Stress Test Failures and Corporate Mergers and Acquisitions*

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Abstract

This study documents that corporate borrowers of banks that failed stress tests subsequently conduct fewer mergers and acquisitions (M&A). The effect is stronger for treated firms with weaker corporate governance or more susceptible to managerial agency problems. We further document increased financial covenant usage in M&A-related bank loan contracts, as well as improved M&A deal quality, after stress test failures, suggesting that stress testing failures triggered enhanced bank screening on borrowers' M&A projects. Moreover, refrained from M&A activity that can hurt shareholders, treated firms subsequently improve their profitability. Our empirical evidence highlights a beneficial spillover effects of bank stress tests.

Keywords: Stress Tests; Mergers and Acquisitions; Bank Screening

JEL: G21; G34

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I. Introduction

In the wake of the Great Recession, the supervisory bank stress tests, which started with the Supervisory Capital Assessment Program (SCAP) in 2009 and later became the Comprehensive Capital Analysis and Review (CCAR) in 2011, were introduced as a forward-looking supervisory tool to ensure that banks have enough capital to survive adverse economic shocks. Failing a stress test leads to constraints on a bank's capital distribution plan, as well as potential reputational damage. Over time, the stress tests have been shown to be effective in improving the financial resilience of banks and enhancing their risk management practices (e.g., Acharya, Berger, and Roman, 2018; Pierret and Steri, 2019). However, most of the extant studies focus on the banks. Questions of whether and how the real sector were affected thus remain largely unanswered. In this paper, we study the mergers and acquisitions (M&A) activity of the corporate borrowers of banks that failed stress tests and provide novel, empirical evidence on the impact of failing a stress test on the real economy from an M&A perspective.

Different from other types of corporate investment whose quality is typically unobservable, the quality of M&A is easily measureable. Moreover, M&A is one of the largest and riskiest types of corporate investment. Financing corporate M&A often requires significant financial commitment from banks in the form of large syndicated loans. For example, when financing its acquisition of Aetna in 2018, CVS entered into a $5 billion unsecured term loan agreement that matures in 3 to 5 years.[1] Given the sheer size of M&A-related loans, and the level of riskiness involved, it is expected that having these loans on banks' balance sheet has substantial implications

[1] See https://www.sec.gov/Archives/edgar/data/64803/000006480319000013/ex131.htm.

on the stress tests results. If a bank fails a stress test, will it pay extra attention in screening the quality of its borrowers' M&A deals?[2]

Banks actively screen loan applications to select high quality borrower firms/projects and mitigate adverse selection (e.g., Stiglitz and Weiss, 1981; Bester, 1985; Marquez, 2002). Given the forward-looking nature of the stress tests and the significant adverse shock that failing a stress test constitutes to a bank, the failure bank will need to restructure its lending portfolio and enhance the risk management and screening on financing projects with significant uncertainty (e.g., Lambertini and Mukherjee, 2016; Acharya, Berger, and Roman, 2018; Fernandes, Igan, and Pinheiro, 2020). We conjecture that, under the tightened screening imposed by the stress test failure banks, borrower firms of these banks are less likely to blindly engage in large M&A deals that are often value-destroying, but instead engage in a smaller number of M&A deals of higher quality. According to the methodology of the Federal Reserve's stress tests, not only do the loan size and riskiness matter for the calculation of risk-weighted assets, but having larger and risky loans also contributes to higher projected losses, making it more challenging for banks to satisfy the capital requirement in order to pass the stress test.[3]

We include only *borrower firms of banks subjected to the SCAP and/or CCAR stress tests* and employ a stacked difference-in-differences (DID) regression framework to study the impact of bank stress test failure on borrower M&A activity.[4] Specifically, for each stress test event, we examine three quarters before to three quarters after the test result release quarter (excluding the

[2] A number of banks failed the stress tests and were required to raise new capital and/or change their distribution plans. In contrast, banks that passed the stress tests, even by a small margin, were not required by the regulator to raise new capital or change distribution plans.

[3] For further information, please refer to "Dodd-Frank Act Stress Test 2018: Supervisory Stress Test Methodology and Results" (https://www.federalreserve.gov/publications/files/2018-dfast-methodology-results-20180621.pdf).

[4] Because banks subjected to stress tests are very different from those not subjected to stress tests, including firms that only borrow from banks not subjected to stress tests can introduce selection bias into our analysis on the impact of bank stress test failure on firm M&A activity.

result release quarter) to form an event subsample. We then stack all stress test event subsamples together for our DID analysis. We create a treatment dummy variable that reflects a firm's exposure to bank stress test failure: We classify a firm into the treatment group if at least one of the firm's relationship banks failed the focal stress test.

Consistent with our conjecture, the results from the DID analysis reveal that relative to the borrower firms not exposed to a bank stress test failure, borrowers exposed to a bank stress test failure significantly reduce their M&A activity in the quarters subsequent to the test result release quarter. The reduction in M&A activity is economically significant. Compared with firms not exposed to bank stress test failures, treated firms on average reduce their M&A deal value (deal count) by $25.21 million (0.01 deal) per quarter, which is 73.02% (21.74%) of the average deal value (average deal count) per quarter in the sample. The findings are robust to controlling for various borrower firm and bank characteristics as well as firm and year-quarter fixed effects.

Furthermore, we find that failing the SCAP test in 2009 has little impact on borrower M&A activity; the documented treatment effect of bank stress test failure on borrower M&A activity mainly concentrates on the subsequent CCAR tests. This is likely because the SCAP test was conducted at the height of the Great Recession when most, if not all, banks adopted prudent lending policies. In contrast, the subsequent CCAR tests were conducted when the economy was recovering and expanding, with all banks seeking growth opportunity and increasing their credit supply.

To examine whether the documented treatment effect of bank stress test failure on borrower M&A activity is driven by potential nonparallel M&A trends before the test result release, we include the test result release quarter into the sample and employ a dynamic DID regression framework to identify the exact timing of the treatment effect. We find that the treatment effect on

borrower M&A activity only exists from the test result release quarter onward but does not exist in any of the quarters prior to the test result release. This finding suggests that the parallel-trends assumption for the efficacy of the DID approach is fully satisfied, and the documented impact of bank stress test failure on borrower M&A activity is most likely causal.

If bank stress test failure decreases corporate borrowers' M&A activity through enhanced bank screening on borrower M&A to reduce loan risk, we conjecture that the treatment effect will be particularly strong for borrowers that have relatively weak corporate governance. Such firms tend to conduct risky M&A deals that profit firm managers at the expense of debtholders and shareholders (e.g., Grinstein and Hiribar, 2004; Harford and Li, 2007; and Masulis, Wang, and Xie, 2007; Furfine and Rosen, 2011). Increased bank screening will restrain these borrowers from uneconomical M&A activity. Consistent with our expectation, we find the treatment effect of stress test failure on borrower M&A is significantly stronger for borrowers with a larger board size, lower independent director ratio or lower institutional ownership, and borrowers facing lower hostile takeover threat. The treatment effect is also stronger for borrowers that are deemed to be more susceptible to managerial agency problems (Jensen and Meckling, 1976; Jensen 1986; and Stulz, 1990)—larger firms, older firms, and firms with higher free cash flows.

Another possibility is that bank stress test failure reduces borrower M&A activity not through enhancing bank screening on borrower M&A activity but simply through reducing bank credit supply to all borrowers. If that is the case, we expect that the treatment effect will be particularly strong for borrowers facing tighter financial constraints than those facing more relaxed financial constraints.[5] Contrary to this expectation, we find that the treatment effect is particularly strong for borrower firms with lower values of Whited and Wu (2006) index or Hadlock and Pierce

[5] It is worth noting that all corporate borrowers are likely to face financial constraints, albeit with different degrees of tightness, especially when it comes to financing corporate M&A—often the largest type of corporate investment.

(2010) index, firms that paid higher levels of cash dividend, firms with credit rating and especially investment-grade credit rating, and firms with higher values of Altman's Z (1968) score. Combined with the fact that firms with more relaxed financial constraints tend to conduct value-destroying M&A (e.g., Harford, 1999; Moeller, Schlingemann, and Stulz, 2004), these results again suggest that bank stress test failure reduces borrower M&A through enhanced bank screening to reduce loan risk rather than simply cutting credit supply for M&A financing.

To provide further evidence on enhanced screening on borrower M&A activity after bank stress test failure, we further investigate the impact of bank stress test failure on financial covenant usage in bank loan contracts used to fund borrower M&A activity. Covenants are frequently used in bank loan contracts to increase lenders' ex-post incentive to monitor borrowers (e.g., Rajan and Winton, 1995). Significant costs, such as increased interest rates, reduced access to credit, and increased executive turnover, can occur to a borrower firm when it violates bank loan covenants (e.g., Roberts and Sufi, 2009; Nini, Smith, and Sufi, 2012; and Ozelge and Saunders, 2012). Thus, greater covenant usage in M&A-related bank loan contracts can serve as an ex-ante screening device to mitigate the adverse selection problem associated with bank lending and discourage value-destroying M&A of borrower firms (e.g., Rothschild and Stiglitz, 1976). If banks that failed stress tests tend to increase their screening strength on borrower firms' M&A deals, after the failure shocks, we expect to observe an increase in the usage of financial covenants in bank loan contracts that are used to finance borrowers' M&A deals. Consistent with our earlier findings on M&A activity, we find that, while banks failing the SCAP test does not affect the financial covenant usage in M&A-related bank loan contracts, banks failing the subsequent CCAR tests significantly increases the usage of financial covenants in M&A-related bank loan contracts, lending further

support to the conjecture that stress test failure banks increase their screening on borrowers' risky M&A activity to reduce loan default risk.

We further examine the treatment effect of bank stress test failure on borrowers' M&A deal quality. Following the literature (e.g., Chen, Harford and Li, 2007; Gomley and Matsa, 2016), we use acquiring firms' three-day cumulative abnormal stock returns (CARs) around deal announcements as a proxy for M&A deal quality. We expect that borrowers may try to improve (or at least try not to decrease) deal quality after their relationship banks fail stress tests. We find that the DID term is positive and relatively large (around 1.1 to 1.2 percentage points for three-day CARs), albeit statistically insignificant. We conjecture that the impact of bank stress test failure on borrower M&A deal quality should only be stronger if the acquirer finances its M&A activity via raising new bank loans (and thus receiving additional bank screening on its deal quality). Consistent with this conjecture, we find that the treatment effect of bank stress test failure on borrower M&A quality is significantly more positive (around 4 to 5 percentage points) when the borrower needs to fund M&A via raising new bank loans. This finding is again consistent with enhanced bank screening on borrower M&A projects to reduce loan risk. Finally, we document a positive treatment effect of bank stress test failure on borrower firms' profitability (proxied by return on assets and return on equity) in subsequent quarters. This increased firm profitability is consistent with treatment firms refraining from M&A activity that can harm their shareholders.

This study contributes to the growing literature on the consequences of stress tests. Acharya, Berger, and Roman (2018) find that banks that participated in U.S. stress tests reduced their aggregate credit supply, especially to risky corporate borrowers and loan categories such as commercial real estate credit, to decrease their credit risk. Similarly, Pierret and Steri (2019) and Cappelletti et al. (2019) show that stress tests help banks maintain prudent lending policies and

prevent excessive risk-taking. Calem, Correa, and Lee (2019) document that the introduction of CCAR in 2011 was associated with a negative credit supply (proxied by banks' jumbo mortgage originations), especially for banks with lower capital ratios.

Moreover, Lambertini and Mukherjee (2016) examine the impact of SCAP on lending spreads and find that loan pricing is higher for all banks after the commencement of the SCAP exercise, especially for those BHCs that failed the test. Fernandes, Igan, and Pinheiro (2020) construct a dataset of the largest U.S. bank-holding companies (BHCs) as of 2014:Q4 and find only an immediate and negative lending response for those banks not passing the test. Cortes et al. (2020) show that banks that were subjected to a large increase of the stress-test implied capital requirement cut their credit supply to small businesses, especially to the risky ones and in areas without a local presence. Berrospide and Edge (2019) find that banks that were subjected to a large increase of CCAR-implied capital requirement substantially reduced corporate lending, while borrower firms' overall debt volumes, investment, and employment are largely unaffected by the capital buffers implied by stress tests. In contrast, Gropp, Mosk, Ongena, and Wix (2019) examine the impact of the 2011 capital exercise conducted by the European Banking Authority. They find that treated banks that were required to increase their capital ratios did so by reducing their risk weighted assets. The reduced lending from the treated banks results in lower asset, investment, and sales growth for firms obtaining a larger share of their bank credit from these banks.

We contribute to this literature by documenting novel evidence on the spillover of bank failing stress test from corporate borrowers' M&A perspective. M&A is one of the largest and riskiest types of corporate investment, with the investment quality being easily measureable. We show that borrowers conduct significantly fewer M&A deals after their relationship banks failed a stress test. We find that the impact is stronger for borrowers with weaker corporate governance

and more severe agency problems, suggesting that increased bank screening on borrower M&A projects is the driving force behind the discovered impact. Moreover, consistent with heightened bank screening, the usage of financial covenants in M&A-related bank loan contracts increases after the bank stress test failure. In line with treatment firms refraining from value-destroying M&A that can harm their shareholders, we also find these firms to subsequently improve their M&A deal quality and corporate profitability. Our findings hence highlight the *positive* spillover effects of bank stress tests from an M&A perspective.

Our study also contributes to the voluminous M&A literature. In particular, the literature suggests that M&A on average does not create shareholder value for acquirers (see, e.g., Andrade, Mitchell, and Stafford, 2001, and Betton, Eckbo, and Thorburn, 2008, for reviews). Indeed, they may even destroy a significant amount of shareholder value (e.g., Moeller, Schlingemann, and Stulz, 2005). The only paper examining M&A in the stress testing context is Bindal et al. (2020), who use the size threshold set through stress tests as a factor influencing M&A behaviors *among banks*. The authors document increased M&A activity by banks just below the threshold. Moreover, they find that acquirers that cross the threshold via an acquisition jump over the threshold more aggressively and continue to grow faster. Focusing on corporate borrowers, we provide new empirical evidence demonstrating the potentially causal impact of bank stress test failure on *borrower* M&A activity.

The rest of the article proceeds as follows: Section II describes the institutional background of the U.S. stress tests and the related data and measurement. Section III reports the empirical strategy and the findings on how bank stress test failure impacts borrower M&A activity. Section IV explores why bank failing stress test affects borrower firm M&A activity. Section V concludes. The Appendix provides a table that describes the variables used in the study and their data sources.

2. Institutional Background and Data

2.1. Stress Tests in the United States

Stress tests have become a keystone of post-crisis capital regulation in the United States. Different from traditional ways of bank supervision such as bank exams that are mostly backward looking, a stress test is a forward-looking supervisory tool that assesses whether a bank has a sufficient amount of capital today to cover losses from future potential economic downturns (Greenwood et al., 2017). The first stress test was launched by the Federal Reserve in the midst of the Great Recession in 2009—namely, the Supervisory Capital Assessment Program (SCAP). Its intended goal was to ensure that large U.S. banks had enough capital to withstand the large losses occurred during the crisis. The success of the SCAP in restoring market confidence in large banks paved the way for the subsequent regular stress tests for large bank holding companies (BHCs). Since the enactment of the Dodd-Frank Act in 2010, banks have steadily increased their core capital.[6] For instance, the 18 participating BHCs in the 2019 test round have substantially increased their common equity capital by more than $680 billion (with the risk-weighted ratio being more than doubled) since the first round of stress tests led by the Federal Reserve in 2009.[7]

Under the Dodd-Frank Act, the Federal Reserve is mandated to assess the adequacy of banks' capital against a series of macroeconomic scenarios featuring severe adverse economic shocks, such as a sudden collapse of equity market or a sharp rise in unemployment rate. In particular, the Dodd-Frank Act Stress Tests (DFAST) rely on proprietary models developed by the Federal Reserve. These tests project banks' capital ratios based on revenue and losses from banks'

[6] See https://www.federalreserve.gov/newsevents/speech/bernanke20100506a.htm.

[7] See https://www.federalreserve.gov/newsevents/pressreleases/bcreg20170628a.htm.

loans, securities, trading accounts, operations, and counterparty exposures over a nine-quarter projecting horizon, under a standardized set of assumptions about banks' capital distribution during the projected period.[8] Starting in 2011, the Federal Reserve began conducting the annual Comprehensive Capital Analysis and Review (CCAR) to determine the capital adequacy of large BHCs under its supervision. There are two major differences between CCAR and DFAST. First, although CCAR uses the same estimated losses and revenue numbers as in the DFAST exercise, it relies on banks' *actual* nine-quarter capital plan on capital issuance and distributions rather than the standardized assumption. Second, the *minimum ratios* on projected capital set by CCAR are *binding*, and BHCs that failed the test are not allowed to distribute dividends or purchase shares as stated in their capital plans.

CCAR evaluates BHCs' capital adequacy as well as the capital planning processes, and the Federal Reserve Board can object BHCs' capital plans on either quantitative or qualitative grounds. The quantitative exercise included in the CCAR is similar to DFAST and evaluates whether BHCs maintain sufficient capital to continue operations throughout times of economic and financial market stress. The qualitative assessment evaluates the capital planning process for the largest and most complex BHCs and looks into their risk management, internal controls, and governance practices. The Federal Reserve discloses the outcome of the stress tests annually in the CCAR report, and banks that failed the test by breaching the minimum capital threshold set in the quantitative exercise or by not passing the qualitative assessment are refrained from distributing dividends or net share repurchase as was planned in the following quarter. Banks that received a conditional non-objection on their capital plans need to address all weaknesses in the capital plan and resubmit a new capital plan within six months after the decision is issued. Given that banks

[8] In particular, DFAST assumes that banks pay out common stock dividends at the same level as in the prior year and that there are no net capital issuances.

are expected to make substantial changes facing either one of the three outcomes, we define a bank as a failure bank if it received either one of these three outcomes (i.e., not passing the quantitative assessment, not passing qualitative assessment, or receiving a conditional non-objection on its capital plan) from the Federal Reserve Board.

Banks are included in the annual CCAR stress testing exercise if their asset size meets a certain threshold. There were 19 large banks with asset sizes over $100 billion that participated in the SCAP stress test in 2009. The asset size threshold was revised to $50 billion after the enactment of the Dodd-Frank Act, and the total number of participants increased from 29 in 2011 to 33 in 2016. In this study, we include six rounds of stress test exercises covering the period from 2009 to 2016.[9] An overview of the outcomes of the stress tests across different rounds are shown in Table A3 in the Appendix.

2.2. Data

Our data comprise information on firms' characteristics and their M&A activity, bank-firm lending relationships, banks' characteristics, and their participation and outcomes in the Federal Reserve's annual stress testing programs (SCAP and later on CCARs). We consider firms that are included in the Center for Research in Security Prices (CRSP), Compustat, Securities Data Company (SDC) Platinum, and Thomson Reuters Loan Pricing Corporation (LPC) DealScan databases. Our sample includes quarterly data of stacked event subsamples of six rounds of stress tests that cover a period from 2008:Q3 to 2017:Q2. Specifically, for each stress test event, we examine three quarters before to three quarters after the test result release quarter (excluding the result release quarter) to form an event subsample. We then stack all stress test event subsamples

[9] The 2011 CCAR test result has not been disclosed by the Federal Reserve and thus is excluded from our analysis.

together for the DID analysis. The sample consists of 2,539 unique firms. We consider the characteristics of the firms, the stress tested banks, as well as the bank-firm relationship prior to each starting quarter of the annual stress testing cycle.

We collect data on firms' financial statement variables from Compustat, M&A activity from SDC Platinum,[10] and information reflecting corporate governance from various other data sources such as BoardEx and Thomson-Reuters 13F databases. We further merge in the data on stock returns extracted from CRSP. We exclude financial firms (SIC codes between 6000 and 6999). In particular, we include firms' total assets, market-to-book equity ratio, sales growth and leverage and further control for firms' stock performance in the past year.

Two groups of variables were constructed in order to investigate the different channels through which bank stress test outcomes may affect borrower firms' M&A activity—increasing bank screening on borrower M&A activity or decreasing bank financing for M&A. For the former, we consider various corporate governance measures such as board size, board independent director ratio, institutional ownership, and hostile takeover threat (Yermack, 1996; Byrd and Hickman, 1992; Hartzell and Starks, 2003; Duchin, Matsusaka, and Ozbas, 2010; Chung and Zhang, 2011; and Cain, McKeon, and Solomon, 2017). For the latter, we include firms' financial constraint indices, Altman's Z score, credit ratings, and other variables (e.g., dividend payment ratio) that indicate the level of financial constraint and the ease to access external financial resources (e.g., Kashyap, Lamont, and Stein, 1994; Fazzari, Hubbard, and Petersen, 1998; Whited and Wu, 2006; Hadlock and Pierce, 2010; and Chava and Purnanandam, 2011).

[10] We impose the following filters to obtain the data on M&A activity: i) the deal is classified as "Acquisition of Assets (AA)," "Merger (M)," or "Acquisition of Majority Interest (AM)" by the data provider; ii) the acquirer holds less than 50% of the shares of the target firm before deal announcement and ends up owning 100% of the shares of the target firm through the deal; iii) the deal value is at least $1 million; iv) the target firm is domiciled in the United States; v) and the target firm is a public firm, a private firm, or a subsidiary.

The strength of a bank-firm relationship is a key factor influencing the credit channel that transmits shocks from banks to their borrower firms. Having a stronger lending relationship with a bank not only allows borrowers to have better access to credit from that bank, but also makes them more sensitive to the idiosyncratic shocks to that bank at the same time (e.g. Berger and Udell, 1995; and Chava and Purnanandam, 2011). In this case, it is expected that the failure bank will need to change its lending and risk management behavior (e.g., Acharya, Berger, and Roman, 2018). For example, in order to reduce the default risk of its lending portfolio, the failure bank may increase its screening on borrower firm projects and restructure its lending portfolio toward less risky projects. Firms that borrow more from the failure bank are then disproportionally affected by the exogenous shock of bank stress test failure.

We employ the Thomson Reuters LPC DealScan database to establish bank-firm relationships. The database has been widely used to study the strength of bank-firm relationships.[11] It contains detailed information on bank loans, mostly syndicated loans, granted to large companies. It is ideal to use the DealScan data in this context of understanding how firms' M&A activities are affected by bank stress test failures. Given that many M&A deals are large in size, banks often fund these deals through issuing syndicated loans so that the credit risks could be diversified across various funding partners. Consistent with prior studies, we explore the "exclusivity" dimension of bank relationships and take the repeated lending of banks to firms in the past as an indication for a strong bank-firm relationship.[12] In particular, one quarter prior to the release date *t* of each round of stress tests, we review the history of all corporate loan

[11] For example, see Bharath et al. (2011), Chava and Purnanandam (2011) and Norden, Roosenboom and Wang (2013).

[12] This is in line with extant studies that demonstrate that repeated contracting between firms and banks correlates with a strong bank-borrower relationship (e.g., Schenone, 2004; Bharath et al., 2007; Bharath et al., 2011; and Norden, Roosenboom, and Wang, 2013).

originations to firm *i* in the past five years and calculate a bank-firm lending relationship variable *Lending relationship*$_{i,j,t}$ for every bank holding company *j* that originated at least one loan to firm *i*:

$$Lending\ relationship_{i,j,t} = \frac{\sum_{t,t-5yr} loan\ amount_{i,j}}{\sum_{t,t-5yr} loan\ amount_i}. \quad (1)$$

Following extant studies in this area, we consider a standard five-year look-back window to measure the bank-firm lending relationships (e.g., Bharath et al., 2007). For each firm *i* that has syndicated loans originated from *n* banks in the past five years, *Lending relationship*$_{i,j,t}$ covers each pair of relationship between firm *i* and bank *j* across these *n* banks, and the sum of the relationship measure across all the *n* banks for firm *i* will add up to one. Similar to the identification strategy employed in Duchin, Ozbas, and Sensoy (2010), we measure the bank-firm lending relationship using the period prior to the result release quarter of each stress test event subsample and then freeze the relationship in the release quarter and afterwards to avoid the endogeneity problem that banks may have started shifting lending portfolios, or borrower firms may establish new relationships with other (non-relationship) banks, after stress test results are released. We also focus on firms' lead arrangers, because in syndicated lending, these banks are considered to be the main relationship bank that collects information about the borrower. We aggregated the bank-firm relationship measure to the bank holding company level, because the stress tests are conducted at the BHC level.

We obtain the data on BHCs' participation and outcomes in SCAP and CCAR over the years from the website of the Board of Governors of the Federal Reserve System.[13] Besides information on the Federal Reserve's evaluation of banks' capital adequacy in the passing or

[13] For example, see https://www.federalreserve.gov/supervisionreg/dfa-stress-tests.htm and https://www.federalreserve.gov/newsevents/files/bcreg20090507a1.pdf.

failing of the test, the reports also include comprehensive information on the projected capital ratios under various scenarios for each participating bank. For each round of stress tests, we measure a firm's exposure to bank stress test failure by combining information on the Federal Reserve's announcement of failure banks and the firm's relationships (captured by *Lending relationship*$_{i,j,t}$) with these banks. In particular, we classify a firm into the treatment group if at least one of the firm's relationship banks failed the focal round of tests and classify a firm into the control group if none of firms' relationship banks have failed during the focal stress test. We use the hand-matched concordance files between the Federal Reserve's stress testing report releases and DealScan database to match banks' stress testing outcomes with banks' relationship with firms (*Lending relationship*$_{i,j,t}$) based on banks' names. We exclude a firm in the following round once it was classified as a treatment firm in one of the previous tests. Given that our paper investigates the effects of bank stress test failure on exposed firms' M&A activity, we compare the (treatment) firms that are exposed to banks that failed the stress test with the (control) firms that are exposed to banks that did not fail the stress test. We exclude firms that do not have any relationship at all with the BHCs that participated in the stress test.

Bank characteristics are weighted at the firm level, using the bank-firm relationships prior to each stress test. Specifically, we construct weighted bank characteristics for each firm *i* at time *t* by considering the relationship between firm *i* and its lending bank *j* as well as the characteristics of bank *j* (i.e., bank loan loss provisions, capital ratio, and bank size) at time *t*:

$$bank\ char_{i,t}^{weighted} = \sum_{j=1}^{n} lending\ relationship_{i,j,t} \times bank\ char_{j,t}. \quad (2)$$

We then merge bank-firm relationships identified from DealScan with bank characteristics from Form FR Y-9C,[14] using hand-matched bank name concordance files aggregated at the

[14] Federal Reserve Board, Form FR Y-9C, Consolidated Financial Statements for Holding Companies.

holding company level.[15] Last, we merge back the constructed treatment indicator and the weighted bank characteristics with firm-level data on financial variables, M&A activity, and stock returns using the DealScan-Compustat link constructed by Michael R. Roberts and Sudheer Chava.[16] Table 1 reports summary statistics for the main variables of our study. Table A1 in the Appendix shows variable definitions, data sources, and the period of measurement. Table A2 in the Appendix reports the variable correlation matrix. All dollar values are in 2016 constant dollars, and all continuous variables are winsorized at the 1st and 99th percentiles to limit the influence of outliers.

[Please insert Table 1 here]

3. The Impact of Bank Stress Test Failure on Firm M&A Activity

3.1. Difference-in-Differences Regressions

This section investigates how bank stress test failure impacts corporate borrowers' M&A activity. The empirical strategy we employ is similar to the stacked DID approach for multiple events used in Gormly and Matsa (2011). As mentioned earlier, we examine three quarters before to three quarters after the test result release quarter (excluding the result release quarter) to form an event subsample for each stress test event. We then stack all stress test event subsamples together and employ the DID regression framework to examine the impact of bank stress test failure on borrower M&A activity. In our setting, it is appropriate to employ the stacked DID analysis because the shocks to banks were largely exogenous and unexpected to any specific

[15] Two groups of research assistants separately hand-matched bank names across Form FR Y-9C and DealScan databases. The authors then carefully checked and compared the matching outcomes to ensure matching quality and consistency.

[16] See http://finance.wharton.upenn.edu/~mrrobert/. Please refer to Chava and Roberts (2008) for more details on this link.

borrowing firm. For instance, the models used in the CCAR quantitative assessment by the Federal Reserve are independently developed and highly confidential. Together with the opaqueness in the qualitative assessments, it becomes challenging even for the participant banks to predict the final results, not to mention the participation banks' corporate borrowers. The assignment of treatment and control groups is thus largely exogenous to banks' corporate borrowers.

As discussed earlier, we identify treatment firms using the bank-borrower relationships prior to the result release quarter of each stress test event subsample for the DID analysis. We exclude a firm in the following round once it was classified as a treatment firm in one of the previous tests. In reality, the potential relationship shift after the test result release is unlikely to affect our results significantly—if anything, it will bias against finding significant negative effect of bank stress test failure on borrowers' M&A activity. Moreover, the extant literature suggests that relationship-based lending has lower financing costs due to better information access and thus switching away from a relationship bank may imply significant switching costs (e.g., James, 1987; Vale, 1993; Petersen and Rajan, 1994; Boot, 2000; and Kim, Kliger, and Vale, 2003).[17] Given the large size of the M&A deals, when a firm switches to non-relationship banks to finance the same M&A deal after the deal fails relationship-bank screening, it can signal bad deal quality and lead to even higher financing costs.

We employ the following dynamic DID regression framework to identify the effect of a relationship bank failing a stress test on borrower M&A activity:

$$M\&A\ Activity_{i,t} = \alpha + \beta_1 Treated_i * Post_t + \beta_2 Controls_{i,t-1} + \omega_i + \mu_t + \varepsilon_{i,t}. \quad (3)$$

[17] For example, Kim, Kliger, and Vale (2003) suggest that the costs of switching away from relationship banks are on average one-third of the market interest rate on loans.

In Equation (3), the dependent variable *M&A Activity* is either the natural logarithm of one plus the total M&A deal value announced in quarter *t* (*Deal Value*) or the natural logarithm of one plus the total number of M&A deals announced in quarter *t* (*Deal Count*). *Treated* equals 1 if at least one of the firm's relationship banks failed the focal round of stress tests and equals 0 otherwise. *Post* equals 1 if quarter *t* is after the test result release quarter and equals 0 otherwise. Control variables include firm characteristics such as firm size, market-to-book equity ratio, sales growth, leverage and past stock returns, and weighted bank characteristics (according to Equation (2)) such as bank size, bank loan loss provision, bank tier-1 common equity ratio, and bank cash holdings, all measured before the test result release quarter of the focal test. Firm fixed effects are included to absorb the potential influence of any time-invariant firm heterogeneity. Year-quarter fixed effects are included to absorb the potential influence of any macro trends in M&A activity. Robust standard errors are clustered at the firm level. The results are reported in Table 2.

[Please insert Table 2 here]

It is clear that bank stress test failure has a significant dampening effect on borrower M&A activity, as the regression coefficient of the DID term, *Treat* * *Post*, is negative and statistically significant at least at the 5% level across all regressions, both with and without control variables. The magnitude of the reduction is also economically sizable. Compared with control firms, treated firms, on average, reduce their M&A deal value (M&A deal count) by $25.21 million (0.01 deal) per quarter, which is 73.02% (21.74%) of the average deal value (average deal count) per quarter in the sample.[18]

[Please insert Table 3 here]

[18] Note that the economic significance of the results is interpreted based on the coefficients from DID regressions using the unlogged dependent variables. Results from regressions using the unlogged dependent variables are quantitatively similar.

We also separately examine the impact of a bank failing SCAP and that of a bank failing subsequent CCARs on firms' M&A activity using the same DID regression framework. The results are reported in Table 3. From the table, it is clear that a bank failing the SCAP test in 2009 has little impact on borrower M&A activity. Our results reveal that the uncovered treatment effect of bank stress test failure on borrower M&A activity derives entirely from the subsequent CCAR tests. This finding that failing CCAR has a greater impact on borrower M&A activity is perhaps not too surprising. The CCAR tests were conducted when the economy was recovering from the 2007–2009 financial crisis and was expanding, with all banks increasing their credit supply. By contrast, the SCAP test was conducted during the crisis when most, if not all, banks already adopted prudent lending policies to reduce the default risk of their lending portfolios.

3.2. Dynamic DID Regressions

To examine whether the documented treatment effect of bank stress test failure on borrower M&A activity is driven by potential nonparallel M&A trends between the treated firms and control firms prior to the test result release, we include the test result release quarter into the sample and employ the following dynamic DID regression framework to identify the exact timing of the treatment effect:

$$M\&A\ Activity_{i,t} = \beta_0 + \beta_1 Treated_i * D_{-2,t} + \beta_2 Treated_i * D_{-1,t} + \beta_3 Treated_i * D_{0,t} + \beta_4 Treated_i * D_{1,t} + \beta_5 Treated_i * D_{2,t} + \beta_6 Treated_i * D_{3,t} + \beta_7 Controls_{i,t-1} + \omega_i + \mu_t + \varepsilon_{i,t}. \quad (4)$$

In Equation (4), $D_{j,t}$ is an indicator that equals 1 if quarter *t* is the *j*th quarter relative to the test result release quarter (with the reference quarter being the third quarter prior to the test result release quarter) of the focal stress test event; other notations follow previously given definitions. Such a dynamic DID model enables us to examine both the existence and timing of the treatment

effect. If the reduction in M&A activity is indeed caused by bank stress test failure, then we should expect zero difference-in-differences between the treatment firms and control firms prior to the test result release—that is, β_1 and β_2 should be insignificant. Moreover, we expect the event-quarter DID estimate, β_3, to be either 0 or negative (as it may take some time for the firm to respond by adjusting its M&A activity) and the post-event DID estimates, β_4 to β_6, to be negative. The results are reported in Table 4.

[Please insert Table 4 here]

We find no difference between the changes in M&A activity of the treatment firms and the changes in M&A activity of control firms before the test results release. The treatment effect is observed only at and after the test release quarter across all specifications and is statistically significant mostly at the 5% level. This finding suggests the treatment effect on borrower M&A activity only exists from the test result release quarter onward but does not exist in the quarters prior to the test result release.

[Please insert Figure 1 here]

Figure 1 further compares the M&A deal value and deal count by firms whose relationship banks failed stress tests with those of firms whose relationship banks did not fail stress tests around the stress test announcement quarter. The effect of firms' relationship banks failing stress tests on an M&A deal value is shown in Graph A, and the effect on M&A deal count is shown in Graph B. The treatment group (blue solid line) includes firms whose relationship banks failed stress tests while the control group (red dotted line) includes firms whose relationship banks did not fail the test around the announcement quarters. We derive the effect of bank stress test failure on M&A activity from the regression coefficients of the quarter indicators in the following regression equations, running on the control and treated firms separately:

$$M\&A\ Activity_{i,t} = \beta_0 + \beta_1 D_{-2,t} + \beta_2 D_{-1,t} + \beta_3 D_{0,t} + \beta_4 D_{1,t} + \beta_5 D_{2,t} + \beta_6 D_{3,t} + \beta_7 Controls_{i,t-1} + \omega_i + \mu_t + \varepsilon_{i,t}. \quad (5)$$

The figure also shows that the trends of M&A deal value and deal count for the treatment and control groups are parallel before the onset of the treatment and the divergence only occurs after the treatment quarter. Thus, the parallel-trends assumption for the efficacy of the DID approach is satisfied and the documented effect of bank stress test failure on borrower M&A activity is most likely causal.

To summarize, results from the DID estimation and graphic analysis in this section suggest that bank stress test failure has a significant and likely causal dampening effect on borrower firm M&A activity.

4. Why Does Bank Stress Test Failure Affect Borrower Firm M&A Activity?

4.1. Evidence from Cross-sectional Analyses

We next investigate why bank stress test failure leads to a reduction in borrower firm M&A activity. It is known that banks actively screen borrower loan applications to mitigate adverse selection and manage their lending portfolio default risk (e.g., Stiglitz and Weiss, 1981; Bester, 1985; and Marquez, 2002). Failing a stress test constitutes a significant shock to a bank, as the failure bank needs to change its distribution plan and likely to review its lending and risk management behavior to avoid subsequent failures and associated reputation damage. Thus, we conjecture that the failure bank will increase its screening strength on borrower firms' risky investment projects, such as M&A, to reduce its loan default risk. Such increased screening from the relationship bank will then result in its borrower firms conducting fewer (value-destroying) M&A deals.

If this conjecture is true, we expect that the treatment effect should be particularly strong for firms that have relatively weak corporate governance prior to the bank stress test failure shock, because such weak corporate-governance firms tend to conduct shareholder-value-destroying M&A deals (e.g., Grinstein and Hiribar, 2004; Harford and Li, 2007; and Masulis, Wang, and Xie, 2007). Enhanced bank screening should help restrain these firms from wasteful M&A activity. Following the literature (e.g., Yermack, 1996; Byrd and Hickman, 1992; Hartzell and Starks, 2003; and Cain, McKeon, and Solomon, 2017), we use four proxies—board size, independent director ratio, institutional ownership, and hostile takeover threat—to capture a firm's strength in corporate governance. We partition our full sample into subsamples based on the sample median of each of these corporate governance measures before a stress test result release quarter and rerun the DID regressions. The results are reported in Panel A of Table 5.

[Please insert Table 5 here]

Consistent with increased bank screening on borrower M&A projects, Panel A shows that the treatment effect of bank stress test failure on borrower M&A activity only exists for firms with a larger board size, lower independent director ratio, or lower institutional ownership and firms facing lower hostile takeover threat. The literature suggests that such firms generally have weak corporate governance strength. Across the four corporate governance proxies, the regression coefficient of the DID term is statistically insignificant for the subsamples of firms with stronger corporate governance strength.

As the literature suggests that larger firms, older firms, and firms with higher free cash flows are more susceptible to managerial agency problems such as empire building (e.g., Jensen and Meckling, 1976; Jensen 1986; and Stulz, 1990), we further partition the sample according to these borrower firm characteristics. Again, we find the treatment effect of bank stress test failure to only

exist among the subsamples of larger firms, older firms, or firms with higher free cash flows (Panel A). These results further support the explanation that enhanced bank screening helps rein in borrower M&A activity.

An alternative explanation is that bank stress test failure reduces borrower M&A activity not through enhancing bank screening but simply through reducing bank credit supply to all borrowers. If that is the case, the treatment effect should be stronger for those borrower firms facing tighter financial constraints, as such borrowers likely rely more on syndicated loans to finance their M&A transactions. We thus partition our full sample of borrower firms based on several proxies of financial constraints measured before a stress test result release: 1) the Whited and Wu (2006) financial constraint index, 2) the Hadlock and Pierce (2010) financial constraint index, 3) the dividend payment ratio in the past fiscal year, 4) Altman's Z score, 5) whether the firm has a credit rating, and 6) whether the firm has an investment-grade credit rating. The results are reported in Panel B of Table 6.

Contrary to the alternative explanation, Panel B shows that the treatment effect of bank stress test failure on borrower M&A activity is particularly strong for borrower firms with a low Whited and Wu (2006) financial constraint index or a low Hadlock and Pierce (2010) financial constraint index, firms that paid a higher amount of cash dividends, firms with a credit rating—especially investment-grade credit rating—and firms with a high Altman's Z score. These borrower firms tend to have more relaxed financial constraints. By contrast, the treatment effect is generally insignificant for the subsamples of firms with tight financial constraints across the different financial-constraint proxies. Combined with the fact that firms with more relaxed financial constraints are more likely to conduct value-destroying M&A deals (e.g., Harford, 1999; Moeller, Schlingemann, and Stulz, 2004), these findings clearly suggest that bank stress test failure reduces

borrower M&A not through decreasing bank credit supply for all borrowers, but through increasing bank screening to rein in value-destroying M&A deals and reduce loan default risk. Even for borrower firms that may have access to other sources of financing than bank loans, if an M&A deal (e.g., one that is motivated by empire building rather than shareholder value creation) fails the relationship-bank screening due to low deal quality, using other types of financing such as bond or stock issuances as a substitute can result in much higher financing costs, which in turn can lead to lower occurrence of such deals.

4.2. Evidence from Loan Covenant Usage

As discussed earlier in the introduction, greater covenant usage in M&A-related bank loan contracts can serve as an ex-ante screening device to discourage value-destroying M&A activity of borrower firms. If banks that failed stress tests tend to increase their screening on borrower firms' M&A projects, after the failure shocks, we expect to observe an increase in financial covenant usage in bank loan contracts that are used to finance new M&A deals.

We investigate the impact of bank stress test failure on financial covenant usage in loan contracts used to fund borrower M&A activity from three quarters before to three quarters after the release of stress tests results, using the following stacked DID regression framework:

$$Number\ of\ Financial\ Covenants_{i,t} = \alpha + \beta_1 Treated_i * Post_t + \beta_2 Controls_{i,t-1} + \omega_i + \mu_t + \varepsilon_{i,t}. \quad (6)$$

The analyses are based on loan origination data covering the period from March 2008 to September 2017. We define a loan as M&A related if the primary or secondary purpose of the loan is "Acquis. Line", "Merger", or "Takeover" or if the purpose of a loan is "Corp. Purposes" and the loan's facility start date coincides with the window of one month before an M&A deal

announcement until the M&A deal completion date.[19] The dependent variable in Equation (6), *Number of Financial Covenants*, is the natural logarithm of one plus the total number of financial covenants on a loan. *Treated* equals 1 if the lead arranger of the syndicated loan failed the focal round of stress test and equals 0 otherwise. *Post* equals 1 if quarter *t* is after the test result release quarter and equals 0 otherwise. We further control for time-varying borrower-firm and lead-arranger-bank characteristics as well as borrower-firm fixed effects and year-quarter fixed effects. Because our earlier evidence shows that banks failing the SCAP test has little impact on borrower M&A activity and that the documented treatment effect of bank stress test failure on borrower M&A activity derives entirely from the subsequent CCAR tests, we separately study the impact of banks failing SCAP and the subsequent CCAR stress tests on covenant usage in M&A-related loan contracts. The results are reported in Table 6.

[Please insert Table 6 here]

Consistent with the earlier findings, the results of Table 6 reveal that banks failing SCAP do not affect the financial covenant usage in M&A-related bank loan contracts, while the regression coefficient of the DID term, *Treated* × *Post*, is positive and statistically significant across different models when banks failed the subsequent CCAR tests. The finding suggests that banks failing the CCAR tests on average results in a significant increase in the number of financial covenants per loan by 0.123 in M&A-related bank loan contracts, which is 14% of the average number of financial covenants per loan in the sample.[20] This finding that banks failing CCAR tests increases the usage of financial covenants in M&A-related bank loan contracts lends further support to the

[19] Note that a loan with its primary or secondary purpose labeled as "Corp. Purposes" can also be used to finance borrower M&A activity.

[20] The economic significance of the results is interpreted based on the coefficients from DID regressions using the unlogged dependent variable. Regression results using the unlogged dependent variable are quantitatively similar.

conjecture that failure banks increase their screening strength on borrower firms' risky M&A activity to reduce loan default risk.

4.3. Evidence from M&A Deal Quality and Firm Profitability

If bank stress test failure leads to less borrower M&A activity through the failure bank increasing its screening strength on wasteful borrower M&A projects, such enhanced bank screening should help improve, or at least not deteriorate, borrower M&A deal quality. Thus, we further examine the treatment effect of banks failing stress tests on borrowers' M&A deal quality, using acquiring firms' three-day cumulative abnormal stock returns (CARs) around deal announcements as a proxy for deal quality.[21] The DID regression results are reported in Table 7.

[Please insert Table 7 here]

Columns (1) to (3) of Table 7 show that the DID term, *Treat* * *Post*, is positive and relatively large (around 1.1–1.2 percentage points for three-day CARs), albeit statistically insignificant (with *t*-values above 1.0). This finding is consistent with borrower firms trying to improve, or at least trying not to deteriorate, deal quality after their relationship banks fail a stress test and increase bank screening on borrower M&A projects.

We conjecture that the impact of bank stress test failure on M&A deal quality should be stronger if the acquirer needs to finance its M&A activity via raising new bank loans (and thus needs to be screened by the bank). Thus, we construct an indicator variable, *Bank Screening*, which equals to one if at least one M&A-related syndicated loan is issued to the acquiring firm by a bank during the three-quarter period around the M&A deal announcement date and equals zero otherwise. We then use the *Bank Screening* indicator to interact with *Treated* × *Post* in the DID

[21] When the acquirer conducted more than one M&A deal in a quarter, we calculate the deal-value weighted average three-day CARs across all M&A deals that an acquirer conducted within the quarter.

analysis. Consistent with our expectation, Columns (4) to (6) of Table 7 show that the coefficient of *Treated* × *Post* × *Bank Screening* is significantly positive across all three models, indicating that the treatment effect of bank stress test failure on borrower M&A quality is more positive (around 4 to 5 percentage points) when the borrower needs to finance M&A activity via raising new bank loans (and thus receiving bank screening on its deal quality).

Finally, if borrowers reduce value-destroying M&A activity after their relationship banks fail a stress test and increase bank screening, their firm profitability may improve subsequently. Thus, we examine the treatment effect of bank stress test failure on borrowers' return on assets (*ROA*) and return on equity (*ROE*). The results are reported in Table 8.

[Please insert Table 8 here]

Consistent with our expectation, we document a significantly positive treatment effect of bank stress test failure on borrower firms' profitability in subsequent quarters. Compared with control firms, treated firms, on average, increase their *ROA* (*ROE*) by 0.1 percentage point (0.5 percentage point) per quarter, which is large compared with the sample mean *ROA* (sample mean *ROE*) of 0.5 percentage point (0.7 percentage point). This result is consistent with treatment firms refraining from wasteful M&A activity that can reduce firm profitability and harm their shareholders.

5. Conclusion

Major U.S. banks are required to participate in stress tests conducted by the Federal Reserve after the 2007–2009 Global Financial Crisis to ensure they have enough capital to survive future crises and keep on lending under adverse conditions. Some banks failed these stress tests and were required to raise new capital, change their distribution plans, or both. In this paper, we study the

mergers and acquisitions (M&A) activity of the borrower firms of banks that failed U.S. stress tests.

We document that borrower firms conduct significantly fewer M&A deals after their relationship banks failed a stress test. The dampening effect of relationship bank failing a stress test on borrower firm M&A activity is found to be stronger for treatment firms with weaker corporate governance or treatment firms more susceptible to managerial agency problems such as empire building, suggesting that heightened bank screening (after stress test failure) on wasteful borrower M&A projects is the driving force behind the discovered treatment effect. Moreover, we find that banks failing stress tests increase the usage of financial covenants in M&A-related bank loan contracts, further indicating that failure banks increase their screening strength on borrower firms' risky M&A activity to reduce loan default risk. Consistent with enhanced bank screening, we also find a positive treatment effect of bank stress test failure on borrowers' M&A deal quality, particularly when borrower firms need to finance their M&A activity via raising new bank loans (and thus receiving additional bank screening). Finally, in line with treatment firms refraining from M&A activity that can hurt their shareholders, we find these firms to subsequently improve their profitability.

We contribute to the growing literature on bank stress tests by demonstrating the positive real consequence of bank stress test failure from an M&A perspective. Our study also contributes the voluminous M&A literature by documenting novel empirical evidence on how corporate borrowers' M&A activities are affected by bank stress test failures through enhanced bank screening. Our evidence on corporate borrowers' M&A suggests beneficial spillover effects of bank stress tests. The findings may be of interest to practitioners, regulators, and academics.

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Table 1. Descriptive Statistics

This table reports descriptive statistics of our sample. The sample covers the period from June 2007 to December 2009. A detailed description of the variables is presented in Table A1 in the Appendix. The continuous variables are winsorized at the 1st and 99th percentiles. We report the means, medians, standard deviations, 25th percentiles, 75th percentiles, and the number of observations.

Variable	Mean	Median	Std. Dev.	P25	P75	N
Deal Value (in million$)	34.526	0.000	845.1	0	0	45057
Deal Count	0.046	0.000	0.228	0	0	45057
CAR (-1,1)	1.837	0.718	13.945	-1.434	3.864	1847
MAR (-1,1)	1.958	0.878	13.914	-1.294	4.012	1867
Number of Financial Covenants	0.878	1	0.939	0	2	32636
Firm Characteristics						
Firm Size (in billion$)	10.034	1.424	67.624	0.494	4.327	44959
Market-To-Book	3.208	1.843	5.371	1.159	3.137	44286
Sales_Growth	1.024	1.013	0.189	0.949	1.082	45006
Leverage	0.276	0.221	0.238	0.081	0.420	44959
Past_Stock_Return	3.438	2.422	30.432	-10.280	14.754	44946
ROA	0.005	0.009	0.036	0.000	0.019	45037
ROE	0.007	0.023	0.134	0.002	0.044	43140
Bank Characteristics						
Bank Size (in trillion $)	1.369	1.422	0.698	0.853	2.053	45057
Bank Loan Loss Provision	2.306	1.450	2.450	0.722	2.722	45057
Bank Tier-1 Common Equity Ratio	0.080	0.085	0.025	0.065	0.099	45057
Bank Cash Holding	0.015	0.015	0.005	0.012	0.017	45057

Table 2. The Impact of Bank Stress Test Failure on Firms' M&A Activity

The table reports the results of OLS regressions that investigate the impact of banks failing stress tests on firms' M&A activity three quarters before and after the release of stress tests results. The analyses are based on quarterly data covering the period from March 2008 to September 2017. A detailed description of the variables is presented in Table A1 in the Appendix. The dependent variable Deal Value captures the total value of the deal; the dependent variable Deal Count captures the total number of deals completed within a quarter. Robust standard errors are clustered at the firm level and are shown in parentheses. ***, **, and * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Dep. Var.:	Deal Value			Deal count		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated × Post	-0.058**	-0.060**	-0.059**	-0.007**	-0.007**	-0.007**
	(0.025)	(0.026)	(0.026)	(0.003)	(0.003)	(0.003)
Treated	0.028	0.028	0.021	0.003	0.003	0.002
	(0.018)	(0.018)	(0.019)	(0.003)	(0.003)	(0.003)
Post	0.002	0.003	0.000	0.000	0.000	-0.000
	(0.009)	(0.009)	(0.010)	(0.001)	(0.001)	(0.001)
Firm Controls						
Firm Size$_{t-1}$		-0.029	-0.030		-0.003	-0.004
		(0.024)	(0.024)		(0.004)	(0.004)
Market-To-Book $_{t-1}$		0.004**	0.004**		0.001**	0.001**
		(0.002)	(0.002)		(0.000)	(0.000)
Sales_Growth $_{t-1}$		-0.014	-0.014		-0.003	-0.003
		(0.033)	(0.033)		(0.005)	(0.005)
Leverage $_{t-1}$		-0.725***	-0.731***		-0.109***	-0.111***
		(0.090)	(0.090)		(0.014)	(0.014)
Past_Stock_Return $_{t-1}$		-0.000	-0.000		-0.000	-0.000
		(0.000)	(0.000)		(0.000)	(0.000)
Bank Controls						
Bank Size $_{t-1}$			-0.001			-0.000
			(0.005)			(0.001)
Bank Loan Loss Provision $_{t-1}$			-0.008*			-0.001*
			(0.004)			(0.001)
Bank Tier-1 Common Equity Ratio $_{t-1}$			-0.453			-0.082
			(0.885)			(0.125)
Bank Cash Holding $_{t-1}$			4.259			0.827**
			(2.778)			(0.417)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	38,547	37,836	37,836	38,547	37,836	37,836
Adjusted R^2	0.076	0.081	0.081	0.096	0.101	0.101

Table 3. Different types of Stress Tests Failures and Firms' M&A activity

The table compares the results of OLS regressions that investigate the impact of banks failing SCAP and other following rounds of CCAR stress tests on firms' M&A activity before and after the release of stress tests results. The analyses are based on quarterly data covering the period from March 2008 to September 2017. The dependent variable Deal Value captures the total value of the deal; the dependent variable Deal Count captures the total number of deals completed within a quarter. We control for lagged firm characteristics, relationship-weighted bank characteristics, firm fixed effects, and year and quarter fixed effects in all regressions. A detailed description of the variables is presented in Table A1 in the Appendix. Robust standard errors are clustered at the firm level and are shown in parentheses. ***, **, and * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Dep. Var.:	Deal Value		Deal count	
	(1)	(2)	(3)	(4)
SCAP Failure × Post	-0.003		0.001	
	(0.038)		(0.006)	
CCAR Failure × Post		-0.069**		-0.008**
		(0.031)		(0.004)
CCAR Failure		-0.008		-0.003
		(0.026)		(0.004)
Post		0.002		-0.000
		(0.012)		(0.002)
Firm Controls				
Firm Size$_{t-1}$	-0.090**	-0.101**	-0.015***	-0.011
	(0.036)	(0.040)	(0.006)	(0.007)
Market-To-Book $_{t-1}$	0.005	0.004	0.001	0.000
	(0.003)	(0.002)	(0.001)	(0.000)
Sales_Growth $_{t-1}$	-0.064	-0.009	-0.010*	-0.002
	(0.046)	(0.046)	(0.006)	(0.007)
Leverage $_{t-1}$	-0.765***	-1.291***	-0.120***	-0.186***
	(0.174)	(0.154)	(0.026)	(0.025)
Past_Stock_Return $_{t-1}$	0.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Bank Controls				
Bank Size $_{t-1}$		-0.011		-0.002
		(0.008)		(0.001)
Bank Loan Loss Provision $_{t-1}$		-0.009*		-0.002**
		(0.006)		(0.001)
Bank Tier-1 Common Equity Ratio $_{t-1}$		1.410		0.244
		(1.575)		(0.225)
Bank Cash Holding $_{t-1}$		-0.238		0.231
		(4.314)		(0.675)
Year-quarter fixed effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes
Number of Observations	10,453	27,351	10,453	27,351
Adjusted R^2	0.052	0.101	0.055	0.125

Table 4. The Dynamic Treatment of Bank Stress Tests Failures on Firms' M&A Activity

The table compares the results of OLS regressions that investigate the impact of bank failing stress tests on firms' M&A activity across different quarters before and after the release of stress tests results. The analyses are based on quarterly data covering the period from March 2008 to September 2017. The dependent variable Deal Value captures the total value of the deal; the dependent variable Deal Count captures the total number of deals completed within a quarter. The main independent variables are the interaction terms, Treated × various quarter indicators in the post-result-release period. We control for lagged firm characteristics, relationship-weighted bank characteristics, firm fixed effects, and year and quarter fixed effects in all regressions. A detailed description of the variables is presented in Table A1 in the Appendix. Robust standard errors are clustered at the firm level and are shown in parentheses. ***, **, and * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Dep. Var.:	Deal Value	Deal Count
	(1)	(2)
Treated × D-2	-0.034	-0.007
	(0.042)	(0.006)
Treated × D-1	-0.058	-0.007
	(0.044)	(0.006)
Treated × D0	-0.093**	-0.012**
	(0.043)	(0.006)
Treated × D1	-0.109**	-0.014**
	(0.044)	(0.006)
Treated × D2	-0.072*	-0.006
	(0.042)	(0.006)
Treated × D3	-0.086*	-0.013**
	(0.045)	(0.006)
Firm Controls		
Firm Size$_{t-1}$	-0.029	-0.002
	(0.023)	(0.004)
Market-To-Book $_{t-1}$	0.003**	0.000*
	(0.002)	(0.000)
Sales_Growth $_{t-1}$	-0.021	-0.004
	(0.027)	(0.004)
Leverage $_{t-1}$	-0.717***	-0.104***
	(0.084)	(0.013)
Past_Stock_Return $_{t-1}$	-0.000	-0.000
	(0.000)	(0.000)
Bank Controls		
Bank Size $_{t-1}$	-0.001	-0.000
	(0.005)	(0.001)
Bank Loan Loss Provision $_{t-1}$	-0.006	-0.001*
	(0.004)	(0.001)
Bank Tier-1 Common Equity Ratio $_{t-1}$	-0.558	-0.090
	(0.806)	(0.114)
Bank Cash Holding $_{t-1}$	2.357	0.565
	(2.582)	(0.383)
Year-quarter Fixed Effects	Yes	Yes
Firm Fixed Effects	Yes	Yes
Treated Dummy	Yes	Yes
Dummies of D-2 to D3	Yes	Yes
Intercept	Yes	Yes
Number of Observations	44,187	44,187
Adjusted R^2	0.076	0.099

Table 5. Firm Characteristics and the Impact of Bank Stress Test Failure on Firms' M&A Activity

The table compares the results of OLS regressions that investigate the impact of bank stress test failure on firms' M&A activity across different quarters before and after the release of stress tests results. We group the observations into one of two groups according to one of the firm characteristics that reflects the level of corporate governance (Panel A) and financial constrains measured (Panel B) prior to the release of the stress tests results. The analyses are based on quarterly data covering the period from March 2008 to September 2017. The dependent variable Deal Value captures the total value of the deal; the dependent variable Deal Count captures the total number of deals completed within a quarter. The main independent variables are the interaction term, Treated × Post. We control for lagged firm characteristics, relationship-weighted bank characteristics, firm fixed effects, and year and quarter fixed effects in all regressions. A detailed description of the variables is presented in Table A1 in the Appendix. Robust standard errors are clustered at the firm level and are shown in parentheses. ***, **, and * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A. Split based on corporate governance and susceptibility of managerial agency problems

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Split by	Board Size				Independent Director Ratio				Institution Ownership			
	Deal Value		Deal Count		Deal Value		Deal Count		Deal Value		Deal Count	
	Large	Small	Large	Small	Low	High	Low	High	Low	High	Low	High
Treated × Post	-0.211***	0.056	-0.024***	0.005	-0.119*	-0.093	-0.015*	-0.008	-0.126***	0.010	-0.015***	0.002
	(0.069)	(0.066)	(0.008)	(0.009)	(0.064)	(0.070)	(0.008)	(0.009)	(0.040)	(0.032)	(0.005)	(0.005)
Statistical Differences	(1) vs. (2) ***		(3) vs. (4) **		(5) vs. (6)		(7) vs. (8)		(9) vs. (10) **		(11) vs. (12) **	
Firm and Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Treated Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Post Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	6,754	5,054	6,754	5,054	6,034	5,773	6,034	5,773	18,699	18,557	18,699	18,557
Adjusted R^2	0.076	0.069	0.088	0.080	0.076	0.064	0.080	0.082	0.083	0.080	0.096	0.109

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Split by	Hostile Takeover Index				Firm Size				Age			
	Deal Value		Deal Count		Deal Value		Deal Count		Deal Value		Deal Count	
	Low	High	Low	High	Large	Small	Large	Small	Older	Younger	Older	Younger
Treated × Post	-0.078**	-0.008	-0.007	-0.001	-0.106**	-0.019	-0.012**	-0.003	-0.068*	-0.046	-0.008*	-0.006
	(0.039)	(0.043)	(0.006)	(0.005)	(0.041)	(0.028)	(0.005)	(0.005)	(0.036)	(0.036)	(0.005)	(0.005)
Statistical Differences	(1) vs. (2) *		(3) vs. (4)		(5) vs. (6) ***		(7) vs. (8) **		(9) vs. (10)		(11) vs. (12)	
Firm and Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Treated Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Post Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	15,416	15,471	15,416	15,471	18,963	18,729	18,963	18,729	20,017	17,579	20,017	17,579
Adjusted R^2	0.093	0.067	0.118	0.081	0.078	0.091	0.101	0.114	0.076	0.086	0.094	0.111

	(1)	(2)	(3)	(4)
Split by	Free Cash Flow			
	Deal Value		Deal Count	
	High	Low	High	Low
Treated × Post	-0.088**	-0.038	-0.011**	-0.003
	(0.039)	(0.032)	(0.005)	(0.004)
Statistical Differences	(1) vs. (2)		(3) vs. (4)	
Firm and Bank Controls	Yes	Yes	Yes	Yes
Treated Dummy	Yes	Yes	Yes	Yes
Post Dummies	Yes	Yes	Yes	Yes
Time Fixed	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes
Number of Observations	18,529	18,544	18,529	18,544
Adjusted R^2	0.083	0.071	0.107	0.090

Table 5. Firm Characteristics and the Impact of Bank Stress Test Failure on firms' M&A activity (continued)

Panel B. Split based on financial constraints

Split by	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	WW				HP				Dividend			
	Deal Value		Deal Count		Deal Value		Deal Count		Deal Value		Deal Count	
	High	Low	High	Low	High	Low	High	Low	Low	High	Low	High
Treated × Post	-0.011	-0.105***	-0.002	-0.011**	-0.021	-0.088**	-0.002	-0.010**	-0.053	-0.067*	-0.007	-0.007
	(0.032)	(0.039)	(0.005)	(0.005)	(0.034)	(0.038)	(0.005)	(0.005)	(0.035)	(0.038)	(0.005)	(0.005)
Statistical Differences	(1) vs. (2) **		(3) vs. (4) **		(5) vs. (6)		(7) vs. (8)		(9) vs. (10)		(11) vs. (12)	
Firm and Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Treated Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Post Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	18,371	18,407	18,371	18,407	18,708	18,955	18,708	18,955	20,251	16,945	20,251	16,945
Adjusted R^2	0.091	0.082	0.102	0.089	0.087	0.082	0.112	0.098	0.081	0.086	0.105	0.105

Split by	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Altman's Z (1968) Score				Credit Constraint – Non-rated				Credit Constraint – Junk-rated			
	Deal Value		Deal Count		Deal Value		Deal Count		Deal Value		Deal Count	
	Low	High	Low	High	Yes	No	Yes	No	Yes	No	Yes	No
Treated × Post	-0.034	-0.088**	-0.003	-0.010*	-0.032	-0.129**	-0.005	-0.014**	-0.039	-0.270**	-0.004	-0.038***
	(0.039)	(0.039)	(0.005)	(0.005)	(0.028)	(0.057)	(0.004)	(0.007)	(0.025)	(0.114)	(0.004)	(0.013)
Statistical Differences	(1) vs. (2)		(3) vs. (4)		(5) vs. (6)		(7) vs. (8)		(9) vs. (10)		(11) vs. (12) *	
Firm and Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Treated Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Post Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	16,754	17,130	16,754	17,130	28,118	9,434	28,118	9,434	34,785	2,768	34,785	2,768
Adjusted R^2	0.088	0.078	0.105	0.099	0.079	0.087	0.099	0.108	0.080	0.095	0.101	0.099

Table 6. The Impact of Banks Failing Stress Tests on the Number of Covenant of M&A-Related Loans

The table reports the results of OLS regressions that investigate the impact of bank stress test failure on financial covenants of M&A-related loans three quarters before and after the release of stress tests results. The analyses are based on loan origination data covering the period from March 2008 to September 2017. We define a loan as M&A related if the primary or secondary purpose of the loan is "Acquis. Line", "Merger", or "Takeover" or if the purpose of a loan is "Corp. Purposes" and the loan's facility start date coincides with the window of one month before an M&A deal announcement until the M&A deal completion date. A detailed description of the variables is presented in Table A1 in the Appendix. The dependent variable, Number of Financial Covenants, is natural logarithm of one plus the total number of financial covenants on a loan. Both the impact of bank failing SCAP and other following rounds of CCAR stress tests are reported. Robust standard errors are clustered at the firm level and are shown in parentheses. ***, **, and * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Dep. Var.:	Number of Financial Covenants					
	SCAP failures			CCAR failures		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated × Post	0.047	0.116	-0.288	0.060*	0.061**	0.060**
	(0.310)	(0.223)	(0.205)	(0.032)	(0.029)	(0.027)
Treated				-0.015	-0.019	-0.021
				(0.028)	(0.027)	(0.021)
Post				-0.010	-0.009	-0.009
				(0.008)	(0.007)	(0.007)
Firm Controls						
Firm Size$_{t-1}$		-0.071***	-0.076***		-0.032***	-0.032***
		(0.021)	(0.021)		(0.010)	(0.010)
Market-To-Book $_{t-1}$		0.033***	0.031***		0.001***	0.001***
		(0.008)	(0.008)		(0.000)	(0.000)
Sales_Growth $_{t-1}$		-0.025	-0.164		0.042	0.037
		(0.244)	(0.319)		(0.046)	(0.046)
Leverage $_{t-1}$		-0.076	-0.050		-0.218***	-0.216***
		(0.178)	(0.117)		(0.041)	(0.040)
Past_Stock_Return $_{t-1}$		-0.007***	-0.007***		0.002***	0.002***
		(0.001)	(0.001)		(0.001)	(0.001)
Bank Controls						
Bank Size $_{t-1}$			-0.694**			0.099
			(0.225)			(0.225)
Bank Loan Loss Provision $_{t-1}$			-0.135***			-0.002
			(0.033)			(0.005)
Bank Tier-1 Common Equity Ratio $_{t-1}$			7.382			-3.523
			(15.080)			(3.932)
Bank Cash Holding $_{t-1}$			58.413**			-0.713
			(24.928)			(1.917)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	266	258	249	5,637	5,595	5,553
Adjusted R^2	0.035	0.201	0.245	0.080	0.096	0.096

Table 7. The Impact of Bank Stress Test Failure on Acquiring Firms' Abnormal Stock Returns Around M&A Announcements

The table reports the results of OLS regressions that investigate the impact of bank stress test failure on acquiring firms' three-day cumulative abnormal stock returns during an event window surrounding the mergers and acquisitions announcements three quarters before and after the release of stress tests results. The analyses are based on event-level data covering the period from March 2008 to September 2017. A detailed description of the variables is presented in Table A1 in the Appendix. The dependent variable CAR (-1,1) is estimated using the market-adjusted model. Bank Screening is an indicator variable that equals to one if at least one M&A-related syndicated loan is issued to the acquiring firm by a bank during the three quarter period around the M&A deal announcement date. We define a loan as M&A related if the primary or secondary purpose of the loan is "Acquis. Line", "Merger", or "Takeover" or if the purpose of a loan is "Corp. Purposes" and the loan's facility start date coincides with the window of one month before a M&A deal announcement until the M&A deal completion date. Robust standard errors are clustered at the firm level and are shown in parentheses. ***, **, and * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Dep. Var.:	CAR(-1,1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Treated × Post × Bank Screening				4.707**	4.875**	5.172**
				(2.107)	(2.145)	(2.166)
Treated × Bank Screening				-1.362	-1.460	-1.484
				(1.241)	(1.263)	(1.261)
Post × Bank Screening				-0.636	-0.769	-0.758
				(0.910)	(0.889)	(0.901)
Bank Screening				0.392	0.703	0.650
				(1.206)	(1.191)	(1.191)
Treated × Post	1.129	1.193	1.139	-0.155	-0.122	-0.252
	(1.327)	(1.312)	(1.318)	(1.256)	(1.253)	(1.257)
Treated	0.245	0.245	0.232	0.682	0.713	0.704
	(0.545)	(0.521)	(0.568)	(0.544)	(0.532)	(0.587)
Post	0.040	0.018	-0.186	0.216	0.237	-0.009
	(0.271)	(0.254)	(0.264)	(0.280)	(0.269)	(0.283)
Firm Controls						
Firm Size$_{t-1}$		0.270	0.359		0.160	0.246
		(1.277)	(1.251)		(1.288)	(1.260)
Market-To-Book $_{t-1}$		-0.167	-0.153		-0.186	-0.173
		(0.121)	(0.118)		(0.130)	(0.128)
Sales_Growth $_{t-1}$		-2.663	-2.649		-2.639	-2.641
		(1.940)	(1.946)		(1.881)	(1.889)
Leverage $_{t-1}$		5.452	5.224		5.160	4.746
		(4.895)	(4.780)		(4.944)	(4.833)
Past_Stock_Return $_{t-1}$		0.022	0.020		0.024	0.022
		(0.023)	(0.022)		(0.022)	(0.022)
Bank Controls						
Bank Size $_{t-1}$			-0.247			-0.235
			(0.177)			(0.178)
Bank Loan Loss Provision $_{t-1}$			0.026			0.025
			(0.125)			(0.122)
Bank Tier-1 Common Equity Ratio $_{t-1}$			13.639			10.864
			(22.617)			(23.081)
Bank Cash Holding $_{t-1}$			208.902*			235.048**
			(114.222)			(112.780)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	1,233	1,216	1,216	1,233	1,216	1,216
Adjusted R^2	0.890	0.894	0.894	0.890	0.894	0.895

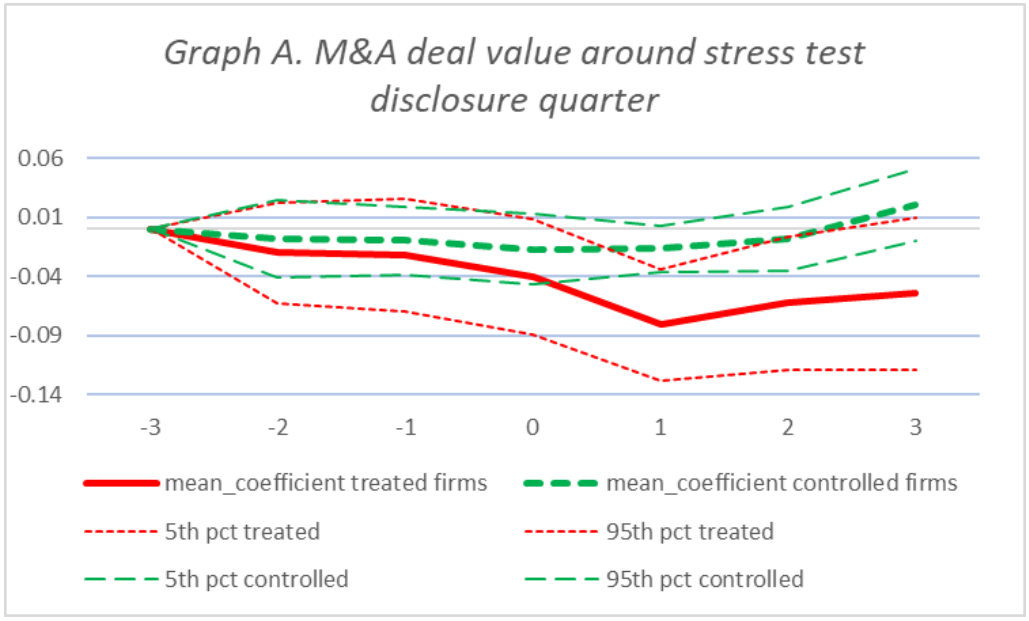
Table 8. The Impact of Bank Stress Test Failure on Firms' Profitability

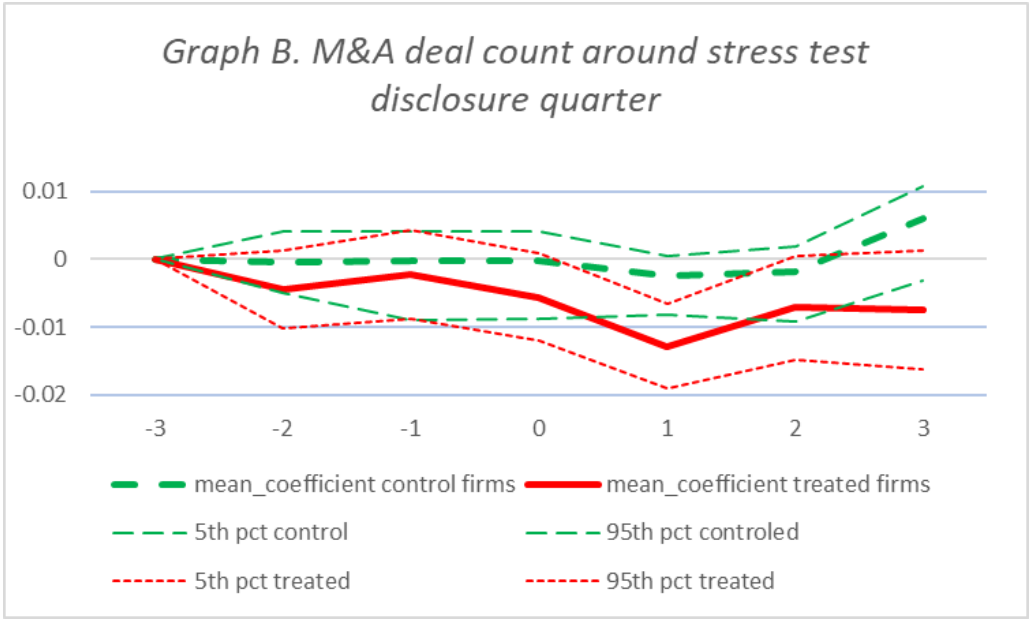
The table reports the results of OLS regressions that investigate the impact of bank stress test failure on firms' profitability three quarters before and after the release of stress tests results. The analyses are based on quarterly data covering the period from March 2008 to September 2017. A detailed description of the variables is presented in Table A1 in the Appendix. The dependent variable ROA is firms' return on assets; the dependent variable ROE is firms' return on equity. Robust standard errors are clustered at the firm level and are shown in parentheses. ***, **, and * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Dep. Var.:	ROA			ROE		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated × Post	0.002***	0.001**	0.001**	0.007**	0.005*	0.005*
	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)	(0.003)
Treated	-0.001	-0.001*	-0.001**	-0.003	-0.003	-0.004
	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.002)
Post	0.000	-0.000	-0.000	-0.000	-0.000	-0.001
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Firm Controls						
Firm Size$_{t-1}$		0.007***	0.007***		0.015***	0.015***
		(0.001)	(0.001)		(0.004)	(0.004)
Market-To-Book $_{t-1}$		0.001***	0.001***		0.007***	0.007***
		(0.000)	(0.000)		(0.001)	(0.001)
Sales_Growth $_{t-1}$		0.015***	0.015***		0.047***	0.047***
		(0.001)	(0.001)		(0.005)	(0.005)
Leverage $_{t-1}$		-0.039***	-0.039***		-0.159***	-0.159***
		(0.004)	(0.004)		(0.015)	(0.015)
Past_Stock_Return $_{t-1}$		0.000***	0.000***		0.000***	0.000***
		(0.000)	(0.000)		(0.000)	(0.000)
Bank Controls						
Bank Size $_{t-1}$			-0.000			0.000
			(0.000)			(0.001)
Bank Loan Loss Provision $_{t-1}$			-0.000**			-0.001*
			(0.000)			(0.001)
Bank Tier-1 Common Equity Ratio $_{t-1}$			0.006			-0.123
			(0.028)			(0.108)
Bank Cash Holding $_{t-1}$			0.230*			0.292
			(0.117)			(0.414)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	38,529	37,818	37,818	36,886	36,743	36,743
Adjusted R^2	0.336	0.369	0.369	0.282	0.330	0.330

Figure 1. M&A Activity around Stress Test Result Release

This figure compares the M&A deal value and deal count by firms whose relationship banks failed stress tests with those of firms whose relationship banks did not fail a stress test around the test result release quarter. The effect of firms' banks failing a stress test on M&A deal value is shown in Graph A, and the effect on M&A deal count is shown in Graph B. The treatment group (blue solid line) includes firms whose relationship bank(s) failed stress tests while the control group (red dotted line) includes firms whose relationship bank did not fail the test around the announcement quarters. We derive the effect of bank stress test failure on M&A activity from the regression coefficients of the quarter indicators in equation (5), running on the control and treated firms separately. The graphs also provide the 90% confidence interval of the effect for the control and treated firms, respectively. Quarter 0 is the quarter the Federal Reserve Board announced the stress test results.





Appendix
Table A1. Variable Description

Variable	Definition	Source
Deal Value	Natural logarithm of one plus the total dollar amount a firm paid in all acquisitions within a quarter	SDC Platinum
Deal Count	Natural logarithm of one plus the total number of M&A deals announced within a quarter	SDC Platinum
CAR (-1,1)	Deal-value weighted cumulative abnormal return (in percentage) of the firm in the (-1,1) window across all M&A deals completed in a quarter, where day 0 is the date when an M&A deal is completed; daily abnormal stock returns are calculated using the market model and the CRSP value-weighted index with the estimation window being days (-200, -60) before the event date	CRSP
MAR (-1,1)	Deal-value weighted cumulative abnormal return (in percentage) of the firm in the (-1,1) window across all M&A deals completed in a quarter, where day 0 is the date when an M&A deal is completed; daily abnormal stock returns are calculated using the market adjusted model and the CRSP value-weighted index with the estimation window being days (-200, -60) before the event date	CRSP
Number of Financial Covenants	Natural logarithm of one plus the total number of financial covenants on a loan	DealScan
Bank Screening	An indicator variable that equals to one if at least one M&A-related syndicated loan is issued to the acquiring firm by a bank during the three quarter period around the M&A deal announcement date. We define a loan as M&A related if the primary or secondary purpose of the loan is "Acquis. Line", "Merger", or "Takeover" or if the purpose of a loan is "Corp. Purposes" and the loan's facility start date coincides with the window of one month before an M&A deal announcement until the M&A deal completion date	
Firm Characteristics		
Firm Size	Logarithm of Firm Market Cap	Compustat
Market-To-Book	Market value of assets/book value of total assets	Compustat
Sales_Growth	Percentage change in firm's total sales from year *t-1* to year *t*	Compustat
Leverage	Book value of debt / book value of assets	Compustat
Past_Stock_Return	The firm's buy-and-hold abnormal stock return in the (-210,-30) window, where day 0 is the date when IDD is adopted or rejected in state where firm's headquarters is located; buy-and hold abnormal stock return is calculated by subtracting the buy-and-hold CRSP value-weighted index return from the buy-and-hold stock return of the firm	CRSP
ROA	The firm's earnings before extraordinary items scaled by book value of assets	Compustat
ROE	The firm's earnings before extraordinary items scaled by book value of equity	Compustat
Board Size	Number of board members in a company	BoardEx
Free Cash Flow	(Operating cash flow-interest and related expense-income tax-capital expenditures)/total assets	Compustat
Institution Ownership	Percentage share ownership of the firm's top 5 largest institutional shareholders	Thomson Reuters 13F
Hostile Takeover Index	Firm-specific hostile takeover index from Cain, McKeon, and Solomon (2017)	https://pages.uoregon.edu/smckeon
Board Independent Director	Percentage of board directors who are independent directors	BoardEx
Age	The number of years since firm appears on Compustat	Compustat
Dividend	Total amount of cash dividends paid for common equity / common equity	Compustat
HP index	Hadlock and Pierce (2010) financial constraint index	Compustat
WW index	Whited and Wu (2006) financial constraint index	Compustat
Credit Constraint – Junk Rated	An indicator variable that equals one if firms' long-term debt is rated as junk grade or not rated and equals zero otherwise	S&P
Credit Constraint – Non-rated	An indicator variable that equals one if the firm does not have a rating for its long-term debt according to S&P and equals zero otherwise	S&P

Altman's Z Score	Altman's Z (1968) score, defined as 1.2*(working capital/total assets)+1.4*(retained earnings/total assets)+3.3*(EBIT/total assets) +0.6*(market value of equity/total liabilities)+0.99*(net sales/total assets)	Compustat
Bank Characteristics		
Bank Size	Weighted average natural logarithm of total assets of banks' relationship banks	FR Y-9C, DealScan
Bank Loan Loss Provision	Weighted average allowance for loan and lease loss / loans and leases held for sale of banks' relationship banks	FR Y-9C, DealScan
Bank Tier-1 Common Equity Ratio	Weighted average (Total_equity- preferred_stock)/total assets of banks' relationship banks	FR Y-9C, DealScan
Bank Cash Holding	Weighted average non-interest bearing cash and balances / total assets of banks' relationship banks	FR Y-9C, DealScan

Table A2. Correlation Matrix

The table reports correlations between different variables in our sample. The sample consists of quarterly data covering different rounds of stress tests during the period from March 2008 to September 2017. A detailed description of the variables is presented in Table A1 in the Appendix.

	Deal Value	Deal Count	CAR (-1,1)	MAR (-1,1)	Firm Size	Market-To-Book	Sales_Growth	Leverage	Past_Stock_Return	ROA
Deal Count	0.929									
CAR (-1,1)	0.016	0.002								
MAR (-1,1)	0.015	0.007	0.997							
Firm Size	0.091	0.057	-0.159	-0.157						
Market-To-Book	0.012	0.012	-0.016	-0.008	0.112					
Sales_Growth	0.016	0.016	-0.010	-0.007	0.026	0.029				
Leverage	-0.037	-0.040	0.136	0.133	-0.253	-0.048	-0.030			
Past_Stock_Return	0.011	0.010	-0.063	-0.047	0.061	0.062	0.039	-0.081		
ROA	0.024	0.020	-0.036	-0.033	0.285	0.089	0.085	-0.262	0.127	
ROE	0.020	0.017	0.019	0.026	0.224	0.200	0.080	-0.212	0.116	0.800
Bank Size	-0.029	-0.025	-0.029	-0.029	-0.016	-0.055	-0.015	-0.222	-0.002	0.063
Bank Loan Loss Provision	0.011	0.008	-0.042	-0.045	0.104	-0.002	0.005	-0.042	-0.012	0.039
Bank Tier-1 Common Equity Ratio	-0.008	0.001	-0.012	-0.015	-0.062	-0.036	0.020	-0.259	-0.004	0.088
Bank Cash Holding	-0.005	-0.006	0.000	0.000	0.066	-0.020	-0.010	-0.153	0.007	0.082

	ROE	Bank Size	Bank Loan Loss Provision	Bank Tier-1 Common Equity Ratio
Bank Size	0.042			
Bank Loan Loss Provision	0.030	0.180		
Bank Tier-1 Common Equity Ratio	0.063	0.622	0.174	
Bank Cash Holding	0.060	0.640	0.433	0.380

Table A3. An Overview of Banks that Failed SCAP and CCAR Stress Tests, 2009–2016

The table provides an overview of the outcomes of the stress tests across different rounds.

Bank names	2009 SCAP	CCAR 2012	CCAR 2013	CCAR 2014	CCAR 2015	CCAR 2016
Bank of America	†				‡	
BB&T Corporation			†			
Citigroup Inc.	†	†		†		
Fifth Third Bancorp	†					
Keycorp	†					
MetLife, Inc.		†				
Morgan Stanley	†		‡			
Regions Financial	†					
SunTrust Banks, Inc.	†	†				
The Goldman Sachs Group, Inc.			‡			
The PNC Financial Services Group, Inc.	†					
Ally Financial Inc.	†	†	†			
Deutsche Bank Trust					†	†
HSBC North America Holdings Inc.				†		
RBS Citizens Financial Group, Inc.				†		
Santander Holdings USA, Inc.				†	†	†
Wells Fargo & Company.	†					
Zions Bancorporation				†		

†Objection to capital plan

‡Conditional non-objection to capital plan