	0.01
1997	0.01	0.01	0.10***	0.01	0.24***	0.32***	0.07**	0.03*
1998	0.04*	0.10***	0.08***	0.00	0.25***	0.20***	0.06*	0.01
1999	0.09***	0.13***	0.10***	0.02	0.22***	0.31***	0.05*	0.04*
2000	0.16***	0.18***	0.27***	0.01	0.21***	0.32***	0.05*	0.03*
2001	0.20***	0.24***	0.27***	0.01	0.17***	0.37***	0.09***	0.01
2002	0.32***	0.25***	0.35***	0.01	0.35***	0.50***	0.28***	0.05**
2003	0.32***	0.27***	0.35***	0.05*	0.35***	0.48***	0.45***	0.08***
2004	0.36***	0.26***	0.38***	0.15***	0.38***	0.39***	0.50***	0.08***
2005	0.28***	0.21***	0.33***	0.14***	0.34***	0.27***	0.37***	0.04**
2006	0.25***	0.12***	0.25***	0.14***	0.34***	0.08**	0.11***	0.03*
2007	0.31***	0.17***	0.27***	0.18***	0.32***	0.07**	0.21***	0.08***
2008	0.28***	0.27***	0.28***	0.24***	0.46***	0.10**	0.23***	0.11***
2009	0.30***	0.18***	0.34***	0.42***	0.48***	0.11**	0.25***	0.12***
2010	0.15***	0.08**	0.13***	0.30***	0.26***	0.15**	0.13**	0.03*
2011	0.06*	0.03*	0.04*	0.08*	0.05**	0.12**	0.05*	0.01
2012	0.05*	0.02*	0.03*	0.02	0.03*	0.09*	0.05*	0.01
Total	0.15***	0.11***	0.18***	0.06***	0.20***	0.23***	0.12***	0.04***

Table B.3: Bank Fixed Effects Analysis of Management Issues – ALL BHCs, "switchers sample" – exam quarters only

The sample is the switchers sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period experience a switch from being held by a privately-held to a publicly-traded BHC. Switches occur for two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC. The switchers sample consists of 28,776 commercial bank-quarter observations involving 758 BHCs and 1,294 commercial banks between 1990 and 2012, of which 5,005 are quarters when a bank receives an on-site supervisory examination. This table reports parameter estimates from OLS regressions of a dummy for bad management score, which is defined as a rating of 3 or worse, on a dummy that equals one for commercial banks that are held by a publicly-traded BHC, while controlling for a standard set of bank characteristics. Year and quarter dummies as well as commercial bank fixed effects are included in all regressions. p-values (in parentheses) are clustered at the BHC level, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

	Capital Adequacy 1	Asset Quality 2	Management Quality 3	Earnings 4	Liquidity 5	Risk 6	Composite CAMELS 7	STBL* Loan Risk 8	Overall Bank Quality Score 9	Bad Rating Dummy 10
Public BHC Dummy	0.038*** (0.013)	0.039*** (0.015)	0.050*** (0.018)	0.053** (0.023)	0.035** (0.014)	0.052*** (0.020)	0.056*** (0.017)	0.079*** (0.007)	0.068*** (0.026)	0.067*** (0.026)
Total Assets BHC	-0.009 (0.006)	0.004 (0.009)	-0.005 (0.006)	-0.072*** (0.011)	-0.013** (0.006)	-0.008 (0.007)	-0.005 (0.007)	0.193*** (0.021)	-0.063*** (0.012)	-0.061*** (0.012)
Total Assets	-0.001 (0.010)	0.030** (0.015)	0.015 (0.013)	0.019 (0.022)	-0.012 (0.013)	0.041** (0.018)	0.008 (0.014)	0.095 (0.089)	0.046* (0.023)	0.048** (0.023)
Loans to Assets	-0.054 (0.073)	0.116 (0.104)	0.177* (0.093)	-0.067 (0.131)	0.248*** (0.086)	-0.181* (0.101)	0.001 (0.087)	1.346*** (0.135)	0.167 (0.137)	0.164 (0.137)
Deposit to Assets	-0.190*** (0.064)	-0.298*** (0.088)	-0.303*** (0.076)	-0.492*** (0.104)	-0.412*** (0.071)	-0.267*** (0.070)	-0.260*** (0.073)	0.585*** (0.059)	-0.702*** (0.115)	-0.684*** (0.115)
Securities to Loans	-0.059*** (0.020)	-0.030 (0.025)	0.021 (0.027)	-0.036 (0.040)	0.001 (0.019)	-0.030 (0.033)	-0.054** (0.025)	0.042 (0.045)	0.002 (0.042)	0.002 (0.042)
Tier 1 Capital	-1.722*** (0.269)	-1.905*** (0.408)	-1.037*** (0.363)	-0.853* (0.464)	-1.210*** (0.306)	-1.337*** (0.421)	-1.252*** (0.351)	0.220 (0.393)	-1.838*** (0.500)	-1.815*** (0.505)
BHC Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year & Quarter Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.	5,005	5,005	5,005	5,005	5,005	2,930	5,005	46,763	5,005	5,005
Adj-R ²	0.459	0.461	0.386	0.442	0.356	0.339	0.434	0.340	0.436	0.436

Table B.4: Bank Fixed Effects Analysis of Supervisory Ratings– ALL BHCs, "switchers sample" – IPOs only

The sample is the switchers sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period experience a switch from being held by a privately-held to a publicly-traded BHC. The table reports results for switches that occur due to an IPO, which leads to a sample of 15,411 commercial bank-quarter observations involving 206 unique BHCs and 406 unique commercial banks between 1990 and 2012. This table reports parameter estimates from OLS regressions of each management score on a dummy that equals one for commercial banks that are held by a publicly-traded BHC, while controlling for a standard set of bank characteristics. Year and quarter dummies as well as commercial bank fixed effects are included in all regressions. p-values (in parentheses) are clustered at the BHC level, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

	Capital Adequacy 1	Asset Quality 2	Management Quality 3	Earnings 4	Liquidity 5	Risk 6	Composite CAMELS 7	STBL Loan Risk 8	Overall Bank Quality Score 9	Bad Rating Dummy 10
Panel A: All BHCs										
Public BHC Dummy	0.122*** (0.037)	0.121** (0.049)	0.178*** (0.042)	0.127** (0.052)	0.109*** (0.035)	0.117*** (0.037)	0.178*** (0.037)	0.097*** (0.039)	0.136*** (0.045)	0.058** (0.024)
Total Assets BHC	-0.026 (0.018)	0.017 (0.024)	-0.041** (0.019)	-0.168*** (0.032)	0.004 (0.016)	-0.008 (0.022)	-0.037* (0.019)	-0.118*** (0.033)	-0.082*** (0.025)	-0.067*** (0.016)
Total Assets	-0.048 (0.034)	0.069 (0.044)	0.012 (0.040)	-0.021 (0.053)	-0.053 (0.036)	0.036 (0.054)	-0.037 (0.039)	-0.003 (0.005)	0.010 (0.047)	0.018 (0.027)
Loans to Assets	0.019 (0.218)	-0.262 (0.293)	-0.103 (0.228)	-0.970*** (0.312)	1.012*** (0.202)	-0.493** (0.235)	-0.027 (0.223)	0.552 (0.422)	-0.337 (0.279)	-0.206 (0.162)
Deposit to Assets	-0.455*** (0.145)	-0.285 (0.199)	-0.462*** (0.162)	-0.987*** (0.208)	-1.289*** (0.150)	-0.552*** (0.154)	-0.626*** (0.160)	0.564*** (0.151)	-0.755*** (0.190)	-0.473*** (0.110)
Securities to Loans	-0.113 (0.072)	-0.247** (0.097)	-0.091 (0.072)	-0.288*** (0.108)	-0.054 (0.061)	-0.124 (0.086)	-0.139* (0.076)	0.036 (0.164)	-0.216** (0.109)	-0.105** (0.050)
Tier 1 Capital	-10.001*** (0.968)	-2.945*** (1.057)	-1.578* (0.866)	-3.306** (1.314)	-2.937*** (0.688)	-2.831*** (1.001)	-3.904*** (0.876)	-8.782*** (1.049)	-2.108* (1.117)	-0.860 (0.627)
BHC Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year & Quarter Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.	15,411	15,411	15,411	15,411	15,411	11,657	15,411	25,915	15,411	15,411
Adj-R ²	0.476	0.389	0.378	0.408	0.451	0.381	0.421	0.440	0.380	0.339

Table B.5: Matched-Sample Difference-in-Differences Analysis, Baseline Tests – "Identification sample" with Cancelled Deals as Control Group

The sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period announce and either complete ('treatment' group) or withdraw ('control' group) a switch from being held by a privately-held BHC to a publicly-traded BHC. The announced switches are due to two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC, which leads to a sample of 31,569 commercial bank-quarter observations involving 934 unique BHCs and 1,521 unique commercial banks between 1990 and 2012. This table reports the main results of the matched-sample difference-in-differences analysis of each management score (Panel C) and of a dummy for bad management score, which is defined as a rating of 3 or worse (Panel D). Specifically, the DID specification that is estimated is $CAMELS_{it} - \bar{CAMELS}_{-it} = \alpha + \beta_1 After_{it} + \beta_2 After_{it} \times Treatment_{it} + \gamma Z_{it} + \mu_i + \mu_t + \varepsilon_{it}$, where $After$ is an indicator variable that takes a value of one for all the quarters after the announcement date and zero otherwise, and $Treatment$ is an indicator variable that takes a value of one for commercial banks in the treatment group and zero for those in the matched control group. To implement the estimator, we use a methodology analogous to long-run event studies (e.g., Barber and Lyons (1997)) and for each bank-quarter construct a "benchmark" $CAMELS_{-it}$, for a matched portfolio of banks. Matching is done with respect to year and commercial bank size. Year and quarter dummies as well as commercial bank fixed effects are included in all regressions. p-values (in parentheses) are clustered at the BHC level, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

	Capital Adequacy 1	Asset Quality 2	Management Quality 3	Earnings 4	Liquidity 5	Risk 6	Composite CAMELS 7	STBL Loan Risk 8	Overall Bank Quality Score 9	Bad Rating Dummy 10
Panel C: Matched-sample DID Analysis of Supervisory Ratings										
After*Treatment	0.208*** (0.057)	0.257*** (0.066)	0.175*** (0.057)	0.134** (0.068)	0.109* (0.060)	0.248*** (0.073)	0.185*** (0.059)	0.225*** (0.054)	0.168*** (0.058)	0.118*** (0.040)
After	-0.159 (0.118)	-0.161 (0.123)	-0.087 (0.099)	-0.046 (0.145)	-0.030 (0.118)	-0.049 (0.157)	-0.096 (0.113)	-0.121 (0.137)	-0.096 (0.102)	-0.097 (0.089)
Total Assets BHC	0.003 (0.020)	0.036* (0.021)	0.027 (0.021)	0.040 (0.030)	-0.018 (0.017)	0.081** (0.032)	0.029 (0.023)	0.346* (0.187)	0.032 (0.020)	0.025** (0.011)
Total Assets	0.065* (0.034)	0.182*** (0.041)	0.134*** (0.037)	0.073 (0.055)	0.024 (0.035)	0.121** (0.054)	0.128*** (0.038)	-0.142 (0.264)	0.092** (0.044)	0.019 (0.026)
Loans to Assets	0.112 (0.179)	0.232 (0.186)	0.285* (0.159)	-0.618*** (0.223)	0.956*** (0.161)	-0.088 (0.173)	0.186 (0.157)	0.578 (1.071)	0.017 (0.178)	-0.071 (0.100)
Deposit to Assets	-0.343** (0.148)	-0.369** (0.187)	-0.371** (0.153)	-0.703*** (0.192)	-1.062*** (0.143)	-0.236 (0.164)	-0.463*** (0.149)	0.128 (0.748)	-0.561*** (0.166)	-0.364*** (0.106)
Securities to Loans	-0.046 (0.045)	-0.129** (0.052)	0.052 (0.050)	-0.111* (0.065)	0.002 (0.046)	0.052 (0.069)	-0.030 (0.042)	0.082 (0.411)	-0.021 (0.064)	-0.037 (0.034)
Tier 1 Capital	-8.739*** (0.842)	-3.037*** (0.788)	-1.316* (0.685)	-4.537*** (1.069)	-1.706*** (0.556)	-1.782** (0.853)	-3.294*** (0.756)	-5.082*** (1.938)	-3.320*** (0.784)	-1.332*** (0.453)
BHC Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year & Quarter Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.	31,569	31,569	31,569	31,569	31,569	17,622	31,569	52,614	31,569	31,569
Adj-R ²	0.611	0.542	0.543	0.575	0.597	0.569	0.581	0.655	0.545	0.488
Panel D: Matched-sample DID Analysis of Management Issues										
After*Treatment	0.051*** (0.014)	0.061*** (0.016)	0.060*** (0.016)	0.052*** (0.018)	0.002 (0.027)	0.068*** (0.021)	0.074*** (0.020)	0.109*** (0.036)	0.097*** (0.037)	0.098*** (0.040)
After	-0.037 (0.048)	-0.041 (0.043)	-0.040 (0.054)	-0.064* (0.037)	0.035 (0.052)	-0.030 (0.051)	-0.030 (0.052)	-0.052 (0.067)	-0.051 (0.060)	-0.047 (0.059)
Number of Obs.	31,569	31,569	31,569	31,569	31,569	17,622	31,569	52,614	31,569	31,569

Table B.6: How Do Switchers Take On More Risk? Additional Analysis of Bank Decisions in the Run-Up to the Crisis

The sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period announce and either complete ('treatment' group) or withdraw ('control' group) a switch from being held by a privately-held BHC to a publicly-traded BHC. The period is 1997 to 2006. The announced switches are due to two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC, which leads to a sample of up to 14,479 commercial bank-quarter observations involving 464 unique BHCs and 788 unique commercial banks between 1997 and 2006. This table reports the main results of the difference-in-differences analysis of bank decisions on Capital Adequacy and Asset Quality (Panel A), and Liquidity and Risk (Panel B). Specifically, the DID specification that is estimated is $Decision_{it} = \alpha + \beta_1 After_{it} + \beta_2 After_{it} \times Treatment_{it} + \gamma Z_{it} + \mu_i + \mu_t + \varepsilon_{it}$, where $After$ is an indicator variable that takes a value of one for all the quarters after the announcement date and zero otherwise, and $Treatment$ is an indicator variable that takes a value of one for commercial banks in the treatment group and zero for those in the control group. Year and quarter dummies as well as commercial bank fixed effects are included in all regressions. p-values (in parentheses) are clustered at the BHC level, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

		Panel A: Analysis of Capital Adequacy and Asset Quality Decisions					
		Total Risk Based Capital Ratio	Total Assets Growth	CRE Loan Growth	C&I Loan Growth	RRE Loan Growth	
After*Treatment	[1]	-0.009*** (0.003)	0.010 (0.008)	0.029* (0.016)	0.010 (0.033)	0.029*** (0.010)	
After		0.002 (0.001)	-0.010 (0.008)	-0.019 (0.017)	-0.023 (0.032)	-0.017 (0.015)	
Bank, Year-Quarter F.E	Yes	Yes	Yes	Yes	Yes	Yes	
Number of Obs.	14,479	14,396	14,079	13,981	13,981	13,981	
		Panel B: Analysis of Liquidity and Additional Risk Decisions					
		Core Deposits/ Total Assets	Private MBS/ Total Assets	Non Interest Income/ Total Income	Fiduciary Income/ Total Income	Investment Banking Income/Total Income	Income from Securi- ties/Private Securities
After*Treatment	[2]	-0.025*** (0.006)	0.002*** (0.001)	0.022*** (0.008)	0.005*** (0.001)	0.007*** (0.001)	0.005*** (0.001)
After		0.007 (0.005)	-0.001 (0.001)	-0.007 (0.009)	-0.001 (0.001)	-0.002 (0.004)	0.000 (0.000)
Number of Obs.	14,479	7,350	14,479	14,479	14,479	14,479	14,479

Table B.7: Difference-in-Differences Analysis, Diagnostic Tests – Balancing Tests of Pre-Event Characteristics of Banks in the M&A Sample

The starting sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period become targets of a completed M&A deal, which involves either an acquisition of a privately-held target by a publicly-traded acquirer that lead to an ownership switch ('treatment' group) or an acquisition between two publicly-traded or two privately-held BHCs that do not lead to an ownership switch ('control' group). The resulting sample consists of 2,431 unique commercial banks between 1990 and 2012. This table reports tests of the validity of the M&A sample construction for the difference-in-differences analysis. Panel A reports summary statistics of pre-treatment CAMELS ratings, their trends, as well as balance sheet characteristics for banks whose chartered is discontinued in the same quarter when their BHC is acquired (Column 1), for banks whose chartered is discontinued in the next quarter after the acquisition of their BHC (Column 2), and for banks whose charter is not discontinued either in the quarter when their BHC is acquired or in the next quarter (Column 3), respectively. These variables are measured as of the quarter prior to the M&A deal. Column 4 reports t-tests of the null hypothesis that banks whose chartered is discontinued either in the quarter when their BHC is acquired or in the next quarter and those banks whose charter is not discontinued until later or at all are similar along each characteristic. Panel B reports OLS estimates from a linear probability model relating the likelihood that the bank charter is discontinued either in the quarter when their BHC is acquired or in the next quarter to the pre-announcement characteristics of the target commercial bank. Year-quarter dummies are included in all regressions. p-values (in parentheses) are robust, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

Panel A: Pre-Announcement Bank Characteristics for M&A Deals with Different Degrees of Attrition				
	Absorbed in BHC Merger Quarter, t Mean (1)	Absorbed in the Next Quarter, $t + 1$ Mean (2)	Not Absorbed in Quarters $t, t + 1$ Mean (3)	Difference Bet- ween (1) and the mean of (2) & (3) (t-stat) (4)
Total Assets $_{t-1}$, log (\$1,000s)	12.126	12.066	11.960	0.149 (1.205)
Loans to Assets $_{t-1}$	0.635	0.605	0.574	0.056 (1.025)
Deposits to Assets $_{t-1}$	0.725	0.724	0.735	-0.010 (-1.283)
Securities to Loans $_{t-1}$	0.515	0.523	0.529	-0.091 (-1.210)
Tier 1 Capital $_{t-1}$	0.088	0.086	0.085	0.001 (0.468)
CAMELS rating $_{t-1}$	1.803	1.805	1.833	-0.032 (-0.605)
Δ CAMELS rating $_{t-1}$	-0.001	0.002	-0.007	0.005 (0.657)
Δ CAMELS rating $_{t-2}$	-0.010	-0.015	-0.015	0.006 (0.606)
Number of Obs.	794	171	1,637	2,431
Panel B: Probability of Attrition (=1 if Bank Absorbed in Quarters $t, t + 1$)				
	pre-event firm size (1)	pre-event firm characteristics (2)	pre-event CAMELS (3)	pre-event trends (4)
Total Assets $_{t-1}$	0.003 (0.007)	0.006 (0.009)	0.005 (0.009)	0.006 (0.009)
Loans to Assets $_{t-1}$		0.150 (0.131)	0.138 (0.147)	0.138 (0.129)
Deposits to Assets $_{t-1}$		0.041 (0.067)	0.032 (0.066)	0.032 (0.068)
Securities to Loans $_{t-1}$		0.009 (0.011)	0.001 (0.013)	-0.000 (0.014)
Tier 1 Capital $_{t-1}$		0.115 (0.218)	0.047 (0.209)	0.052 (0.214)
CAMELS rating $_{t-1}$			-0.009 (0.010)	-0.010 (0.011)
Δ CAMELS rating $_{t-1}$				0.014 (0.013)
Δ CAMELS rating $_{t-2}$				0.017 (0.015)
Year & Quarter Effects		Yes	Yes	Yes
Number of Obs.	2,431	2,431	2,431	2,431
Adj-R ²	0.121	0.122	0.120	0.120

Table B.7: Difference-in-Differences Analysis, Diagnostic Tests – Balancing Tests of Pre-Event Characteristics of Banks in the M&A Sample (Continued)

The starting sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period become targets of a completed M&A deal, which involves either an acquisition of a privately-held target by a publicly-traded acquirer that lead to an ownership switch ('treatment' group) or an acquisition between two publicly-traded or two privately-held BHCs that do not lead to an ownership switch ('control' group). The resulting sample consists of 2,431 unique commercial banks between 1990 and 2012. This table reports tests of the validity of the M&A sample construction for the difference-in-differences analysis. Panel C reports summary statistics of pre-treatment CAMELS ratings, their trends, as well as balance sheet characteristics for additional finer partitions of the sub-sample of banks whose charter is not discontinued in the quarter when their BHC is acquired or in the next quarter, which include those whose charter is not discontinued for up to 1 year after their BHC is acquired (Column 2), for up to 2 years after their BHC is acquired (Column 3), and for up to 3 years after their BHC is acquired (Column 4), respectively. These variables are measured as of the quarter prior to the M&A deal. Panel D reports additional OLS estimates from a linear probability model relating the likelihood that the bank charter is discontinued within N quarters after its BHC is acquired to the pre-announcement characteristics of the target commercial bank. Year-quarter dummies are included in all regressions. p-values (in parentheses) are robust, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

Panel C: Pre-Announcement Bank Characteristics for M&A Deals with Different Degrees of Attrition, Additional Brake-Downs of Banks that are not Absorbed in Quarters $t, t + 1$				
	Not Absorbed in Quarters $t, t + 1$	Not Absorbed in Quarters t to $t + 4$	Not Absorbed in Quarters t to $t + 8$	Not Absorbed in Quarters t to $t + 12$
	Mean (1)	Mean (2)	Mean (3)	Mean (4)
Total Assets $_{t-1}$, log (\$1,000s)	11.960	11.954	11.951	11.950
Loans to Assets $_{t-1}$	0.574	0.585	0.578	0.600
Deposits to Assets $_{t-1}$	0.735	0.730	0.729	0.727
Securities to Loans $_{t-1}$	0.529	0.531	0.530	0.531
Tier 1 Capital $_{t-1}$	0.085	0.087	0.088	0.088
CAMELS rating $_{t-1}$	1.833	1.799	1.796	1.798
Δ CAMELS rating $_{t-1}$	-0.007	-0.004	-0.002	-0.004
Δ CAMELS rating $_{t-2}$	-0.015	-0.015	-0.014	-0.016
Number of Obs.	1,637	1,449	1,268	1,134
Panel D: Probability of Attrition (=1 if Bank Absorbed in a Given Range of Quarters, X)				
	$X = (t, t + 1)$ (1)	$X = (t, t + 4)$ (2)	$X = (t, t + 8)$ (3)	$X = (t, t + 12)$ (4)
Total Assets $_{t-1}$	0.006 (0.009)	0.003 (0.009)	0.003 (0.009)	0.005 (0.008)
Loans to Assets $_{t-1}$	0.138 (0.129)	0.121 (0.147)	0.055 (0.078)	0.037 (0.099)
Deposits to Assets $_{t-1}$	0.032 (0.068)	0.027 (0.037)	0.051 (0.052)	0.042 (0.059)
Securities to Loans $_{t-1}$	-0.000 (0.014)	-0.009 (0.016)	-0.017 (0.021)	-0.016 (0.021)
Tier 1 Capital $_{t-1}$	0.052 (0.214)	0.087 (0.073)	0.133 (0.220)	0.042 (0.081)
CAMELS rating $_{t-1}$	-0.010 (0.011)	-0.005 (0.008)	-0.009 (0.009)	-0.010 (0.013)
Δ CAMELS rating $_{t-1}$	0.014 (0.013)	0.009 (0.011)	0.010 (0.009)	0.009 (0.008)
Δ CAMELS rating $_{t-2}$	0.017 (0.015)	0.013 (0.014)	0.011 (0.010)	0.011 (0.010)
Year & Quarter Effects	Yes	Yes	Yes	Yes
Number of Obs.	2,431	2,431	2,431	2,431
Adj-R ²	0.120	0.124	0.116	0.119

Table B.8: Additional Analysis of Bank Performance

The sample is the identification sub-sample, which is defined as those commercial banks in our merged BHC-Commercial Bank Sample that over the sample period announce and either complete ('treatment' group) or withdraw ('control' group) a switch from being held by a privately-held BHC to a publicly-traded BHC. The announced switches are due to two reasons, an IPO or an acquisition of a privately-held target by a publicly-traded BHC, which leads to a sample of 31,569 commercial bank-quarter observations involving 934 unique BHCs and 1,521 unique commercial banks between 1990 and 2012. This table reports the main results of a calendar-time analysis of the evolution of a bank's operating performance after the quarter when it announces a private-to-public transition ($t = 0$). We report results for two metrics of bank operating performance, return on equity (ROE) in Panel A and return on assets (ROA) in Panel B, respectively. Specifically, the specification that is estimated is $Perf_{ormance_{it+N}} - Perf_{ormance_{it-1}} = \alpha + \beta_1 Treatment_{it} + \gamma Z_{it} + \mu_t + \varepsilon_{it}$, where $Treatment$ is an indicator variable that takes a value of one for commercial banks in the treatment group and zero for those in the control group, and N is the number of quarters since the quarter when the private-to-public transition is announced. Year-quarter dummies are included in all regressions. p-values (in parentheses) are clustered at the BHC level, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

Panel A: Dynamic Analysis of Bank Performance, ROE										
	$Perf_{t+1}-Perf_{t-1}$	$Perf_{t+2}-Perf_{t-1}$	$Perf_{t+4}-Perf_{t-1}$	$Perf_{t+6}-Perf_{t-1}$	$Perf_{t+8}-Perf_{t-1}$	$Perf_{t+12}-Perf_{t-1}$	$Perf_{t+16}-Perf_{t-1}$	$Perf_{t+20}-Perf_{t-1}$		
Treatment	0.001 (0.005)	0.006 (0.004)	0.009** (0.004)	0.009*** (0.003)	0.001 (0.003)	-0.006** (0.003)	-0.011** (0.005)	-0.006 (0.004)		
Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
YR-QRT FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,521	1,485	1,305	1,143	1,059	979	871	763		
Adj-R ²	0.124	0.125	0.143	0.138	0.137	0.148	0.133	0.111		
Panel B: Dynamic Analysis of Bank Performance, ROA										
	$Perf_{t+1}-Perf_{t-1}$	$Perf_{t+2}-Perf_{t-1}$	$Perf_{t+4}-Perf_{t-1}$	$Perf_{t+6}-Perf_{t-1}$	$Perf_{t+8}-Perf_{t-1}$	$Perf_{t+12}-Perf_{t-1}$	$Perf_{t+16}-Perf_{t-1}$	$Perf_{t+20}-Perf_{t-1}$		
Treatment	-0.000 (0.001)	0.001 (0.001)	0.002** (0.001)	0.002** (0.001)	-0.001** (0.001)	-0.002** (0.001)	-0.002*** (0.001)	-0.001** (0.000)		
Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
YR-QRT FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,521	1,485	1,305	1,143	1,059	979	871	763		
Adj-R ²	0.112	0.126	0.135	0.129	0.136	0.141	0.126	0.113		