

Why Do Distressed Firms Acquire?*

Quxian Zhang (Eden)
Erasmus University

Job Market Paper
November 5, 2016

Abstract

Acquisitions done by distressed firms in recent years are economically significant. I explore the rationale behind such acquisitions using a natural experiment in which a tax change for creditors reduces debt restructuring cost. Upon an exogenous reduction in bankruptcy probability, distressed firms react by reducing acquisition activities. Specifically, they become more focused by cutting 75% diversifying acquisition and 34% total acquisition spending, and by doubling divestitures and increasing capital expenditures. The evidence supports the financial synergy motivation that distressed firms acquire to diversify cash flow risk, rather than the growth opportunity motivation that distressed firms capture external growth opportunities via acquisitions to revive growth. These findings indicate a new cost of financial distress in investment. When firms are under pressure to meet debt obligations, it creates an incentive for firms to diversify and shifts investment from internal capital expenditure to expansionary acquisitions.

JEL classification: G31, G33, G34

Keywords: acquisitions, bankruptcy, diversification, corporate investment

*Correspondence to Eden Zhang, qzhang@rsm.nl, Finance Department, Rotterdam School of Management, Erasmus University, PO Box 1738, 3000 DR Rotterdam, the Netherlands. I am grateful to Sudipto Dasgupta, Abe de Jong, Thomas Lambert, Hang Li, David Mauer, Anjana Rajamani, Peter Roosenboom, Frederik Schlingemann, Peter Swan, Wolf Wagner, and David Yermack for valuable suggestions and comments. All errors are mine.

1. Introduction

In contrast to the intuition that financial distress inhibits mergers and acquisitions, distressed firms contribute an economically significant proportion of aggregate activities. The total value of acquisitions made by U.S. large public firms is \$1.8 trillion between 2010 and 2014, of which over 28% comes from distressed firms with Altman's Z-score below 1.9.¹ The market capitalization of these distressed firms only amounts to 18% of the aggregate market capitalization of all large public firms. It is intriguing why distressed firms acquire so much. While the distressed acquirers may be able to revive growth via external investment, the acquired assets tended to be complementary to their core business, which suggests that financial synergy could be a driver for such acquisitions. One recent acquisition that involved a deeply distressed firm making a diversifying acquisition is SoftBank's acquisition of ARM Holdings. In July 2016, SoftBank, a Japanese telecommunications and internet service company with approximately \$1 trillion in total assets but only \$20 billion in equity, announced an all-cash acquisition of a British chip design company, ARM Holdings.² This \$32-billion deal was the largest acquisition in Asia and Europe by that time. It caught worldwide attention due to SoftBank's poor financial status and the fact that SoftBank was completely new to the semiconductor industry. SoftBank was in apparent financial distress, with an Altman's Z-Score less than 1.2, and a recent downgrade from BBB to a non-investment grade BB+. When SoftBank conducted a series of high-profile asset sales prior to the announcement of the deal, investors speculated that SoftBank would use the \$20-billion proceeds to bolster its financial status or increase stake in one of its old investment.³ But SoftBank used up all the cash from asset sale. The CEO highly regarded the acquisition as a "paradigm shift" at

¹I aggregate the deal value for acquisitions announced between 2010 and 2014 covered by SDC Platinum. I require that the shares acquired or sought in the acquisitions are above 50% and that the acquirers are non-financial and non-utility firms in Compustat/CRSP with total assets over \$100 million. Firms with Altman's Z-scores under 1.9 are highly distressed according to Altman (2013).

²The numbers are from 2015 annual report of SoftBank. At the end of 2015 fiscal year, SoftBank has total assets of 21.03 trillion Yen,

³There was speculation that SoftBank would use the proceed from selling its most valuable assets - Alibaba shares - to purchase more shares of Yahoo Japan. See <https://www.bloomberg.com/news/articles/2016-06-02/softbank-s-proceeds-from-alibaba-stake-to-reach-8-9-billion>.

SoftBank, while the -11% stock price reaction suggested that SoftBank’s investors did not agree.⁴ Anecdotal evidence motivates to investigate further about the acquisitions made by distressed firms. This study investigates what drives distressed firms to invest externally.

The M&A literature offers various theories and evidence on acquisitions of distressed assets,⁵ while the research on the motivations for acquisitions made by distressed firms is scant. Depending on the nature of firm distress, firms benefit from acquisitions in different aspects. The management literature describes acquisition activities in distress as a type of “turnaround” strategies.⁶ Such arguments are especially relevant to economically distressed firms. Financial literature also shows that investment opportunities within firms are correlated with external investment (McCardle and Viswanathan, 1994; and Moeller, Schlingemann, and Stulz, 2004). Firms make acquisitions when they have exhausted their internal growth opportunities (*growth opportunity motivation*). The anecdotal evidence seems to be consistent with growth opportunity motivation since many firms claim to “revive growth” via acquisitions.⁷ But the empirical evidence on whether capturing growth opportunities drives acquisitions in financial distress, and whether acquisitions can be an effective strategy for distressed firms to obtain growth opportunities is inconclusive.⁸ On the other hand, the M&A literature suggests that acquisitions may have diversification benefits for financially distressed firms. For example, diversifying acquisitions reduces cash flow variance and hence decreases asset volatility (Billett, King, and Mauer, 2004; Levy and Sarnat, 1970). The stabilization of cash flows reduces bankruptcy risk (Higgins and Schall, 1975; Lewellen, 1971; Rubinstein, 1973). Thus, such financial synergy of diversifying M&As is valuable for distressed firms (Hubbard and Palia, 1999). The empirical evidence in line with the argument

⁴See <http://www.wsj.com/articles/softbank-agrees-to-buy-arm-holdings-for-more-than-32-billion-1468808434>, and SoftBank’s press release http://www.softbank.jp/en/corp/news/press/sb/2016/20160906_01/.

⁵Studies on acquiring distressed asset includes Hotchkiss and Mooradian (1998), Rhodes-Kropf and Viswanathan (2000), Clark and Ofek (1994), Meier and Servaes (2015), and many more.

⁶See Iyer and Miller (2008); Pearce II and Robbins (1993); Schwartz (1984); Trahms, Ndofo, and Sirmon (2013); and Grinyer, Mayes, and McKiernan (1990).

⁷For instance, IBM spent over \$20 billion on acquisitions between 2010 and 2015 while it was experiencing a significant decline in profitability and a hike in its leverage ratio to 85%.

⁸See Trahms et al. (2013) for a review of management and organizational research on turnaround strategies and diversifying acquisitions.

shows that underperforming acquirers are more likely to acquire an unrelated target over a same-industry target (Park, 2003). However, there is no empirical evidence whether diversification of financial risk drives distressed firms to acquire (*financial synergy hypothesis*). There are two major challenges to test these two motivations empirically. First, it is difficult to isolate financially distressed firms from economically distressed firms. A large fraction of firms exhibiting financial distress are also economically distressed (Andrade and Kaplan, 1998). The two types of distress could even exacerbate each other, making it even more difficult to identify the potential benefits of acquisitions for distressed firms. Second, firms may get into distress due to a series of reckless acquisition activities. Since acquisitions are large investment, acquiring firms normally take on additional debt to finance the cash payment of acquisitions. Higher leverage ratios are more likely to max out firms' debt capacity and induce financial distress.

Dealing with the empirical difficultings in a natural experiment setting, this study analyzes the patterns of acquisitions by distressed firms and investigates whether diversification drives distressed firms to acquire. The identification strategy is to evaluate the change in acquisition activities, divestitures, and internal capital expenditures for distressed firms upon an exogenous reduction in bankruptcy risk. In 2012, the IRS changed tax treatments for creditors in debt restructuring significantly. The tax cost for creditors in renegotiating syndicated loans was reduced significantly. Campello, Ladika, and Matta (2016) find that the tax change reduces bankruptcy probability of distressed firms with high pre-tax-change syndicated loan ratio by 13% and improves access to syndicated loan credit for all distressed firms. Since the change in tax treatments applies only to creditors, it serves as a clean and positive shock to the borrowers' bankruptcy risk. I use this natural experiment to identify the causal link between financial risk and corporate investment. Financial synergy motivation of acquisitions suggest that firms decrease acquisition activities upon an exogenous reduction in bankruptcy probability, reducing the demand to diversify financial risk. The shock does not affect firms' growth opportunity sets but improves their access to credit.

Growth opportunity motivation of acquisitions would imply that distressed firms do not change acquisition behaviors, or even increase acquisition activities due to improved access to credit.

First, I look into merger intensity for bankrupt firms in the years prior to their Chapter 11 filings. Surprisingly, firms do not exhibit a monotonically decreasing pattern in acquisition activities while they being closer to bankruptcy. On average, the value of acquisitions done by distressed firms is about 13% of their total assets at the year beginning. It stays relatively constant during the 6th and the 3rd years before filing for bankruptcy, and even increases two years before bankruptcy. The value of diversifying acquisitions exhibits a monotonic increasing pattern growing from 6% to 9% of total assets as distressed firms become closer to bankruptcy. The evidence does not support the traditional view that financially distressed inhibits firms from engaging in acquisitions. It confirms the observation based on the anecdotal evidence that there are frequent takeover activities made by distressed firms.

Next, I investigate whether bankruptcy risk drives acquisitions in distress. The primary challenge to examine the motivation for acquisitions by distressed firms is that there could be limited growth opportunities within distressed firms, as well as demands to diversify bankruptcy risk. I employ a difference-in-difference-in-difference approach based on a regulatory change in tax treatment for debtholders, which affects creditors' willingness to renegotiate syndicated loans out of court during debt restructuring (see Section 2 of this paper, and Campello et al., 2016). The specific regulatory change has been shown in Campello et al. (2016) as an exogenous reduction in bankruptcy probabilities by 13% for distressed firms with high usage of syndicated loans. Using this shock, I find that a reduction of bankruptcy risk results in a drop by 34% in cash expenditure on acquisitions relative to total assets for distressed firms upon the shock. Consistently, I observe even larger drops in actual acquisitions announced in the 12-month periods around the shock by 46% and diversifying acquisitions by 75%. Also, distressed firms almost double the size of divestitures and borrow significantly less for acquisitions due to the reduction in bankruptcy risk. The bor-

rowing purposes of syndicated loans for the treated firms shift from acquisitions to internal investment. Specifically, for the treatment group, the likelihood to borrow new syndicated loans for acquisitions decreases significantly by 25 percentage points while the likelihood for internal investment increases by an equal size of 25 percentage points. Also, asset risk, proxied by option-implied volatilities, increases together with the reduction in acquisition activities, conforming to the diversification motivation for acquisitions in distress. Overall, the results strongly support the financial synergy motivation since the tax change is a clean shock in the bankruptcy risk of treated firms and does not affect firm growth opportunities.

This study makes several contributions. First, it adds to the general literature of mergers and acquisitions, by documenting the acquisition patterns of distressed firms and presenting the diversification motivation for such acquisitions. Contrary to the classical argument that firms in distress are unlikely to acquire,⁹ I find an increasing pattern of diversifying acquisitions made by distressed firms and establish a causal link between financial risk and acquisitions which implies that diversification benefit has a first-order effect on acquisition decisions for distressed firms. It extends the current understanding of diversifying acquisitions, which has been mostly focusing on the conglomerate waves between the 1960s and 1990s. I demonstrate the causal link between diversifying acquisitions and bankruptcy risk, adding to the evidence of financial synergy in diversifying acquisitions. My finding on the diversification motivation also highlights financial synergy for distressed acquirers, which extends the evidence on distressed targets (Billett et al., 2004; Hubbard and Palia, 1999). Compared to Park (2003) that shows a positive link between pre-acquisition profitability and diversifying acquisitions and speculates about growth opportunity motivation, I not only analyze the acquisition patterns by distressed firms but also distinguish the diversification hypothesis from the growth opportunity hypothesis.

Second, it relates to the existing literature on how financial distress affects investment policies. The previous research has documented many theories that the costs of financial

⁹For example, Kaplan (1989) finds dramatic increases in leverage are associated with sharply reduced investment; increasing debt is considered to be an effective way to curtail empire-building acquisitions.

distress influence investment decisions in the presence of market frictions (see Myers, 2003). For example, financial distress could positively relate to investment risk (*risk shifting*; Jensen and Meckling, 1976), or negatively to investment levels (*debt overhang*; Myers, 1977). And benefits of leverage are also present, including preventing empire building activities (*free cash flow problems*; Jensen, 1986), and derail inefficient investment (*discipline effect*; Chava and Roberts, 2008). In addition to them, I propose another distortion of financial distress on investment: the pressure to meet debt obligations incentivizes distressed firms to seek diversifying investment, in particular, via acquisitions. It also implies that financial distress can drive the style of corporate investment from internal organic growth to external expansions.

The rest of the paper is organized as follows. Section 2 describes the sample and the empirical design. Section 3 presents the empirical analysis of why distressed firms make acquisitions. Section 4 discusses alternative hypothesis. Section 5 concludes.

2. Data and Variables

This section provides the description of the empirical design. First, I describe my sample selection and characteristics. Then I introduce the exogenous shock for the causal tests of motivations for acquisitions by distressed firms and explain the identification strategy.

2.1. Data

This study uses data from several sources. The firm sample starts with all large firms from 2010 to 2014 in the intersection of Compustat and CRSP, excluding financial and utility firms.¹⁰ I consider a firm “large” if it has start-of-period total assets worth more than \$100 million.¹¹ Firm fundamental information is from Compustat and stock price data from CRSP.

¹⁰I exclude financial industry (SIC header 6) and regulated industry companies (SIC headers 48 and 49).

¹¹I adjust the dollar value of total assets to 2012 dollars by the Consumer Price Index and require that the adjusted value of total assets for an individual firm is always above \$100 million.

For acquisitions, I collect all completed mergers and acquisitions from SDC Platinum between 2010 and 2014, with positive deal value, shares sought or shares acquired larger than 50%, and transaction types as M&As or tender offers. I match the six-digit CUSIPs of acquirers, their immediate parent firms, and their ultimate parent firms, to the first six digits in CUSIPs of securities in CRSP. To exclude trivial acquisitions, I drop deals that are worth less than 1% of firms' total assets. In addition to M&As, I also collect divestitures with positive deal value by matching the six-digit CUSIPs of parent companies of the divestiture targets to firms in my sample.

In the analyses utilizing the natural experiment, I focus on the subsample of large firms between 2010 and 2014 in the intersection of Compustat, CRSP, and the syndicated loan database, LPC-Dealscan. I match firm-year sample to LPC-Dealscan using the linking table provided by Chava and Roberts (2008).¹² Loans with missing facility amounts or missing maturities are excluded. I further drop loans that are canceled, rumored, or suspended. Since the exogenous shock in later analyses applies to the U.S. market, I only keep completed syndicated loans that originate in the U.S. and with facility amounts above \$100 million.

2.2. Sample Characteristics

Table 1 reports descriptive statistics for the firm-year observations in the sample between 2010 and 2014. The statistics are calculated for two different samples, sorted by financial distress.

¹²I thank Chava and Roberts (2008) for making the linking table available online. Since the linking table is updated until August of 2012, there could be many unmatched loans for firms that start utilizing loan syndication in recent years. Thus, I also do robustness checks with only firms that can be matched with the linking table during my sample period in order not to underestimate syndicated loan usage systematically after the exogenous shock in September of 2012.

2.3. *Empirical Strategy*

2.3.1. *A Natural Experiment in Corporate Bankruptcy Risk*

The challenge to show the causal relationships between the diversification or growth opportunity motivation and acquisition activities of distressed firms is that financially distressed firms tend to be both bearing high bankruptcy risk and lacking internal growth opportunities. An ideal setting to disentangle the two potential motivations is to have a clean exogenous shock that only affects one of the possible motivations and study the consequent change in acquisition activities. In this study, I rely on a tax change that only affects the bankruptcy risk of certain distressed firms to test whether distressed firms adjust acquisition activities as a result of the shock.

On September 12, 2012, the U.S. Treasury announced new rules, TD9599, that have significantly changed the income tax treatment of creditors during debt restructuring.¹³ During corporate restructuring, IRS treats significant modification on old debt issues as taxable exchanges of old debt issues for new ones if the restructuring occurs outside of Chapter 11 court.¹⁴ Debt holders must report to the IRS for any capital income incurred. The tax base is the excess of the value of the new debt over the “issue price” of the old debt. The specific tax treatment depends on the classification of the debt as publicly traded or private. In particular, these two types of debt are treated differently in determining the value of the new debt after the restructuring. Even though there had been an actively-traded syndicated-loan market with a size over \$1 trillion, the IRS did not consider syndicated loans as publicly-traded debt until the tax change in 2012.

Before the tax change, syndicated loans were classified as private debt. If a creditor of a syndicated loan is not the original lender, then upon out-of-court debt restructuring, she has to pay tax for the difference between the par value of the new debt and the initial purchase

¹³See Campello et al. (2016) for a more detailed description of the tax treatments and the change in the tax change. I benefit from their excellent analysis of the event.

¹⁴The taxable income, which is called cancellation of debt income, is fully exempted if the debt is discharged under Chapter 7 or 11 of the Bankruptcy Code (Mandarino, 2010; Scarborough and Caracristi, 2012).

price. The par value is usually the principal amount while the corresponding purchase price for the distressed debt is always far below the principal amount. Since the restructuring process frequently involves modification of the maturity dates and yields, but rarely the principal amount, the creditor who has purchased the loan from a secondary market owes tax on a phantom gain, which is the difference between the principal amount and the market purchase price of the distressed debt. It hinders the creditor from restructuring the debt since such costs can be avoided if the creditor pushes the borrower to bankruptcy court.

After the shock on September 12, 2012, IRS treats debt over \$100 million with “indicative quotes” as publicly-traded debt. In this case, the aforementioned creditor is to pay tax for the excess of the fair market value and the market price at which the creditor has purchased the loan. The adjusted tax treatment makes sure that the creditor owes capital income tax only on the capital gain from restructuring the debt.

The tax change reclassified syndicated loans from private debt into publicly-traded debt. Figure 2 presents an illustration of tax treatment. In a simple case where a syndicated loan with a principal amount \$1000 becomes distressed, its value drops to \$400 in distress and the lender can opt for restructuring the distressed borrower out of court. Before the tax change, the original lender does not incur any tax since the principal amount stays unchanged, no matter whether she agrees to renegotiate or liquidate it under bankruptcy proceedings. The lender can claim a tax credit for her capital loss if she sells it to other investors who are willing to restructure the borrower out of the bankruptcy court. Suppose that the distressed loan is sold to a creditor at the market value \$400 and that the creditor successfully enhances the value of the distressed loan to \$600 by renegotiating with the borrower. The actual capital gain is, therefore, the added proportion in the distressed loan value, ($\$600 - \$400 = \$200$). However, under the old tax treatment, her taxable income upon restructuring is based on the principal amount of the “new” loan, \$1000. She is liable for a high tax due to the phantom gain ($\$1000 - \$400 = \$600$). With a marginal tax rate of 35%, the tax is even higher than the actual capital gain. On the other hand, the creditor does not have to pay any tax if

she pushes the borrower to Chapter 11 and restructure the loan after the borrower files for bankruptcy. The tax change fixes the phantom gain problem by treating syndicated loans as publicly traded debt in debt restructuring. After the tax change, the creditor only needs to pay a reasonable tax, \$70. Therefore, the most direct consequence of the tax change is a potential tax reduction for debtholders regarding renegotiating syndicated loans out of court. Syndicated-loan holders are more incentivized to renegotiate the debt rather than directly go to the bankruptcy court after the tax change. Campello et al. (2016) show that markets anticipate more out-of-court renegotiations instead of bankruptcies with the passage of the tax change. Specifically, CDS spreads dropped by 53 basis points, or by 19% in the week of the tax change announcement for distressed firms with high syndicated-loan-to-debt ratios. They also estimate that the bankruptcy probability decreases by 13% and that over \$100 billion is saved in potential tax for debtholders. Since the tax change is a shock directly on the debtholders, it is a clean exogenous shock on the bankruptcy risk for distressed firms to the extent of their syndicated-loan usage. In addition to the effect of reducing bankruptcy probabilities for distressed firms with high usage of syndicated loans, Campello et al. (2016) also point out an indirect effect of the tax change: it also enhances the access to credit for distressed firms. In particular, distressed firms are 8% more likely to obtain a new syndicated loan and receive a 28-basis-point drop in loan markups after the tax change

2.3.2. Tests of Financial Synergy Motivation

The main research question of this study is whether financial synergy drives distressed firms to engage in external investment, such as acquisitions. In particular, I want to capture causal changes in investment activities when there is a change in firm bankruptcy risk. When bankruptcy probability drops, the need for distressed firms to diversify should decrease. The event the tax change serves as an instrument for such change. In particular, the quasi-experiment the tax change is an exogenous reduction in corporate bankruptcy risks for a treatment group within distressed firms. The *financial synergy motivation* that

diversification of bankruptcy risk is a driver for acquisition in distress predicts a reduction in acquisition activities or an increase in divestitures when bankruptcy risk decreases. Consequently, such change in acquisition strategies should result in an increase in firm risks due to these refocusing actions. Since the tax change does not affect firm fundamentals directly, and positively influence access to the syndicated-loan market for distressed firms, *growth opportunity motivation* predicts that distressed firms utilize the improved access to credit and increase acquisition activities as a result of the tax change.

The predictions of *financial synergy motivation* motivate me to compare various measurements of investment for distressed firms with high usage of syndicated loans at the time of the tax change to distressed firms with low usages. Here I use the ratio of syndicated loans in total debt as the measure of the usage of syndicated loans. The key assumption for consistency of the tax change as an instrument is the parallel-trends assumption. Economically, I need to make sure that in the absence of treatment the tax change, the average change in the investment variables would have been the same for both the treatment and control groups. However, there is a concern that firms with higher syndicated-loan-to-debt ratio have better relationships with banks and therefore are more likely to be able to make acquisitions. To solve such potential inconsistency, I include medium-distressed or non-distressed firms and compare firms across the same levels of syndicated-loan-to-debt ratios. Thus, the setup of the treatment group involves a two-way division of the firm sample. I split the sample by the syndicated-loan-to-debt ratio and the degree of financial distress. The treatment group is the sample of highly distressed firms with high syndicated-loan-to-debt ratios. Therefore, I implement the comparison of investment for treatment group versus the control groups via a triple-difference model for firm i in time t :

$$\begin{aligned}
Investment_{it} = & \alpha + \beta_1 HighSynd_i + \beta_2 Distressed_i + \beta_3 HighSynd_i \times Distressed_i \\
& + \beta_4 PostTaxChange_t + \beta_5 HighSynd_i \times PostTaxChange_t \\
& + \beta_6 Distressed_i \times PostTaxChange_t \\
& + \beta_7 HighSynd_i \times Distressed_i \times PostTaxChange_t + \gamma X_{it-1} + \eta_i + \nu_t + \varepsilon_{it}
\end{aligned} \tag{1}$$

In the model above, $Distressed_i$ is an indicator that equals one if firm i has a high degree of financial distress at the time of the tax change, and 0 otherwise. The main analyses use Distance-to-Default, based on Merton (1974). I calculate Distance-to-Default following and Vassalou and Xing (2004) and Bharath and Shumway (2008). In this case, $Distressed_i$ equals one when distance-to-default for firm i is in the upper tercile prior to the tax change. I also use an alternative measure for distress, Altman's Z-Score, and $Distressed_i$ equals one for firms with Z-score below 1.9 prior to the tax change announcement.

$HighSynd_i$ is an indicator that equals one if firm i is in the top half of usage of syndicated loans at the time of the tax change. I measure the usage of syndicated loans by Syndicated Loan Ratio. The ratio is calculated by dividing the total facility amount of syndicated loans for firm i at the time of the tax change by the total assets of firm i prior to the tax change announcement. A qualifying syndicated loan has a start date before the month of tax change announcement, an end date after the month of tax change announcement and a facility amount over \$100 million. $PostTaxChange_t$ is an indicator that equals one if time t is after the tax change. Time t can be a fiscal year or a window of 12 months depending on the frequency of each dependent variables. X_{it-1} is a vector of usual control variables. Table A.1 lists detailed definitions for all variables. η_i is an industry fixed effect based on 4-digit SIC, firm credit rating, or firm fixed effects. ν_t is a time fixed effect, which can be absorbed by $PostTaxChange$ for regressions based on two periods. ε_{it} is a random error term which is potentially correlated within firm observations and heteroskedastic (Petersen, 2009). I

calculate the heteroskedasticity-consistent standard errors and cluster standard errors at the firm level.

The coefficient of interests in Equation (1) is β_7 . A significantly negative β_7 indicates that investment activities decrease more sharply following a reduction in bankruptcy probabilities for highly distressed firms with high usages of syndicated loans. In a regression with a dependent variable measuring acquisitions, such a negative β_7 would support the financial synergy motivation that bankruptcy risk is a driver for distressed firms to make acquisitions.

2.3.3. Acquisition Intensities

To measure corporate investment activities, primarily acquisitions, I construct measures of intensities for acquisitions and internal investment from three different sources:

Cash outflows of investment activities: I first look into the usage of funds on various types of investment, including acquisition and capital expenditure (CapEx). I extract information from Compustat and calculate annual cash outflows on acquisition expenditure and CapEx, standardized by total assets. The primary variable is the acquisition expenditure, which normally expands the scope of operations (Graham, Lemmon, and Wolf (2002)). And corporate CapEx is usually funds spent on physical assets such as property, plants, and equipment. It is mainly to maintain the scope of firm operations.

Diversifying acquisition and divestiture activities: In addition to total annual spending on investment activities, I investigate actual acquisition and divestiture activities announced around the shock. I calculate the total value of acquisitions and divestitures to evaluate the magnitude of acquisition and divestitures activities. I use the natural log transformation of total deal value or standardize the total value by total assets. For acquisitions, I also measure the total cash payment for each deal. The cash payment for a deal is the multiplication of its deal value and the percentage of cash in payment provided by SDC.

Use of proceeds: After I measure investment activities based on the total usage of cash on investment activities and on what deals the firms do in takeover markets, I also

look into what firms claim to do with newly obtained credit. I collect the primary purposes of syndicated loans, provided by Dealscan, and categorize them into acquisitions, CapEx, debt repayment, equity payout, operating liquidity, etc. Specifically, I classify loans for acquisition line, LBO, mergers, or takeovers as for acquisition-related purposes, loans for capital expenditures, corporate purposes, or project finance as for CapEx-related purposes. I also consider loans for either of these two types as for investment-related purposes. Similar to those of acquisition and divestiture activities, I use the log transformation of total loan sizes, standardized total loan sizes by total assets, the number of newly borrowed loans, and the indicator of borrowing new loans for both types of investment-related purposes.

To reflect the effect of acquisitions on firm riskiness, I calculate a measure of asset risk based on option-implied volatilities. I include all near-the-money stock options with positive open interests, positive best bid price, and non-missing expiration dates. I further delete options with bid-ask spreads more than 50% of the average of the bid and ask prices. I calculate option implied volatilities either utilizing the last observation for each option in a period or weighting daily option observations by volumes, following Bali and Hovakimian (2009) and Xing, Zhang, and Zhao (2010).

2.3.4. Control Variables

M&As are the most economically significant investment by firms. Thus, the control variables are common factors that affect investment decisions, including leverage, size, ROA, liquidity, cash flow, tangibility, and market-to-book ratio. I also include term premium, the difference between the interest rates on 10-year Treasury bonds and 2-year Treasury notes to control for interest rate uncertainties. Interest rate uncertainties are shown to have a sizable effect on the timing of investment (Chen, 1991; Ingersoll, Jr. and Ross, 1992). All control variables are lagged one year, except for cash flow and term premium, which are contemporaneous with investment.

3. Motivations for Acquisitions

3.1. *Acquisition Expenditure and Corporate Investment*

Figure 1 reveals that distressed firms actively make acquisitions. And the pattern in intensities of diversifying acquisitions suggests that diversification could drive distressed firms to acquire. However, it is also possible that distressed firms make acquisitions in other industries due to the drainage of growth opportunities within their original industries (McCardle and Viswanathan, 1994). To understand why distressed firms start to make more acquisitions in recent years, I conduct causal tests based on an exogenous reduction in bankruptcy probabilities. The exogenous shock, tax change announcement, reduces bankruptcy probabilities because it enhances creditors' willingness to renegotiate default debt instead of pushing it to Chapter 11 bankruptcy. Therefore, it neither affects the growth opportunities within and outside firms nor directly alters any operating activities. It cleanly separates the potential financial synergy motivation from effects caused by growth opportunities. The financial synergy motivation implies that distressed firms have less incentive to diversify when their bankruptcy risk decreases. The tax change announcement serves as a positive shock in bankruptcy risk for distressed firms. The degree of their exposures to the shock depends on the proportion of syndicated loans in total liabilities at the time of the tax change announcement. Thus, the financial synergy motivation predicts that a distressed firm cuts more on acquisition spending after the tax change announcement if it receives a larger reduction in bankruptcy probability upon the tax change announcement.

I focus on the period of 2010-2014 in my sample to study the effects of tax change announcement (in 2012) on acquisition activities. All sample firms are with start-of-period total assets over \$100 million during 2010 and 2014. Table 1 presents summary statistics for independent variables and control variables in the baseline tests, based on cross-sectional firm observations in 2012. For a valid triple-difference analysis, one important assumption is that the two dimensions along which I split my samples should be independent. Figure

3 depicts the average financial distress across quintiles of Syndicated Loan Ratio. And the average Syndicated Loan Ratio are similar for non-distressed and distressed firms. Panel B shows that both Z-score and distance-to-default variables for non-distressed and highly distressed firms are close to each other.

I evaluate the changes in acquisition expenditure in a triple-difference setting in Table 3. The treated group is the intersection of highly distressed firms and firms with high Syndicated Loan Ratio. The tests follow Equation (1). The data is a panel data, and therefore, industry fixed effects and year fixed effects are included. *PostTaxChange* equals one if the fiscal year of the firm-year observation is after 2012. All variables are winsorized at 1-99% level. In Column 1, I estimate the level changes for the treatment group of acquisition expenditure, without any control variables. The triple interaction term $HighSynd \times Distressed \times PostTaxChange$ is negative and significant. It shows that acquisition expenditure for the treatment group, highly distressed firms with high syndicated-loan-to-debt ratio, drops significantly by two percentage points. The magnitude of such a drop is substantial, which is 34% of the average acquisition expenditure for the treated group (0.059).

Table 4 reports the results of diversifying acquisitions. When the distress measure is Distant-to-Default, the treated group drops total diversification acquisition value by up to 2.4 percentage points of lagged total assets, a similar size to that of cash outflow of acquisitions. Relative to the average diversifying acquisition value (0.032), the drop is to cut diversifying acquisition activities by 75%. In Panel B, the same Tobit regression is conducted but using the *Distressed* indicator based on Altman's Z-Scores variables. The drop in acquisition expenditure is as high as 2.2 percentage points and statistically significant. Coefficients for $Distressed \times PostTaxChange$ are negative when *Distressed* indicator is based on Altman's Z-score. The results are robust to different sample constructions in Table 4,

In order to check whether the decline in acquisitions is due to the decrease in the demand to diversify or simply a general pattern in all investment activities, I conduct the same regres-

sions using CapEx and R&D costs as the dependent variables in Column 5 to 8. In contrast to the effects on acquisition expenditure, treated distressed firms tend to increase capital expenditure or R&D spending. It points out that tax change announcement only negatively affects acquisition expenditure rather than all types of investment. Since acquisitions are more likely to expand the scope of the firm substantially than internal investment such as CapEx spending, the results suggest that treated firms become more focused on internal investment by reducing diversifying investment.

All in all, the triple-difference analyses of acquisition expenditure confirm the trend of acquisitions made by distressed firms in recent years and strongly support the financial synergy motivation.

3.2. *Acquisitions and Divestitures*

In addition to panel regressions using annual data, I also analyze the actual acquisitions and divestitures announced in shorter periods around the shock tax change announcement. The SDC acquisition data provides more timely measurements of major acquisition activities. I focus on 12-months periods before and after tax change announcement. I exclude the month of September in 2012 when tax change announcement was announced. I summarize the acquisitions made by firms during the two 12-month windows before tax change announcement and post-tax change announcement, and construct a two-period panel data following Campello et al. (2016). I only keep two observations for each firm, and the two observations are based on the two 12-month windows around tax change announcement respectively. The two-period panel data includes much fewer observations than the five-year panel data in Section 3.1. I regress the aggregate acquisition value, as well as divestitures, following Equation (1). The financial synergy motivation predicts that treated firms reduce more acquisition activities comparing to control groups, which is supported by the negative coefficients of the triple-difference term $HighSynd \times Distressed \times PostTaxChange$.

Table 6 reports results of triple-difference regressions using two-period acquisition data.

The dependent variable for Column 1 is the number of new acquisitions announced in each 12-month period. The treated distressed firms make significantly 0.28 fewer acquisitions, or 65% of the sample average, due to tax change announcement. The decline in acquisition activities is not only by the number of new deals but also by total deal value. Column 3 and 4 look into the log transformation of dollar deal value. Column 3 is based on the aggregated deal value for each firm in each 12-month period, while Column 4 uses the product of the proportion of cash payment in each deal and the deal value to capture the aggregate cash payments for each firm-year observation. Both regressions generate significantly negative coefficients around -1.2 for the triple-difference terms. The economic magnitude is substantial. In dollar terms, treated distressed firms reduce acquisition activities by 70%. To evaluate the drop of acquisition intensities relative to firm size, and also to provide a comparable effect size to Section 3.1, I divide the dollar deal value by total assets of firms as the dependent variables in Column 6 and 7. The triple-difference terms are significantly negative. Treated firms reduce (cash) acquisition intensities by 2.8 (2.6) percentage points, or by 50% (71%), after tax change announcement. It is noted that the size of the effect on cash acquisitions, 0.026 of total assets, is consistent with the estimation in Table 3. Therefore, the results based on the actual acquisitions in 12-month windows around tax change announcement confirms the supporting evidence for the financial synergy motivation in Section 3.1.

Since the evidence on acquisition activities from the treated group upon tax change announcement suggesting distressed firms make acquisitions to diversify, it is also possible that firms refocus when they become less distressed. When the bankruptcy risk is attenuated, distressed firms may divest the assets which have been acquired to diversify risk. Column 2, 5 and 8 in Table 6 look into divestiture activities. Although not significantly, numbers of new divestitures increase by 0.059, or 37% of the average number, after tax change announcement for the treated group. The dollar value of divestitures increases insignificantly by 38%. However, relative to firm size, treated firms increase divestiture intensities significantly by 0.004, or by almost doubling the sample average.

The results based on SDC deal information are in line with the financial synergy motivation that distressed firms reduce acquisition activities and refocus by increasing divestment upon a reduction in bankruptcy risk.

3.3. Use of Proceeds

In addition to studying actual acquisitions around tax change announcement, another dimension to verify the drop in acquisition activities is to look into the use of newly obtained funds. In particular, I look into the use of proceeds of loans by firms in the 12-month periods before and after tax change announcement. I categorize syndicated loans into different types of investment activities, according to their primary purposes provided by Dealscan. Acquisition-related investment purposes include acquisition line, mergers, takeovers, etc., while CapEx-related investment purposes are capital expenditure, corporate purposes, and project finance. In contrast to acquisition-related investment, CapEx-related investment is spent internally and more likely to refocus firm operations than to diversify firm scope. Non-investment purposes are debt repayment, equity payout, operating liquidity, etc. I aggregate the loans obtained in each of the 12-month periods and conduct triple-difference regressions.

Results of use of proceeds are in Table 7. In Column 1, The dependent variable is the number of newly obtained loans for investment purposes including both acquisition and CapEx. I do not observe the change in the number of loans for the treatment group to borrow for investment activities in general. However, splitting the investment activities into acquisition related and CapEx related activities, I observe a shift in borrowing patterns. Column 2 and 3 reports the effect of tax change announcement on the log transformation of loan size. In dollar terms, the net effect of an exogenous reduction in bankruptcy probabilities is that the treatment group borrow significantly less by 90% for acquisition activities. In comparison, borrowing for CapEx increases but insignificantly. Looking at the loan value relative to firm size, I observe that borrowing for acquisitions drops by 95% while borrowing for CapEx increases insignificantly by 34%. Therefore, triple-difference regressions on the

use of proceeds provide more support for the financial synergy.

From three different perspectives, I find that distressed firms reduce their acquisition activities significantly when they are treated with a reduction in bankruptcy risk. The drop in acquisition activities is around 52% of the average acquisition spending, or 2 percentage points of firm size, which are economically substantial. Treated distressed firms also increase divestment. The results all strongly support the financial synergy.

4. Discussion on Alternative Hypotheses

4.1. Access to Credit

The results of triple-different regressions capture the change of acquisition activities for distressed firms upon the introduction of the tax change announcement. Although the most direct and immediate effect of the tax change announcement on the treated distressed firms is the reduction in bankruptcy probabilities, Campello et al. (2016) also find that the tax change announcement enhances the access to the syndicated loan credit for all distressed firms. Treated distressed firms are likely to benefit less from the enhancement of access to credit by the tax change announcement since they have already made high usage of the syndicated loan market and may have maxed out their debt capacity on syndicated loans. Thus, there is another possible explanation for the results in Section 3 that all distressed firms increase investment including acquisition activities because of increased financial flexibility, but distressed firms with lower usage of syndicated loans increase investment significantly more than the treated group.

The access-to-credit hypothesis is in line with the significant and negative coefficients for the triple-interaction term $HighSynd \times HighDistress \times PostTD$ when the dependent variable measures acquisition activities. But the access-to-credit hypothesis should also predict a qualitatively similar coefficient of the triple-difference term when the dependent variable measures internal investment. However, the overall CapEx or R&D spending do not

change significantly upon the tax change announcement for the treatment group in Table 3. Moreover, in Table 7, the newly obtained credit for internal investment even increases, although insignificantly. These results do not support the access-to-credit hypothesis.

Next, I study the propensity to obtain new loans as a direct proxy for access to credit. I look into the likelihood to obtain new loans to check whether distressed firms are more likely to borrow syndicated loans for investment activities after the tax change announcement and whether distressed firms with different levels of syndicated-loan-to-debt ratio prior to the tax change announcement borrow differently. In Table 8, I run logistic regressions of indicators of obtaining new loans on the triple-interaction terms using the two-period data. All coefficients reported are average marginal effects. The dependent variable in Column 1 and 2 is whether firms get new loans for investment purposes in the 12 months window before or after the event. Control variables and industry fixed effects are included. No matter whether I control for the credit rating of firms, the coefficients for $HighSynd \times HighDistress \times PostTD$ and $HighDistress \times PostTD$ are both small and insignificant. It suggests that there is no evidence that distressed firms are more likely to obtain loans for investment activities after the tax change announcement and that there is no significant difference between the tax change announcement-treated firms with potentially less debt capacity on syndicated loans and untreated distressed firms. Moreover, there is an apparent shift in borrowing likelihood after TD when I separate the loans for investment purposes into two subsets of loans for acquisition and CapEx respectively. In Column 3 and 4, the marginal effect of the tax change announcement on the propensity to borrow new loans for acquisitions for the treatment group is around -25.8 percentage points, which is significant and robust to add controls for credit ratings. In Column 5 and 6, however, the propensity to borrow for CapEx increases significantly by 25.7 percentage points. Sizes of loans for CapEx in Table 7 increase insignificantly, but the propensity to borrow for CapEx during a 12-month window increases substantially due to the tax change announcement. Therefore, the empirical evidence on borrowing patterns around the tax change announcement shows that treated distressed firms

are not more likely to borrow for investment in general upon the tax change announcement, but they do switching from borrowing for making acquisitions to borrowing for internal investment. It rejects the access-to-credit hypothesis and adds support for the financial synergy motivation.

4.2. Risk Shifting

Financial distress can positively relate to investment risk due to agency costs (*risk shifting*; Jensen and Meckling, 1976). Since an acquisition is a type of corporate investment, it is possible that reduction in acquisition upon the tax change announcement is due to the reduction of investment in riskier assets when the tax change announcement relieves financial distress by reducing bankruptcy risk. Acquisitions involve dealing with incorporating business outside of the scope of firms. Even though external investment like acquisitions can diversify the scope of operations, it can be a gambling strategy shifting firm operations to an unfamiliar business environment. The alternative hypothesis based on risk-shifting argument may explain the causal results from the triple-difference analyses on acquisitions.

I directly check the assumption that distressed firms make acquisitions add to firm risk. I use monthly estimations of asset volatility and estimated default probability generated with Distance-to-Default variable. Figure 5 plots the monthly estimation of asset volatility and estimated default probability around deal announcement months. I split deals into diversifying acquisitions and horizontal acquisitions based on 3-digit SICs and firms according to their Distance-to-Default in the month prior to announcement. Asset volatility increases when distressed firms making acquisitions but drop in the long term. Since distressed firms tend to make more diversifying acquisitions, the evidence that distressed firms making diversifying acquisitions which reduce asset volatility, is not in line with the risk shifting hypothesis.

Moreover, I also check whether firm risk changes due to changes in acquisitions upon the tax change announcement. I proxy for firm risk by option implied volatilities, following Bali and Hovakimian (2009) and Xing et al. (2010). I average the implied volatilities of all call op-

tions for each firm-year observation by either focusing on their last observations or weighting by trading volumes.¹⁵ I also calculate the implied volatilities based on put options, as well as the arithmetic average of call-option and put-option implied volatilities. Table 9 reports the results of triple-difference regressions with implied volatilities as dependent variables using the five-year panel data as in Table 3. I control for firm characteristics and industry and year fixed effects. In Column 1 to 3, the dependent variables are based on the last observations of each eligible options. Firm risk proxied by option-implied volatilities based on call options increases significantly by around 0.02, or 5.6%. The increases of the same magnitude are not significant if I use average or put-option based volatilities. The results are quantitatively and qualitatively similar if I use trading volumes as weights to calculate option-implied volatilities in Column 4 to 6. However, the risk-shifting argument should predict a reduction in firm risk together with a reduction in acquisitions if the acquisitions made by distressed firms are indeed riskier. I observe a marginally significant increase in firm risk for the treated firms after the tax change announcement, which is inconsistent with the alternative hypothesis. The results on the riskiness of firms also imply that distressed firms become riskier by reducing diversifying acquisitions upon a reduction of bankruptcy risk, and by refocusing firm scope via internal investment.

5. Conclusion

This paper looks into acquisition activities made by financially distressed firms and investigates motivations for such acquisitions. I test the financial synergy motivation versus the growth opportunity motivation utilizing a triple-difference framework based on a tax change for syndicated loan creditors in 2012. This tax change exogenously reduces firms' bankruptcy probabilities to the extent of their usage of syndicated loans. I observe a net decrease by around 34% in acquisition activities, for treated distressed firms, from three different sources: total annual cash outflows from acquisitions, major acquisitions announced

¹⁵See Table A.1 for more details.

around the shock, and the claimed use of proceeds when firms obtain new credit. Also, upon the shock, I observe that the size of divestment doubles and that there is no significant change in CapEx or R&D. The results support the financial synergy motivation that a reduction in the need to diversify results in a decrease in acquisitions and refocusing the business scope, while the growth opportunity motivation that predicts an increase in external investment under enhanced financial health.

In a nutshell, distressed firms make as many acquisitions as non-distressed firms in recent years, and they engage in such acquisitions to diversify bankruptcy risk. The results strongly support the financial synergy motivation and suggest that financial distress distorts corporate investment style towards external expansions.

Appendix A. Variable Definitions

Table A.1

Variable definitions and data sources

Variable name	Definition	Source
<i>Dependent variables</i>		
Acquisition Expenditure (Acq. Ex.)	Acquisition spending (Compustat data item 129) divided by total assets (Compustat data item 6)	Compustat
Capital Expenditure (CapEx)	Capital expenditure (Compustat data item 128) divided by lagged total assets (Compustat data item 6)	Compustat
R&D	The sum of research and development expense and advertising expense (Compustat data item 45 + item 46) divided by lagged total assets (Compustat data item 6). Research and development expense and advertising expense are recorded as zeroes when they are missing.	Compustat
Acquisition Indicator	The indicator whether the firm makes any acquisitions in a given year. I only consider completed deals covered in SDC Platinum with positive deal value over 1% of total assets (Compustat data item 6), require shares acquired or shares sought are over 50%.	SDC, Compustat
Deal Value/Total Assets	Total deal value for acquisitions divided by the value of total assets (Compustat data item 6). The acquisition sample is defined in the definition for the Acquisition Indicator.	SDC, Compustat
Log(Deal Value)	Log transformation of the total deal value of acquisitions. The acquisition sample is defined in the definition for the Acquisition Indicator.	SDC
Number of Acquisition Deals	The number of acquisitions announced in a year by an individual firm. The acquisition sample is defined in the definition for the Acquisition Indicator.	SDC
- Cash Acquisition	Cash Acquisitions are acquisitions paid with any cash. The value of a cash acquisition is the product of the share of payments in cash and the deal value. The acquisition sample is defined in the definition for the Acquisition Indicator. Calculations for specific measures follow those of acquisitions.	SDC, Compustat
- Diversifying Acquisition (Div. Acq.) - Primary SIC	A Diversifying Acquisition based on the Primary SIC is an acquisition where the primary SIC codes of the acquirer and the target do not match. The acquisition sample is defined in the definition for the Acquisition Indicator. Calculations for specific measures follow those of acquisitions.	SDC, Compustat

Table A.1 Continued:

Variable name	Definition	Source
- Diversifying Acquisition (Div. Acq.) - All SICs	A Diversifying Acquisition based on all SICs is an acquisition where the all SIC codes of the acquirer and the target do not overlap. The acquisition sample is defined in the definition for the Acquisition Indicator. Calculations for specific measures follow those of acquisitions.	SDC, Compustat
- Divestiture (Divest.)	Divestitures with positive value announced in a year by an individual firm. Calculations for specific measures follow those of acquisitions.	SDC, Compustat
Loan Purposes	I require the syndicated loans with non-missing maturity and facility amount information and syndicated in the U.S., and drop cancelled, rumored, or suspended loans.	Dealscan, Compustat
- Acquisition	Acquisition-related purposes include “Acquis. line”, “LBO”, “Merger”, and “Takeover” in the primary purpose field.	Dealscan
- CapEx	CapEx-related purposes include “Capital expend.”, “Corp. purposes”, and “Proj. finance” in the primary purpose field.	Dealscan
- Investment	Syndicated loans started by a firm in a given period with either acquisition-related or CapEx-related purposes.	Dealscan
Loan Indicator	The indicator whether a firm starts any syndicated loans in a given period with a certain type of purposes.	Dealscan
Loan Size/Total Assets	Total amount of syndicated loans divided by the value of total assets (Compustat data item 6). The syndicated loan sample is defined in the definition for Loan Purposes.	Dealscan, Compustat
Log(Loan Size)	Log transformation of the total amount of syndicated loans. The syndicated loan sample is defined in the definition for Loan Purposes.	Dealscan
Number of Loans	The number of of syndicated loan facilities started in a given period. The syndicated loan sample is defined in the definition for Loan Purposes.	Dealscan

Table A.1 Continued:

Variable name	Definition	Source
Option-Implied Volatility - Last Observations (Average, Call, or Put)	Option-implied volatility for calculated at each fiscal year end based on the last observations of each call options or put options during the year. I require the stock options with expiration dates in at least 10 days but no more than one year, with positive open interest, with positive best bid price, with non-missing expiration dates and implied volatilities. I delete options with bid-ask spreads more than 50% of the average of bid and ask prices. I only retain near-the-money options with absolute values of the natural log of the ratio of the stock daily close prices to the strike price less than 0.1. I average the implied volatilities across all last annual observations for each eligible call or put options for a stock for Call Option-Implied Volatility or Put Option-Implied Volatility. The Average Option-Implied Volatility is the arithmetic mean of the Call and Put Option-Implied Volatilities.	OptionMetrics
Option-Implied Volatility - Volume Weighted (Average, Call, or Put)	Option-implied volatility for calculated at each fiscal year end based on the all the observations for call options or put options during the year weighted by trading volumes. The selection of eligible options follows that of Option-Implied Volatility based on last observations. I average the implied volatilities weighted by the trading volumes across all daily observations for eligible call or put options for Call Option-Implied Volatility or Put Option-Implied Volatility.	OptionMetrics
<i>Independent variables</i>		
PostTD	An indicator whether an observation is after the time of the tax change announcement on September 12, 2012. In Table 3 and Table 9, the indicator is whether the fiscal year of the annual observation is 2013 or later. In Table 6, the indicator equals one when the acquisition is announced after September of 2012, and zero when announced before September of 2012. In Table 8 and Table 7, the indicator equals one when the loan is started after September of 2012, and zero when started before September of 2012.	
Altman's Z-score	The sum of $[3.3 \times \text{pretax income (Compustat data item 172 + item 15 + item 16)} + 1.4 \times \text{retained earnings (item 36)} + 1.2 \times \text{working capital (item 4 - item 5)} + \text{sales (item 12)}] / \text{book assets (item 6)} + 0.6 \times \text{market capitalization} / \text{total liabilities (item 181)}$. Market capitalization is calculated based on CRSP monthly data of prices and shares outstanding matched to the months of fiscal year ends. Each component variable is winsorized at the 1-99% level.	Compustat, CRSP

Table A.1 Continued:

Variable name	Definition	Source
Distance-to-Default	The number of standard deviations of assets between the market value of total assets and the default point. The calculation follows Bharath and Shumway (2008).	Compustat, CRSP
Syndicated Loan Ratio	The sum of facility amount for all outstanding syndicated loans divided by total assets. The sample of eligible syndicated loans includes all loans in Dealscan with non-missing maturity and facility amount information and syndicated in the U.S., and excludes cancelled, rumored, or suspended loans. This ratio is replaced with one if it is larger than one.	Compustat, Dealscan
HighSynd	An indicator whether Syndicated-Loan-to-Debt ratio is in the upper half.	Compustat, Dealscan
HighDistress	An indicator whether Altman's Z-score is smaller than 1.9.	Compustat, CRSP
<i>Control variables</i>		
Leverage	The ratio of the value of debt divided by the market value of total assets. The value of debt in current liabilities (Compustat data item 34), long-term debt (item 142), and preferred stock (item 130). The market value of total assets is the value of debt plus market capitalization. Market capitalization is calculated based on CRSP monthly data of prices and shares outstanding matched to the months of fiscal year ends.	Compustat, CRSP
Log Assets	The log transformation of total assets (Compustat data item 6). In Table 1, total assets is the value (item 6) in billion dollars.	Compustat
Return on Assets	The ratio of pretax net income (Compustat data item 172 + item 15) divided by total assets (item 6)	Compustat
M/B	The ratio of the sum of market capitalization plus the book value of debt (Compustat data item 6 - item 60) divided by total assets (item 6). Market capitalization is calculated based on CRSP monthly data of prices and shares outstanding matched to the months of fiscal year ends.	Compustat, CRSP
Cash Flow	The ratio of income before extraordinary items plus depreciation and amortization (Compustat data item EBITDA) divided by start-of-period total assets (item 6)	Compustat
Tangibility	The ratio of net property, plant and equipment (Compustat data item 8) divided by total assets (item 6)	Compustat
Term Premium	The monthly difference between the yield on 10-year U.S. Treasury bonds and 2-year U.S. Treasury notes matched to the months of the fiscal year ends.	FRED Economic Data, Federal Reserve Bank of St. Louis

Table A.1 Continued:

Variable name	Definition	Source
Industry FE	Fama-French 12-industry fixed effects. In Table 8, the fixed effects are based on Fama-French 5-industry classifications.	Ken French's Data Library
Credit Rating FE	A fixed effects based on the Standard & Poor's credit rating for the long-term debt, indicating investment grade, non-investment grade, and not-rated.	Compustat

References

- Altman, E.I., 2013. Predicting financial distress of companies: Revisiting the Z-score and ZETA models, In: *Handbook of Research Methods and Applications in Empirical Finance*. Edward Elgar Publishing, vol. 53, July, pp. 428–456.
- Andrade, G., Kaplan, S.N., 1998. How Costly is Financial (Not Economic) Distress? Evidence from Highly Leveraged Transactions that Became Distressed. *Journal of Finance* 53, 1443–1493.
- Bali, T.G., Hovakimian, A., 2009. Volatility spreads and expected stock returns. *Management Science* 55, 1797–1812.
- Bharath, S.T., Shumway, T., 2008. Forecasting default with the Merton distance to default model. *Review of Financial Studies* 21, 1339–1369.
- Billett, M.T., King, T.H.D., Mauer, D.C., 2004. Bondholder wealth effects in mergers and acquisitions: New evidence from the 1980s and 1990s. *Journal of Finance* 59, 107–135.
- Campello, M., Ladika, T., Matta, R., 2016. Debt restructuring costs and firm bankruptcy : Evidence from CDS spreads. Unpublished working paper, Cornell University, Ithaca.
- Chava, S., Roberts, M.R., 2008. How does financing impact investment? The role of debt covenants. *Journal of Finance* 63, 2085–2121.
- Chen, N.F., 1991. Financial investment opportunities and the macroeconomy. *Journal of Finance* 46, 529–554.
- Clark, K., Ofek, E., 1994. Mergers as a means of restructuring distressed firms: An empirical investigation. *Journal of Financial and Quantitative Analysis* 29, 541–565.
- Graham, J.R., Lemmon, M.L., Wolf, J.G., 2002. Does Corporate Diversification Destroy Value? *Journal of Finance* 57, 695–720.
- Grinyer, P.H., Mayes, D., McKiernan, P., 1990. The sharpbenders: Achieving a sustained improvement in performance. *Long Range Planning* 23, 116–125.
- Higgins, R.C., Schall, L.D., 1975. Corporate bankruptcy and conglomerate merger. *Journal of Finance* 30, 93–113.
- Hotchkiss, E.S., Mooradian, R.M., 1998. Acquisitions as a means of restructuring firms in chapter 11. *Journal of Financial Intermediation* 7, 240–262.
- Hubbard, R.G., Palia, D., 1999. A reexamination of the conglomerate merger wave in the 1960s: An internal capital markets view. *Journal of Finance* 54, 1131–1152.
- Ingersoll, Jr., J.E., Ross, S.A., 1992. Waiting to invest: Investment and uncertainty. *Journal of Business* 65, 1.
- Iyer, D.N., Miller, K.D., 2008. Performance feedback, slack, and the timing of acquisitions. *Academy of Management Journal* 51, 808–822.
- Jensen, M.C., 1986. Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review* 76, 323–329.
- Jensen, M.C., Meckling, W.H., 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3, 305–360.
- Levy, H., Sarnat, M., 1970. Diversification, portfolio analysis and the uneasy case for conglom-

erate mergers. *Journal of Finance* 25, 795–802.

Lewellen, W.G., 1971. A Pure Financial Rationale For The Conglomerate Merger. *Journal of Finance* 26, 521–537.

Mandarino, J.C., 2010. The tax effects of debt cancellation—a primer for non-tax lawyers. *Probate & Property Magazine* 24.

McCardle, K.F., Viswanathan, S., 1994. The direct entry versus takeover decision and stock price performance around takeovers. *Journal of Business* 67, 1–43.

Meier, J.-M.A., Servaes, H., 2015. The bright side of gridlock. ECGI - finance working paper 435/2014.

Merton, R.C., 1974. On the pricing of corporate debt: The risk structure of interest rates. *Journal of Finance* 29, 449–470.

Moeller, S.B., Schlingemann, F.P., Stulz, R.M., 2004. Firm size and the gains from acquisitions. *Journal of Financial Economics* 73, 201–228.

Myers, S.C., 2003. Financing of corporations, In: Constantinides, G.M., Harris, M., Stulz, R.M. (eds.), *Handbook of the Economics of Finance*. Elsevier, vol. 1, Part A, chap. 4, pp. 215–253.

Myers, S.C., 1977. Determinants of corporate borrowing. *Journal of Financial Economics* 5, 147–175.

Park, C., 2003. Prior performance characteristics of related and unrelated acquirers. *Strategic Management Journal* 24, 471–480.

Pearce II, J.A., Robbins, K., 1993. Toward improve theory and research on business turnaround. *Journal of Management* 19, 613–636.

Petersen, M.A., 2009. Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies* 22, 435–480.

Rhodes-Kropf, M., Viswanathan, S., 2000. Corporate reorganizations and non-cash auctions. *Journal of Finance* 55, 1807–1849.

Rubinstein, M.E., 1973. A meanvariance synthesis of corporate financial theory. *Journal of Finance* 28, 167–181.

Scarborough, R., Caracristi, D., 2012. Tax issues in consensual debt restructuring. *Derivatives & Financial Instruments, Journals IBFD* 14, 61–68.

Schwartz, S., 1984. An empirical test of a managerial, life-cycle, and cost of capital model of merger activity. *Journal of Industrial Economics* 32, 265–276.

Trahms, C.a., Ndofor, H.a., Sirmon, D.G., 2013. Organizational Decline and Turnaround: A Review and Agenda for Future Research. *Journal of Management* 39, 1277–1307.

Vassalou, M., Xing, Y., 2004. Default risk in equity returns. *Journal of Finance* 59, 831–868.

Xing, Y., Zhang, X., Zhao, R., 2010. What does the individual option volatility smirk tell us about future equity returns? *Journal of Financial and Quantitative Analysis* 45, 641–662.

Table 1
Summary Statistics

The table describes characteristics for sample firms in main analyses. The sample consists Compustat/CRSP firms with year-beginning total assets over \$100 million (adjusted according to the CPI to 2012 dollars) between 2010 and 2014. Financial firms and utility firms are excluded. Altman's Z-Score Sample includes firms with Altman's Z-Score < 1.9 (Distressed) or > 2.8 (Non-Distressed). Firms with Z-Score between 1.9 and 2.8 are dropped. Distance-to-Default Sample includes firms in the bottom tercile (Distressed) and the upper tercile (Non-Distressed) of Syndicated Loan Ratio. Firms with Distance-to-Default in the middle tercile are dropped. Altman's Z-Score is the sum of $[3.3 \times \text{pretax income (Compustat data item 172 + item 15 + item 16)} + 1.4 \times \text{retained earnings (item 36)} + 1.2 \times \text{working capital (item 4 - item 5)} + \text{sales (item 12)}] / \text{book assets (item 6)} + 0.6 \times \text{market capitalization / total liabilities (item 181)}$. Distance-to-Default is estimated by Merton's model at the end of fiscal year, following Vassalou and Xing (2004) and Bharath and Shumway (2008). Syndicated Loan Ratio is the sum of principal amount of all syndicated loan outstanding at the end of the fiscal year, divided by total assets at the beginning of the fiscal year (lagged total assets). Cash Outflow on Acq. is a cashflow statement item (Compustat data item 129), divided by total assets (item 6) at the year beginning. Acq. Dummy indicates the firm announces at least one acquisitions during the year. Acq. Value is the sum of all acquisitions announced during the year divided by lagged total assets. If the acquirer and the target do not share the same 3-digit SIC code, the deal is a diversifying acquisition. Divestitures Value is the sum of all divestitures announced during the year divided by lagged Total Assets. Only completed deals with deal value over 1% of Lagged total assets are considered. Log Total Assets is log transformation of total assets (Compustat item 6) in 2012 dollars. Leverage is the sum of current liabilities (item 34) and long-term debt (item 142), divided by total assets (item 6). Liquidity is cash holding divided by total assets. Market-to-Book is the ratio of the sum of market capitalization plus the book value of debt (Compustat data item 6 - item 60) divided by total assets (item 6). ROA is the ratio of pretax net income (Compustat data item 172 + item 15) divided by total assets (item 6). See Table A.1 for further details of variable definitions. All variables are winsorized at 1-99% levels.

	Altman's Z-Score Sample						Distance-to-Default Sample					
	N	Mean	Std. Dev.	P25	Median	P75	N	Mean	Std. Dev.	P25	Median	P75
Altman's Z-Score	8390	4.099	(4.112)	1.579	3.376	5.179	5105	3.321	(2.936)	1.547	2.816	4.411
Distance-to-Default	5954	6.748	(5.359)	2.906	5.700	9.558	5030	6.935	(5.950)	2.318	5.648	10.404
Syndicated Loan Ratio	8550	0.211	(0.362)	0.000	0.000	0.296	5502	0.216	(0.346)	0.000	0.032	0.311
Cash Outflow on Acq.	8194	0.034	(0.090)	0.000	0.000	0.019	5172	0.034	(0.091)	0.000	0.000	0.019
Acq. Dummy	8550	0.170	(0.376)	0.000	0.000	0.000	5502	0.178	(0.383)	0.000	0.000	0.000
Acq. Value	8550	0.029	(0.099)	0.000	0.000	0.000	5502	0.029	(0.100)	0.000	0.000	0.000
Diversifying Acq. Value	8550	0.016	(0.065)	0.000	0.000	0.000	5502	0.016	(0.066)	0.000	0.000	0.000
Divestiture Value	8550	0.005	(0.027)	0.000	0.000	0.000	5502	0.006	(0.029)	0.000	0.000	0.000
Log Total Assets	8550	7.184	(1.608)	5.902	6.962	8.200	5502	7.570	(1.728)	6.180	7.427	8.676
Leverage	8531	0.212	(0.204)	0.025	0.173	0.329	5482	0.260	(0.206)	0.096	0.226	0.381
Liquidity	8550	0.191	(0.187)	0.052	0.130	0.267	5502	0.148	(0.146)	0.044	0.103	0.204
Market-to-Book	8548	1.896	(1.195)	1.133	1.514	2.203	5499	1.782	(1.067)	1.095	1.460	2.086
ROA	8420	0.043	(0.110)	0.017	0.059	0.097	5331	0.045	(0.101)	0.020	0.059	0.094

Table 2**Balancing Check of Acquisitions Prior to Tax Change Announcement**

The table describes pre-tax-change acquisition activities for sample firms in main analyses. The observations are cross-sectional at the firm level, consisting Compustat/CRSP firms with year-beginning Total Assets over \$100 million (adjusted according to the CPI to 2012 dollars) at the end of the most recent fiscal year prior to September 2012. Financial firms and utility firms are excluded. The data is sorted into 4 groups based on firm Distress and Syndicated Loan Ratio. High Syndicated Loan sample includes firms with Syndicated Loan Ratio above median, and Low Syndicated Loan sample below median. In Panel A, Distressed subsample is the bottom tercile of Distance-to-Default, and Non-Distressed firms are in the upper tercile of Distance-to-Default. In Panel B, Distressed firms have Altman's Z-Score < 1.9, and Non-Distressed firms have Altman's Z-Score > 2.8. Cash Outflow on Acq. is a cashflow statement item (Compustat data item 129), divided by Total Assets (Compustat data item 6) at the year beginning. Acq. Value is the sum of all acquisitions announced during the year divided by lagged total assets. If the acquirer and the target do not share the same 3-digit SIC code, the deal is a diversifying acquisition. Divestitures Value is the sum of all divestitures announced during the year divided by lagged Total Assets. Only completed deals with deal value over 1% of Lagged total assets are considered. Other variables are defined in Table A.1. All variables are winsorized at 1-99% levels.

Panel A. Distressed Variable Based on Distance-to-Default

	Variable	High Syndicated Loans Ratios			Low Syndicated Loans Ratios			High Syndicated – Low Syndicated	
		N	Mean	Std. Dev.	N	Mean	Std. Dev.	Mean Diff.	<i>t</i> -stat
Distressed (Bottom Tercile)	Cash Outflow on Acq.	241	0.059	(0.13)	285	0.016	(0.059)	0.043***	(4.79)
	Acq. Value	248	0.06	(0.166)	305	0.015	(0.073)	0.045***	(3.95)
	Diversifying Acq. Value	248	0.032	(0.108)	305	0.007	(0.046)	0.025***	(3.42)
	Divesiture Value	248	0.003	(0.015)	305	0.002	(0.012)	0.001	(1.01)
Non-Distressed (Upper Tercile)	Cash Outflow on Acq.	298	0.046	(0.09)	245	0.033	(0.072)	0.013	(1.86)
	Acq. Value	324	0.042	(0.114)	255	0.029	(0.081)	0.013	(1.64)
	Diversifying Acq. Value	324	0.029	(0.078)	255	0.013	(0.047)	0.015***	(2.92)
	Divesiture Value	324	0.004	(0.017)	255	0.002	(0.013)	0.002	(1.21)
Distressed – Non-Distressed			Mean Diff.	<i>t</i> -stat		Mean Diff.	<i>t</i> -stat		
	Cash Outflow on Acq.		0.013	(1.34)		-0.017***	(-3.01)		
	Acq. Value		0.018	(1.46)		-0.014**	(-2.07)		
	Diversifying Acq. Value		0.003	(0.37)		-0.007	(-1.68)		
	Divesiture Value		-0.001	(-0.44)		0	(-0.23)		

Panel B. Distressed Variable Based on Altman's Z-Score

	Variable	High Syndicated Loans Ratios			Low Syndicated Loans Ratios			High Syndicated – Low Syndicated	
		N	Mean	Std. Dev.	N	Mean	Std. Dev.	Mean Diff.	t-stat
Distressed (Z-Score < 1.9)	Cash Outflow on Acq.	272	0.056	(0.125)	368	0.021	(0.070)	0.036***	(4.25)
	Acq. Value	286	0.063	(0.170)	386	0.022	(0.096)	0.041***	(3.67)
	Diversifying Acq. Value	286	0.030	(0.104)	386	0.011	(0.065)	0.019***	(2.72)
	Divesiture Value	286	0.004	(0.018)	386	0.002	(0.014)	0.002	(1.52)
Non-Distressed (Z-Score > 2.8)	Cash Outflow on Acq.	487	0.043	(0.085)	634	0.026	(0.065)	0.017***	(3.57)
	Acq. Value	514	0.039	(0.114)	649	0.024	(0.087)	0.015**	(2.39)
	Diversifying Acq. Value	514	0.026	(0.083)	649	0.010	(0.049)	0.016***	(3.77)
	Divesiture Value	514	0.003	(0.017)	649	0.002	(0.012)	0.002*	(1.95)
Distressed – Non-Distressed			Mean Diff.	t-stat		Mean Diff.	t-stat		
	Cash Outflow on Acq.		0.014	(1.61)		-0.005	(-1.19)		
	Acq. Value		0.024**	(2.15)		-0.002	(-0.39)		
	Diversifying Acq. Value		0.005	(0.63)		0.001	(0.27)		
	Divesiture Value		0.001	(0.75)		0.001	(0.86)		

Table 3**Triple-Difference Regression Analysis of Acquisitions, Capital Expenditures, and R&D Around Tax Change Announcement in 2012**

This table presents triple-difference regression results of acquisition and other investment expenditures between 2010 and 2014. This panel data include all firms with total assets over \$100 million (in 2012 dollars) at the beginning of fiscal years. Financial and utility industry are excluded. In Panel A, Distressed indicates that the firm's Distance-to-Default in August 2012 is in the top tercile. Firms in the middle tercile are omitted. In Panel B, Distressed indicates that the firm's Altman's Z-Score in the last fiscal year end prior to September 2012 is below 1.9. Firms with Z-Score between 1.9 and 2.8 are omitted. High Syndicated Loan sample includes firms with pre-existing Syndicated Loan Ratio above median. Loan facilities starting before September 2012 and ending after September 2012 are considered when calculating pre-existing Syndicated Loan Ratio. PostTaxChange takes 1 if the fiscal year is 2012 or later. Log Total Assets is log transformation of total assets (Compustat dataitem 6) in 2012 dollars. Leverage is the sum of current liabilities (item 34) and long-term debt (item 142), divided by total assets (item 6). Liquidity is cash holding divided by total assets. Market-to-Book is the ratio of the sum of market capitalization plus the book value of debt (item 6 - item 60) divided by total assets (item 6). ROA is the ratio of pretax net income (item 172 + item 15) divided by total assets (item 6). Cash Flow is the ratio of income before extraordinary items (item 18) plus depreciation and amortization (item 14) divided by start-of-period total assets (item 6). Tangibility is the ratio of PPE (item 8) divided by total assets (item 6). Term Premium is the difference between the yield on 10-year U.S. Treasury bonds and 2-year U.S. Treasury notes matched to the months of the fiscal year ends. Credit Rating fixed effects control for 23 level of firms long-term credit ratings from Standard & Poors (including a fixed effect for unrated firms). Industry fixed effects are at 4-digit SIC level. Please see Table A.1 for further information on variable definitions. *t*-statistics are based on robust standard errors clustered at the firm level. *, **, and *** represent statistical significance at 10%, 5%, and 1% levels.

Panel A. Distressed Variable Indicating Pre-Tax-Change Distance-to-Default in Bottom Tercile

	Cash Outflow on Acquisitions				CapEx		R&D	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Distressed	-0.003 (-0.62)	0.007 (1.32)	0.006 (1.10)		0.027*** (5.12)		-0.011*** (-2.82)	
HighSynd	0.017*** (2.87)	0.030*** (4.74)	0.029*** (4.45)		-0.002 (-0.56)		-0.004 (-1.08)	
Distressed×HighSynd	0.009 (1.01)	0.006 (0.67)	-0.001 (-0.06)		-0.013** (-2.09)		0.008* (1.77)	
Distressed×PostTaxChange	-0.011* (-1.89)	-0.009 (-1.55)	-0.009 (-1.57)	-0.006 (-0.90)	-0.010** (-2.41)	-0.010*** (-2.74)	0.002 (0.84)	-0.003** (-2.02)
HighSynd×PostTaxChange	-0.000 (-0.01)	-0.002 (-0.30)	-0.002 (-0.33)	-0.002 (-0.29)	0.003 (1.10)	0.003 (1.10)	-0.003 (-1.37)	-0.003*** (-2.91)
Distressed×HighSynd×PostTaxChange	-0.019* (-1.77)	-0.019* (-1.76)	-0.019* (-1.78)	-0.021* (-1.92)	0.006 (1.14)	0.005 (0.95)	0.003 (1.05)	0.006*** (3.65)
Log Total Assets		-0.006*** (-5.85)	-0.006*** (-4.09)	-0.062*** (-5.83)	-0.002 (-1.24)	-0.019*** (-3.31)	-0.002* (-1.89)	-0.006*** (-3.01)
Leverage		-0.021* (-1.82)	-0.026** (-2.25)	-0.129*** (-4.09)	-0.048*** (-5.63)	-0.065*** (-4.53)	-0.008 (-1.15)	-0.003 (-0.49)
Liquidity		0.052*** (2.73)	0.053*** (2.76)	0.333*** (7.36)	0.040*** (3.62)	0.046*** (3.25)	0.058*** (5.12)	-0.003 (-0.45)
Market-to-Book		0.003 (1.34)	0.003 (1.49)	0.012*** (2.82)	0.012*** (6.91)	0.011*** (5.53)	0.014*** (8.37)	0.004*** (3.49)
ROA		0.089*** (5.34)	0.087*** (5.26)	0.060*** (2.91)	0.026** (2.19)	0.023** (2.12)	-0.066*** (-6.22)	-0.011 (-1.64)
Cash Flow		-0.039*** (-3.04)	-0.042*** (-3.21)	-0.075*** (-3.27)	0.060*** (4.84)	0.032*** (2.97)	-0.068*** (-6.63)	-0.012* (-1.88)
Tangibility		-0.045*** (-3.69)	-0.041*** (-3.40)	0.091** (2.09)	0.134*** (11.33)	-0.103*** (-3.75)	-0.012 (-1.50)	0.010* (1.66)
Term Premium		-0.002 (-0.21)	-0.001 (-0.18)	-0.002 (-0.41)	0.001 (0.37)	0.000 (0.17)	0.001 (0.77)	0.001* (1.78)
Firm FE	No	No	No	Yes	No	Yes	No	Yes
Credit Rating FE	No	No	Yes	No	Yes	No	Yes	No
Industry FE	Yes	Yes	Yes	No	Yes	No	Yes	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5172	4991	4991	4991	5307	5307	5314	5314
Adjusted R^2	0.065	0.090	0.095	0.125	0.485	0.134	0.639	0.056

Panel B. Distressed Variable Indicating Pre-Tax-Change Altman's Z-Score < 1.9

	Cash Outflow on Acquisitions				CapEx		R&D	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Distressed	-0.001 (-0.22)	0.009** (2.10)	0.009** (2.19)		0.013*** (3.07)		0.003 (0.80)	
HighSynd	0.016*** (4.33)	0.023*** (5.58)	0.022*** (5.22)		0.002 (0.73)		0.003 (1.05)	
Distressed×HighSynd	0.012 (1.58)	0.009 (1.20)	0.003 (0.36)		-0.011* (-1.96)		-0.007 (-1.60)	
Distressed×PostTaxChange	-0.011** (-2.39)	-0.008* (-1.86)	-0.008* (-1.82)	-0.012** (-2.58)	-0.013*** (-3.31)	-0.013*** (-3.87)	0.000 (0.02)	-0.003 (-1.55)
HighSynd×PostTaxChange	0.005 (0.97)	0.003 (0.65)	0.004 (0.74)	0.002 (0.37)	0.000 (0.11)	0.001 (0.46)	-0.004** (-2.33)	-0.001 (-1.57)
Distressed×HighSynd×PostTaxChange	-0.022** (-2.44)	-0.021** (-2.36)	-0.022** (-2.46)	-0.019** (-2.11)	0.012** (2.33)	0.011** (2.34)	0.001 (0.54)	0.003* (1.85)
Log Total Assets		-0.004*** (-4.85)	-0.003*** (-3.05)	-0.051*** (-7.21)	-0.004*** (-3.06)	-0.018*** (-4.42)	-0.003*** (-3.71)	-0.015*** (-7.64)
Leverage		-0.015* (-1.95)	-0.025*** (-2.99)	-0.133*** (-5.69)	-0.040*** (-5.77)	-0.064*** (-5.62)	-0.014** (-2.09)	-0.002 (-0.38)
Liquidity		-0.003 (-0.30)	-0.002 (-0.16)	0.257*** (9.28)	0.013** (2.21)	0.017* (1.85)	0.056*** (6.89)	-0.003 (-0.60)
Market-to-Book		0.004*** (3.29)	0.005*** (3.61)	0.006*** (2.95)	0.010*** (8.41)	0.009*** (7.28)	0.013*** (11.04)	0.004*** (3.75)
ROA		0.072*** (6.75)	0.070*** (6.58)	0.057*** (4.08)	0.007 (0.73)	0.017** (2.11)	-0.084*** (-9.29)	-0.011** (-2.25)
Cash Flow		-0.025*** (-2.91)	-0.027*** (-3.07)	-0.056*** (-3.92)	0.056*** (5.85)	0.033*** (3.59)	-0.064*** (-6.65)	-0.014** (-2.30)
Tangibility		-0.035*** (-4.25)	-0.032*** (-3.88)	0.101*** (3.25)	0.135*** (13.48)	-0.086*** (-3.81)	-0.012* (-1.67)	0.011* (1.95)
Term Premium		0.005 (0.91)	0.006 (0.98)	0.005 (0.91)	0.000 (0.01)	0.001 (0.74)	0.003* (1.72)	0.002** (2.17)
Firm FE	No	No	No	Yes	No	Yes	No	Yes
Credit Rating FE	No	No	Yes	No	Yes	No	Yes	No
Industry FE	Yes	Yes	Yes	No	Yes	No	Yes	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8194	8048	8048	8048	8393	8393	8398	8398
Adjusted R-sq	0.059	0.068	0.074	0.102	0.515	0.103	0.646	0.080

Table 4**Diversifying Acquisitions Around Tax Change Announcement and Alternative Samples for Main Results**

This table presents triple-difference regression results of acquisition and other investment expenditures between 2010 and 2014. The sample in Column (1)-(4) and (9)-(12) include non-financial and non-utility firms with total assets over \$100 million (in 2012 dollars) at the beginning of fiscal years. The sample in Column (5)-(8) further requires firms to have outstanding syndicated loans at the end of any fiscal years between 2010 and 2014. The sample in Column (9)-(12) also include "Gray-Zone" firms that have pre-Tax-Change Altman's Z-Score between 1.9 and 2.8 for Column (9) and (10), or firms in the middle tercile of pre-Tax-Change Distance-to-Default for Column (11) and (12). Dependent variables in Column (1)-(4) are total value of diversifying acquisitions announced during the year, divided by start-of-period total assets. Diversifying acquisitions are deals where the acquiring firm and the target firm do not share the same 3-digit primary SIC code for Column (1) and (2), or deals where the acquiring firm and the target firm do not share any 4-digit SIC code in their full SIC code lists for Column (3) and (4). Dependent variables in (5)-(12) are Cash Outflow of Acquisitions in Table 3. All regressions include year fixed effects and control variables for firm characteristic. High Syndicated Loan sample includes firms with pre-existing Syndicated Loan Ratio above median. Loan facilities starting before September 2012 and ending after September 2012 are considered when calculating pre-existing Syndicated Loan Ratio. PostTaxChange takes 1 if the fiscal year is 2012 or later. Control variables include Log Total Assets, Leverage, Liquidity, Market-to-Book, ROA, Cash Flow, Tangibility, and Term Premium as defined in Table 3. All control variables are lagged by one year except for Cash Flow and Term Premium. Credit Rating fixed effects control for 23 level of firms long-term credit ratings from Standard & Poors (including a fixed effect for unrated firms). Industry fixed effects are at 4-digit SIC level. Please see Table A.1 for further information on variable definitions. *t*-statistics are based on robust standard errors clustered at the firm level. *, **, and *** represent statistical significance at 10%, 5%, and 1% levels.

	Diversifying Acquisitions				Only Active Syndicated				Including			
	Primary SIC		All SICs		Loan Borrowers				"Gray-Zone" Firms			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Distressed	-0.004 (-0.24)		-0.002 (-0.18)		0.016 (1.13)		-0.020 (-1.27)		0.006 (0.70)		-0.001 (-0.09)	
HighSynd	0.022*** (3.09)		0.015*** (2.88)		0.011** (2.32)		0.007 (0.93)		0.023*** (6.19)		0.027*** (6.02)	
Distressed*HighSynd	0.007 (0.69)		0.004 (0.56)		-0.002 (-0.19)		0.016 (1.48)		0.001 (0.12)		0.002 (0.29)	
Distressed*PostTaxChange	0.012 (0.74)	0.017 (1.01)	0.015 (1.28)	0.022** (1.98)	0.006 (0.36)	0.009 (0.59)	0.024 (1.40)	0.020 (1.16)	0.011 (0.97)	0.004 (0.35)	0.014 (1.03)	0.015 (1.13)
HighSynd*PostTaxChange	-0.007 (-1.00)	-0.007 (-1.00)	-0.002 (-0.37)	-0.000 (-0.01)	0.007 (1.11)	0.010 (1.51)	0.003 (0.36)	0.006 (0.74)	-0.003 (-0.65)	-0.005 (-1.20)	-0.003 (-0.62)	-0.004 (-0.75)
Distressed*HighSynd*PostTaxChange	-0.018 (-1.58)	-0.024** (-2.12)	-0.015* (-1.86)	-0.021*** (-2.59)	-0.018 (-1.56)	-0.024** (-2.11)	-0.025** (-2.02)	-0.022* (-1.78)	-0.016* (-1.90)	-0.014 (-1.64)	-0.019* (-1.95)	-0.021** (-2.19)
Distress Measure	Distance-to-Default				Altman's Z-Score				Distance-to-Default			
Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Credit Rating FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5314	5314	5314	5314	5489	5489	3885	3885	9905	9905	7610	7610
Adjusted R-sq	0.050	0.097	0.063	0.057	0.094	0.163	0.112	0.186	0.070	0.119	0.090	0.140

Table 5**Two-Period Analysis of Diversifying Acquisitions Announced Around Tax Change Announcement**

This table presents triple-difference regressions of acquisition and divestiture intensities in the 12-month periods prior and after Tax Change Announcement for firms that have access to syndicated loan credit. The firm sample includes non-financial and non-utility firms with start-of-period total assets over \$100 million (in 2012 dollars). Every firm has two observations, one each for the 12-month period before and 12-month period after the Tax Change announcement (September 2012 is excluded). Dependent variables are total deal value of completed diversifying acquisitions announced by firms in the 12-month periods, standardized by total assets at the end of previous fiscal years. Diversifying acquisitions are deals where the acquiring firm and the target firm do not share the same 3-digit primary SIC code for Column (1)-(4), or deals where the acquiring firm and the target firm do not share any 4-digit SIC code in their full SIC code lists for Column (5)-(8). Distressed firms are in the bottom tercile of pre-tax-change-announcement in Colum (1)-(3) and (5)-(7), in contrast to Non-Distressed firms in the upper tercile. Firms in the middle tercile are dropped. Distressed firms have pre-tax-change-announcement Altman's Z-Score below 1.9 in Colum (4) and (8), in contrast to Non-Distressed firms pre-tax-change-announcement Altman's Z-Score above 2.8. Firms with Altman's Z-Score between 1.9 and 2.8 are dropped. High Syndicated Loan sample includes firms with pre-existing Syndicated Loan Ratio above median. Loan facilities starting before September 2012 and ending after September 2012 syndicated in the U.S. are considered when calculating pre-existing Syndicated Loan Ratio. PostTaxChange takes 1 for the 12-month periods after September 2012. Log Total Assets is log transformation of total assets (Compustat item 6) in 2012 dollars. Leverage is the sum of current liabilities (item 34) and long-term debt (item 142), divided by total assets (item 6). Liquidity is cash holding divided by total assets. Market-to-Book is the ratio of the sum of market capitalization plus the book value of debt (item 6 - item 60) divided by total assets (item 6). ROA is the ratio of pretax net income (item 172 + item 15) divided by total assets (item 6). Cash Flow is the ratio of income before extraordinary items (item 18) plus depreciation and amortization (item 14) divided by start-of-period total assets (item 6). Tangibility is the ratio of PPE (item 8) divided by total assets (item 6). Term Premium is the difference between the yield on 10-year U.S. Treasury bonds and 2-year U.S. Treasury notes matched to the months of the fiscal year ends. All control variables are lagged by one year except for Cash Flow and Term Premium. All regressions include year fixed effects. Credit Rating fixed effects control for 23 level of firms long-term credit ratings from Standard & Poors (including a fixed effect for unrated firms). Industry fixed effects are at 4-digit SIC level. Variables are defined in Table A.1. *t*-statistics are based on heteroskedasticity-robust standard errors clustered at the firm level. *, **, and *** represent statistical significance at 10%, 5%, and 1% levels.

	Diversifying Acquisitions Based on Primary 3-digit SIC				Diversifying Acquisitions Based on All SICs			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	PostTaxChange	-0.017 (-0.36)	-0.001 (-0.10)	0.001 (0.07)	0.012 (1.48)	-0.023 (-0.79)	-0.007 (-1.18)	-0.001 (-0.18)
Distressed	-0.064* (-1.91)	-0.007 (-1.14)			-0.027 (-1.20)	0.001 (0.28)		
HighSynd	0.035 (0.65)	0.007 (1.02)			-0.021 (-0.64)	-0.006 (-0.91)		
Distressed×HighSynd	0.043 (0.68)	0.008 (0.89)			0.069 (1.64)	0.021 (1.34)		
Distressed×PostTaxChange	-0.002 (-0.04)	0.005 (0.66)	0.002 (0.25)	0.006 (1.14)	0.026 (0.83)	0.011** (2.03)	0.005 (0.93)	-0.002 (-0.51)
HighSynd×PostTaxChange	0.056 (0.91)	0.010 (1.15)	0.001 (0.14)	-0.007 (-1.04)	0.057 (1.53)	0.016** (2.17)	0.010* (1.85)	-0.004 (-0.74)
Distressed×HighSynd×PostTaxChange	-0.119 (-1.64)	-0.026** (-2.32)	-0.020* (-1.70)	-0.005 (-0.53)	-0.112** (-2.40)	-0.035*** (-2.93)	-0.032** (-2.43)	-0.009 (-0.89)
Log Total Assets	0.009 (1.00)	-0.000 (-0.09)	0.001 (0.37)	0.003 (0.91)	0.004 (0.72)	-0.000 (-0.20)	-0.002 (-0.36)	0.010 (1.10)
Leverage	0.032 (0.52)	0.005 (0.46)	-0.036 (-1.10)	-0.038 (-1.07)	0.022 (0.49)	-0.003 (-0.28)	0.020 (0.68)	-0.051 (-1.18)
Liquidity	-0.094 (-0.81)	-0.009 (-0.54)	-0.097** (-2.11)	-0.026 (-0.92)	-0.029 (-0.44)	-0.009 (-0.49)	-0.025 (-1.15)	-0.058 (-1.06)
Market-to-Book	-0.007 (-0.59)	0.002 (0.69)	0.016** (1.99)	0.009** (2.45)	0.002 (0.24)	0.003 (1.02)	0.010 (0.88)	0.003 (0.95)
ROA	-0.031 (-0.36)	-0.010 (-0.59)	-0.035 (-0.87)	-0.027 (-1.14)	0.008 (0.12)	-0.006 (-0.42)	0.001 (0.04)	-0.032 (-1.52)
Cash Flow	0.184*** (2.76)	0.032*** (3.04)	0.009 (0.33)	-0.005 (-0.33)	0.103** (2.05)	0.018* (1.93)	0.006 (0.27)	-0.011 (-1.32)
Tangibility	-0.256*** (-3.22)	-0.026** (-2.07)	0.043 (0.91)	-0.007 (-0.28)	-0.130** (-2.08)	-0.013 (-0.90)	0.102 (1.18)	-0.068 (-1.01)
Term Premium	0.024 (0.21)	0.012 (0.71)	-0.002 (-0.04)	0.041 (1.26)	-0.009 (-0.12)	-0.010 (-0.72)	-0.006 (-0.25)	0.004 (0.21)
Distress Measure	Distance-to-Default				Distance-to-Default			
Firm FE	No	No	Yes	Yes	No	No	Yes	Yes
Credit Rating FE	Yes	Yes	No	No	Yes	Yes	No	No
Industry FE	Yes	Yes	No	No	Yes	Yes	No	No
Adjusted R^2	0.08	0.06	0.03	0.01	0.12	0.01	0.02	0.01
Observations	2224	2224	2224	3497	2224	2224	2224	3497

Table 6**Two-Period Analysis of Acquisitions and Divestitures Announced Around Tax Change Announcement**

This table presents triple-difference regressions of acquisition and divestiture intensities in the 12-month periods prior and after the month of tax change announcement for firms that have access to syndicated loan credit. The firm sample includes non-financial and non-utility firms with start-of-period total assets over \$100 million (in 2012 dollars). Every firm has two observations, one each for the 12-month period before and 12-month period after the Tax Change announcement (September 2012 is excluded). Deal Value is the total deal value of completed acquisitions or divestitures announced by firms in the 12-month periods, standardized by total assets at the end of previous fiscal years. Distressed firms have pre-tax-change-announcement Altman's Z-Score below 1.9, in contrast to Non-Distressed firms pre-tax-change-announcement Altman's Z-Score above 2.8. Firms with Altman's Z-Score between 1.9 and 2.8 are dropped. High Syndicated Loan sample includes firms with pre-existing Syndicated Loan Ratio in the upper tercile. Loan facilities starting before September 2012 and ending after September 2012 syndicated in the U.S. are considered when calculating pre-existing Syndicated Loan Ratio. PostTaxChange takes 1 for the 12-month periods after September 2012. Log Total Assets is log transformation of total assets (Compustat item 6) in 2012 dollars. Leverage is the sum of current liabilities (item 34) and long-term debt (item 142), divided by total assets (item 6). ROA is the ratio of pretax net income (item 172 + item 15) divided by total assets (item 6). Tangibility is the ratio of PPE (item 8) divided by total assets (item 6). Term Premium is the difference between the yield on 10-year U.S. Treasury bonds and 2-year U.S. Treasury notes matched to the months of the fiscal year ends. All control variables are lagged by one year except for Term Premium. Credit Rating fixed effects control for three level of firms long-term credit ratings from Standard & Poors (including investment grade, non-investment grade, and not rated). Industry fixed effects are based on Fama-French 12-industry classification. Variables are defined in Table A.1. *t*-statistics are based on heteroskedasticity-robust standard errors. *, **, and *** represent statistical significance at 10%, 5%, and 1% levels.

<i>Deal Type:</i>	Number of Deals		log(Deal Value)			Deal Value/Total Assets		
	(1) Acq.	(2) Divest	(3) Acq.	(4) Cash Acq.	(5) Divest	(6) Acq.	(7) Cash Acq.	(8) Divest
PostTaxChange	-0.127 (-1.65)	0.115* (1.69)	-0.388 (-1.23)	-0.326 (-1.17)	0.462** (2.41)	-0.011 (-1.63)	-0.009** (-1.98)	0.003** (2.48)
Distressed	-0.016 (-0.19)	0.013 (0.15)	-0.204 (-0.63)	-0.294 (-1.07)	-0.212 (-0.98)	-0.002 (-0.22)	-0.006 (-1.24)	-0.003** (-2.58)
HighSynd	-0.057 (-0.78)	0.016 (0.32)	-0.174 (-0.65)	-0.143 (-0.61)	0.091 (0.82)	0.006 (0.85)	0.004 (0.80)	0.000 (0.04)
Distressed×HighSynd	0.313*** (2.97)	-0.034 (-0.43)	1.461*** (3.64)	1.458*** (4.13)	0.008 (0.04)	0.042*** (3.62)	0.033*** (4.14)	0.001 (0.68)
Distressed×PostTaxChange	0.105 (1.15)	0.057 (0.69)	0.333 (0.89)	0.232 (0.72)	0.026 (0.11)	0.002 (0.31)	0.006 (1.26)	-0.001 (-0.72)
HighSynd×PostTaxChange	0.114 (1.29)	-0.067 (-1.01)	0.419 (1.17)	0.424 (1.33)	-0.345* (-1.85)	0.006 (0.66)	0.007 (1.14)	-0.003** (-1.98)
Distressed×HighSynd×PostTaxChange	-0.279** (-2.14)	0.059 (0.55)	-1.246** (-2.38)	-1.112** (-2.34)	0.381 (1.27)	-0.028* (-1.95)	-0.026** (-2.54)	0.004* (1.84)
Log Total Assets	0.044*** (2.70)	0.135*** (8.84)	0.283*** (4.94)	0.232*** (5.02)	0.248*** (6.46)	0.000 (0.09)	0.001 (1.02)	0.001*** (3.62)
Leverage	-0.340*** (-3.54)	-0.173* (-1.73)	-0.989*** (-2.66)	-0.964*** (-3.18)	0.094 (0.34)	-0.022** (-2.04)	-0.017** (-2.33)	0.003* (1.84)
ROA	-0.002 (-0.01)	-0.690*** (-3.36)	0.354 (0.47)	0.303 (0.45)	-1.255** (-2.43)	-0.001 (-0.04)	-0.003 (-0.15)	-0.012*** (-2.81)
Tangibility	-0.154 (-1.60)	-0.103 (-1.42)	-0.670* (-1.87)	-0.363 (-1.27)	-0.043 (-0.23)	-0.013 (-1.38)	-0.008 (-1.19)	0.000 (0.34)
Term Premium	-0.167* (-1.90)	0.070 (0.76)	-0.593* (-1.77)	-0.323 (-1.08)	0.189 (1.12)	-0.017** (-2.14)	-0.010* (-1.68)	0.001 (0.68)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,212	1,212	1,212	1,212	1,212	1,212	1,212	1,212
Adjusted R^2	0.04	0.16	0.06	0.07	0.11	0.06	0.06	0.07

Table 7**Two-Period Analysis of Use-of-Proceeds Announced Around Tax Change Announcement**

This table presents triple-difference regression results of use-of-proceeds for new syndicated loan credit in the 12-month periods prior and after Tax Change Announcement for firms that have access to syndicated loan credit. The firm sample includes non-financial and non-utility firms with start-of-period total assets over \$100 million (in 2012 dollars). Every firm has two observations, one each for the 12-month period before and 12-month period after the Tax Change announcement (September 2012 is excluded). Loan Size is the total facility amount with a certain type of primary loan purposes. Loan purposes are categorized into investment type and non-investment type (including dividend payout, operational working capital, etc.). Investment type then can be categorized into acquisition (Acq.) and capital expenditure (Capex). Distressed firms have pre-tax-change-announcement Altman's Z-Score below 1.9, in contrast to Non-Distressed firms pre-tax-change-announcement Altman's Z-Score above 2.8. Firms with Altman's Z-Score between 1.9 and 2.8 are dropped. High Syndicated Loan sample includes firms with pre-existing Syndicated Loan Ratio in the upper tercile. Loan facilities starting before September 2012 and ending after September 2012 syndicated in the U.S. are considered when calculating pre-existing Syndicated Loan Ratio. PostTaxChange takes 1 for the 12-month periods after September 2012. Log Total Assets is log transformation of total assets (Compustat item 6) in 2012 dollars. Leverage is the sum of current liabilities (item 34) and long-term debt (item 142), divided by total assets (item 6). ROA is the ratio of pretax net income (item 172 + item 15) divided by total assets (item 6). Tangibility is the ratio of PPE (item 8) divided by total assets (item 6). Term Premium is the difference between the yield on 10-year U.S. Treasury bonds and 2-year U.S. Treasury notes matched to the months of the fiscal year ends. All control variables are lagged by one year except for Term Premium. Credit Rating fixed effects control for three level of firms long-term credit ratings from Standard & Poors (including investment grade, non-investment grade, and not rated). Industry fixed effects are based on Fama-French 12-industry classification. Variables are defined in Table A.1. *t*-statistics are based on heteroskedasticity-robust standard errors. *, **, and *** represent statistical significance at 10%, 5%, and 1% levels.

	Number of Loans		log(Loan Size)		Loan Size/Total Assets	
	(1)	(2)	(3)	(4)	(5)	
<i>Loan Purpose:</i>	Investment	Acq.	Capex	Acq.	Capex	
PostTaxChange	0.031 (0.35)	-0.145 (-0.36)	-0.103 (-0.08)	-0.002 (-0.97)	0.016 (1.51)	
Distressed	0.045 (0.40)	0.364 (0.85)	-0.170 (-0.13)	0.002 (0.75)	-0.014 (-1.32)	
HighSynd	0.581*** (6.66)	0.562 (1.34)	5.676*** (5.31)	0.004* (1.66)	0.130*** (9.37)	
Distressed×HighSynd	0.153 (1.04)	2.178*** (2.86)	-1.126 (-0.73)	0.014*** (2.98)	-0.005 (-0.22)	
Distressed×PostTaxChange	0.103 (0.83)	0.498 (0.96)	0.520 (0.34)	0.005* (1.80)	0.001 (0.12)	
HighSynd×PostTaxChange	-0.235** (-1.98)	0.372 (0.65)	-3.166** (-2.12)	0.003 (0.78)	-0.071*** (-3.66)	
Distressed×HighSynd×PostTaxChange	-0.205 (-1.02)	-2.344** (-2.20)	1.897 (0.85)	-0.015** (-2.27)	0.038 (1.19)	
Log Total Assets	0.176*** (6.17)	0.088 (0.75)	1.954*** (7.16)	0.000 (0.36)	0.006* (1.69)	
Leverage	0.113 (0.66)	-1.240* (-1.75)	0.553 (0.33)	-0.009* (-1.89)	0.027 (1.14)	
ROA	0.549 (1.53)	0.228 (0.20)	4.570 (1.28)	0.003 (0.47)	0.097 (1.48)	
Tangibility	-0.218 (-1.48)	-0.704 (-1.07)	0.741 (0.53)	-0.004 (-0.99)	0.008 (0.40)	
Term Premium	0.144 (1.06)	-0.076 (-0.14)	1.415 (0.85)	-0.002 (-0.50)	0.017 (0.72)	
Credit Rating FE	Yes	Yes	Yes	Yes	Yes	
Industry FE	Yes	Yes	Yes	Yes	Yes	
Observations	1,212	1,212	1,212	1,212	1,212	
Adjusted R^2	0.10	0.03	0.09	0.03	0.12	

Table 8**Two-Period Analysis of Propensities of Obtaining New Loans Around Tax Change Announcement**

This table presents average marginal effects in triple-difference logit regressions of obtaining new syndicated loans in the 12-month periods prior and after Tax Change Announcement for firms that have access to syndicated loan credit. The firm sample includes non-financial and non-utility firms with start-of-period total assets over \$100 million (in 2012 dollars). Every firm has two observations, one each for the 12-month period before and 12-month period after the Tax Change announcement (September 2012 is excluded). Dependent variables are dummy indicators whether firms borrow new loans for a certain type of purposes in 12-month periods. Loan purposes are categorized into investment type and non-investment type (including dividend payout, operational working capital, etc.). Investment-type loans then can be split into acquisition (Acq.) and capital expenditure (Capex). Distressed firms have pre-tax-change-announcement Altman's Z-Score below 1.9, in contrast to Non-Distressed firms pre-tax-change-announcement Altman's Z-Score above 2.8. Firms with Altman's Z-Score between 1.9 and 2.8 are dropped. High Syndicated Loan sample includes firms with pre-existing Syndicated Loan Ratio in the upper tercile. Loan facilities starting before September 2012 and ending after September 2012 syndicated in the U.S. are considered when calculating pre-existing Syndicated Loan Ratio. PostTaxChange takes 1 for the 12-month periods after September 2012. Log Total Assets is log transformation of total assets (Compustat item 6) in 2012 dollars. Leverage is the sum of current liabilities (item 34) and long-term debt (item 142), divided by total assets (item 6). ROA is the ratio of pretax net income (item 172 + item 15) divided by total assets (item 6). Tangibility is the ratio of PPE (item 8) divided by total assets (item 6). Term Premium is the difference between the yield on 10-year U.S. Treasury bonds and 2-year U.S. Treasury notes matched to the months of the fiscal year ends. All control variables are lagged by one year except for Term Premium. Credit Rating fixed effects control for three level of firms long-term credit ratings from Standard & Poors (including investment grade, non-investment grade, and not rated). Industry fixed effects are based on Fama-French 12-industry classification. Variables are defined in Table A.1. *t*-statistics are based on heteroskedasticity-robust standard errors. *, **, and *** represent statistical significance at 10%, 5%, and 1% levels.

<i>Loan Purpose:</i>	Investment		Acquisition		Capex	
	(1)	(2)	(3)	(4)	(5)	(6)
PostTaxChange	0.00972 (0.19)	0.0116 (0.23)	-0.102 (-1.28)	-0.0970 (-1.23)	0.0896 (1.09)	0.0903 (1.09)
HighSynd	0.0175 (0.44)	0.0337 (0.83)	0.0117 (0.21)	0.0134 (0.24)	0.0141 (0.23)	0.0326 (0.52)
HighDistress	0.0208 (0.47)	0.0259 (0.58)	-0.0237 (-0.35)	-0.0303 (-0.45)	0.00280 (0.04)	0.0177 (0.26)
HighSynd×HighDistress	0.111** (2.05)	0.0931* (1.65)	0.197*** (2.61)	0.173** (2.29)	-0.117 (-1.53)	-0.112 (-1.44)
HighSynd×PostTaxChange	0.0149 (0.27)	0.00884 (0.16)	0.117 (1.38)	0.106 (1.25)	-0.0890 (-1.01)	-0.0844 (-0.95)
HighDistress×PostTaxChange	-0.0197 (-0.34)	-0.0213 (-0.36)	0.160* (1.65)	0.151 (1.58)	-0.140 (-1.49)	-0.135 (-1.43)
HighSynd×HighDistress×PostTaxChange	0.0236 (0.27)	0.0295 (0.33)	-0.275** (-2.53)	-0.258** (-2.39)	0.266** (2.31)	0.257** (2.22)
Leverage	-0.0775 (-1.43)	-0.0624 (-1.04)	-0.119** (-2.18)	-0.133** (-2.33)	0.0799 (1.12)	0.120 (1.59)
Log Assets	0.0266*** (2.95)	0.0145 (1.31)	-0.0125 (-1.56)	-0.0160* (-1.67)	0.0399*** (3.51)	0.0305*** (2.19)
Return on Assets	0.0623 (0.33)	0.0542 (0.29)	-0.100 (-0.91)	-0.126 (-1.15)	0.198 (0.99)	0.215 (1.09)
Tangibility	-0.0146 (-0.30)	-0.0184 (-0.38)	-0.144*** (-2.86)	-0.136*** (-2.70)	0.151** (2.36)	0.141** (2.18)
Term Slope	-0.0484 (-1.07)	-0.0476 (-1.04)	-0.105 (-1.54)	-0.0979 (-1.49)	0.00582 (0.08)	0.0102 (0.13)
CreditRatingFE	No	Yes	No	Yes	No	Yes
IndustryFE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	960	960	960	960	960	960
Pseudo R^2	0.08	0.09	0.13	0.13	0.07	0.07

Table 9
Option Implied Volatilities around Tax Change Announcement

This table presents triple-difference regressions of option-implied volatility between 2010 and 2014. This panel data include all firms with total assets over \$100 million (in 2012 dollars) at the beginning of fiscal years. Financial and utility industry are excluded. Dependent variables are Option Implied Volatility calculated as the average volatility implied by all near-the-money options of each firm at the end of fiscal years. Implied Volatility of each option is based on the last observations in Column (1)-(3), or based on all observations weighted by trading volumes in Column (4)-(6). Distressed firms have pre-tax-change-announcement Altman's Z-Score below 1.9. High Syndicated Loan sample includes firms with pre-existing Syndicated Loan Ratio in the upper tercile. Loan facilities starting before September 2012 and ending after September 2012 syndicated in the U.S. are considered when calculating pre-existing Syndicated Loan Ratio. PostTaxChange takes 1 if fiscal year is 2012 or after. Log Total Assets is log transformation of total assets (Compustat item 6) in 2012 dollars. Leverage is the sum of current liabilities (item 34) and long-term debt (item 142), divided by total assets (item 6). Market-to-Book is the ratio of the sum of market capitalization plus the book value of debt (item 6 - item 60) divided by total assets (item 6). ROA is the ratio of pretax net income (item 172 + item 15) divided by total assets (item 6). Cash Flow is the ratio of income before extraordinary items (item 18) plus depreciation and amortization (item 14) divided by start-of-period total assets (item 6). Tangibility is the ratio of PPE (item 8) divided by total assets (item 6). Term Premium is the difference between the yield on 10-year U.S. Treasury bonds and 2-year U.S. Treasury notes matched to the months of the fiscal year ends. All control variables are lagged by one year except for Cash Flow and Term Premium. Industry fixed effects are based on Fama-French 12-industry classification. Variables are defined in Table A.1. *, **, and *** represent statistical significance at 10%, 5%, and 1% levels.

	Last Observations			Volume-Weighted		
	(1) Average	(2) Call	(3) Put	(4) Average	(5) Call	(6) Put
Distressed	0.018** (1.99)	0.018** (2.03)	0.020** (2.11)	0.020** (2.12)	0.021** (2.16)	0.021** (2.17)
HighSynd	-0.003 (-0.49)	-0.003 (-0.42)	-0.004 (-0.52)	-0.003 (-0.39)	-0.002 (-0.29)	-0.003 (-0.46)
Distressed×HighSynd	0.004 (0.25)	0.000 (0.02)	0.005 (0.29)	0.002 (0.15)	0.000 (0.00)	0.004 (0.22)
Distressed×PostTD	-0.005 (-0.85)	-0.005 (-1.00)	-0.004 (-0.77)	-0.006 (-1.05)	-0.007 (-1.16)	-0.005 (-0.90)
HighSynd×PostTD	-0.007 (-1.43)	-0.008 (-1.54)	-0.006 (-1.18)	-0.008 (-1.55)	-0.010* (-1.85)	-0.006 (-1.07)
Distressed×HighSynd×PostTD	0.019 (1.44)	0.024* (1.82)	0.016 (1.17)	0.021 (1.49)	0.027* (1.84)	0.016 (1.10)
Log Total Assets	-0.047*** (-23.73)	-0.047*** (-24.11)	-0.047*** (-23.11)	-0.049*** (-23.66)	-0.048*** (-23.75)	-0.050*** (-23.34)
Leverage	0.184*** (10.12)	0.176*** (9.99)	0.185*** (9.89)	0.190*** (10.00)	0.181*** (9.92)	0.195*** (9.82)
Market-to-Book	0.001 (0.44)	0.000 (0.15)	0.002 (0.72)	0.001 (0.37)	0.000 (0.06)	0.002 (0.57)
ROA	-0.353*** (-8.70)	-0.350*** (-8.67)	-0.349*** (-8.57)	-0.360*** (-8.61)	-0.354*** (-8.54)	-0.362*** (-8.31)
Cash Flow	0.023 (0.45)	0.028 (0.57)	0.014 (0.27)	0.021 (0.40)	0.028 (0.54)	0.016 (0.29)
Tangibility	-0.017 (-1.36)	-0.018 (-1.49)	-0.014 (-1.09)	-0.018 (-1.37)	-0.018 (-1.45)	-0.016 (-1.23)
Term Premium	0.053*** (6.91)	0.054*** (6.94)	0.053*** (6.56)	0.059*** (7.57)	0.061*** (7.82)	0.056*** (6.99)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,784	4,766	4,737	4,784	4,766	4,737
Adjusted R^2	0.46	0.46	0.46	0.46	0.45	0.45

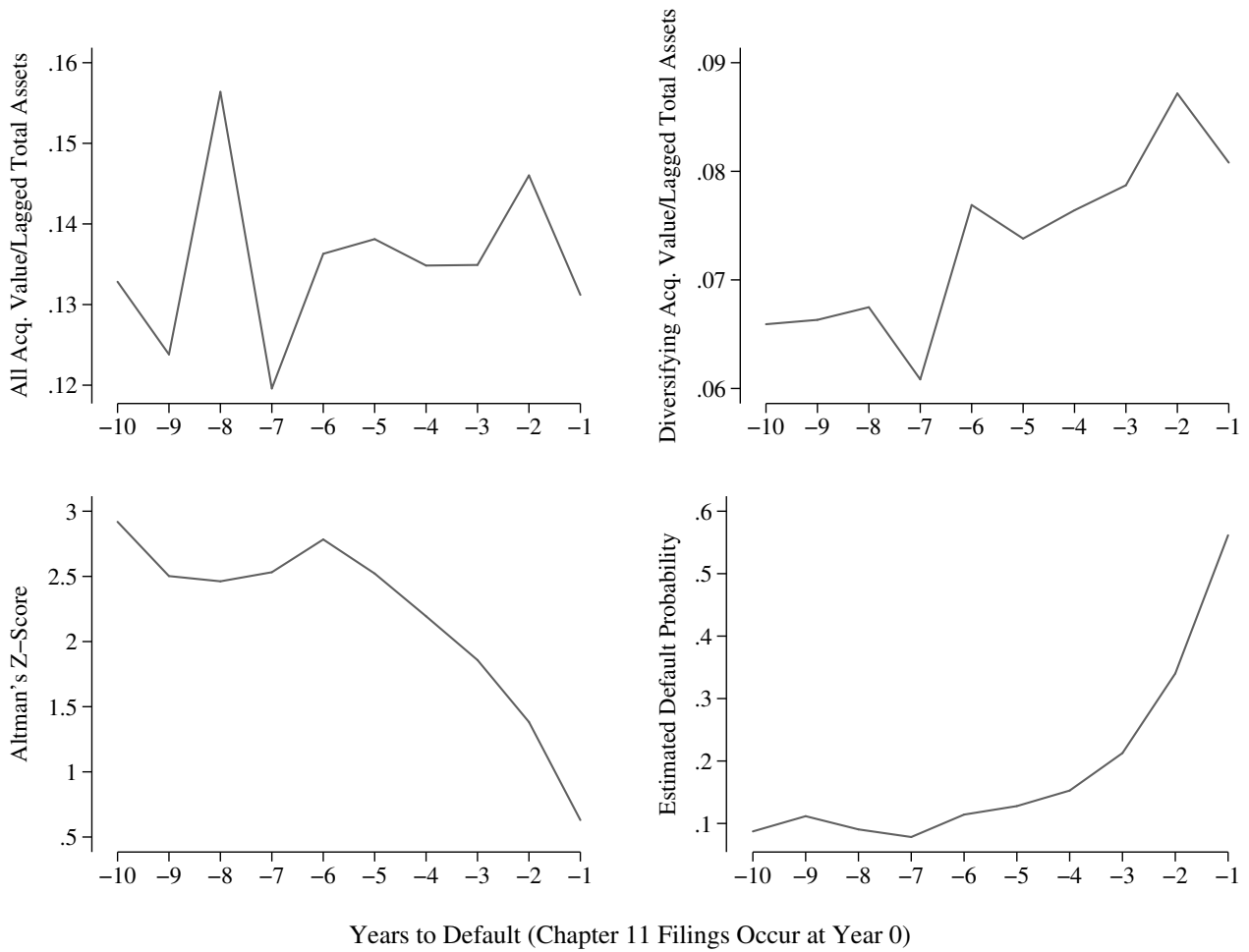


Figure 1. Acquisitions Before Bankruptcy This figure presents acquisition spending and financial health of distressed firms during the years before bankruptcy. The bankruptcy sample covers all Chapter 11 bankruptcy of non-financial and non-utility Compustat firms, with total assets over \$100 million (in 1990 dollars). Bankruptcy cases of firms that have emerged from a previous bankruptcy are excluded. Year -1 is the fiscal year when the firm filed its last 10-K before its Chapter 11 filing. Acquisition Value is the total deal value of all completed deals announced by during the year, standardized by total assets at the beginning of the year. Diversifying acquisitions are deals where acquirers and targets do not share the same 3-digit primary SIC code. Estimated Default Probability is based on estimated Distance-to-Default All variables are winsorized at 1-99% levels.
 (Data source: UCLA-LoPucki Bankruptcy Research Database, Compustat, and SDC)

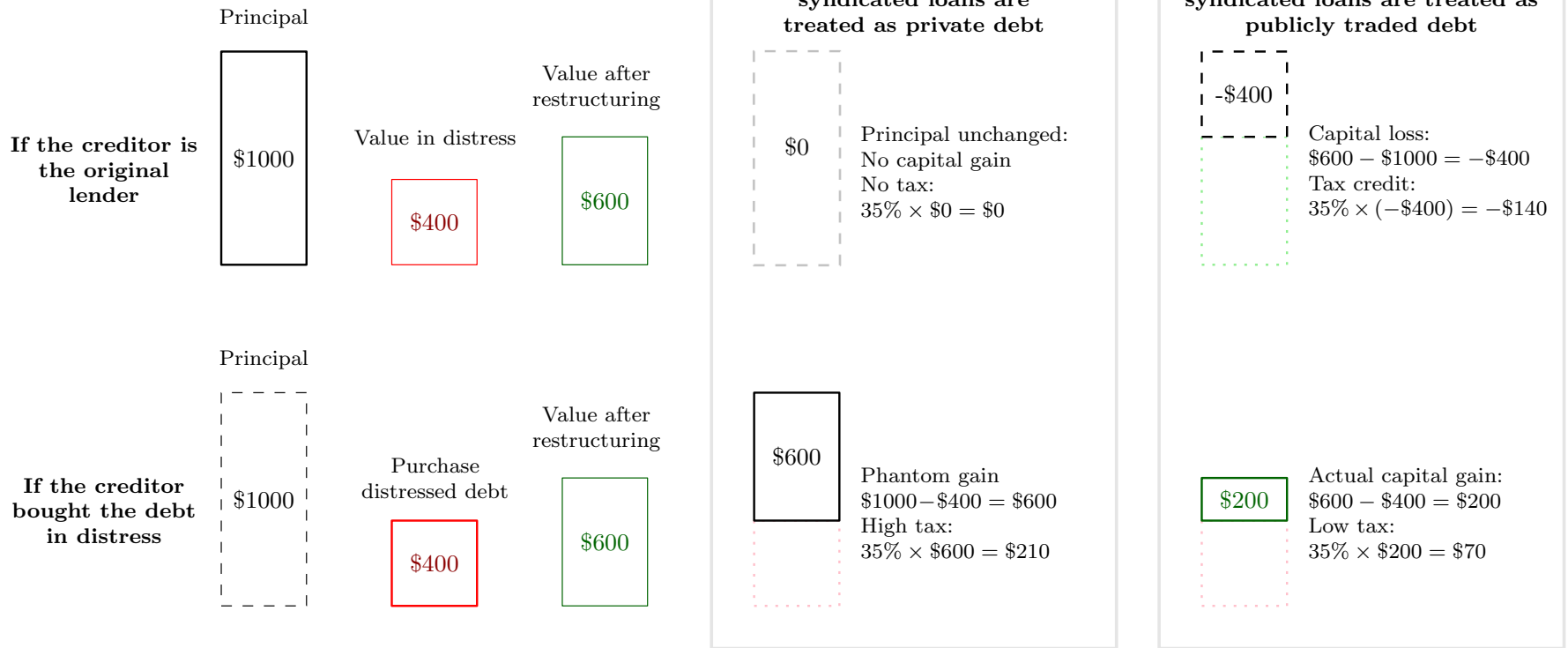
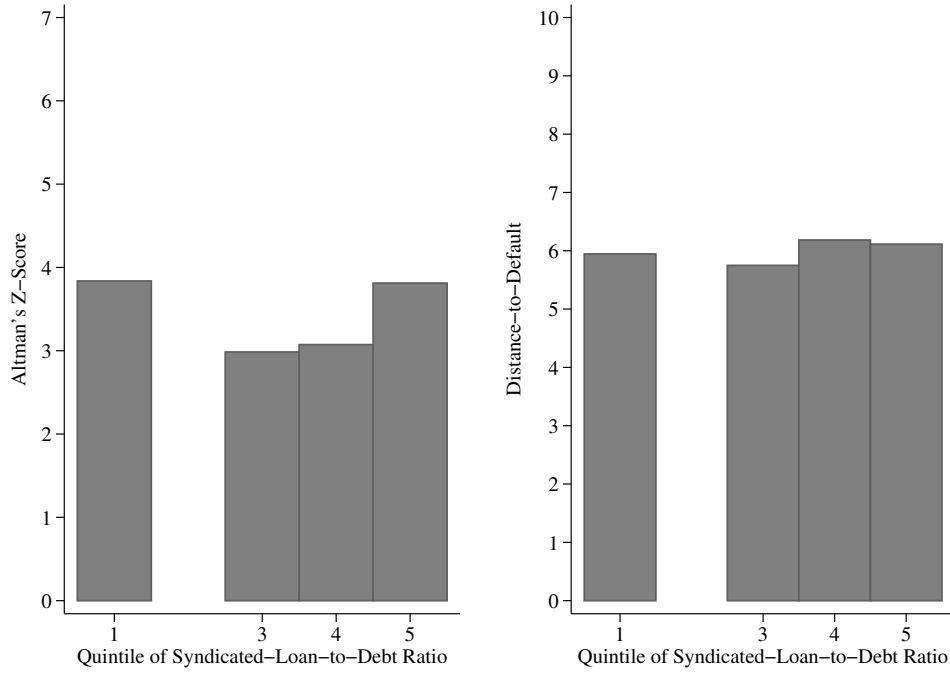


Figure 2. An illustration of how the regulatory tax change impacts the tax treatment in debt restructuring. This figure describes how the taxes are calculated for creditors after restructuring a distressed syndicated loan. The hypothetical principal amount of the debt is \$1000 and stays unchanged after restructuring. The hypothetical marginal tax rate for the creditor is 35%.

Panel A. All Firms



Panel B. Syndicated Loan Borrower Sample

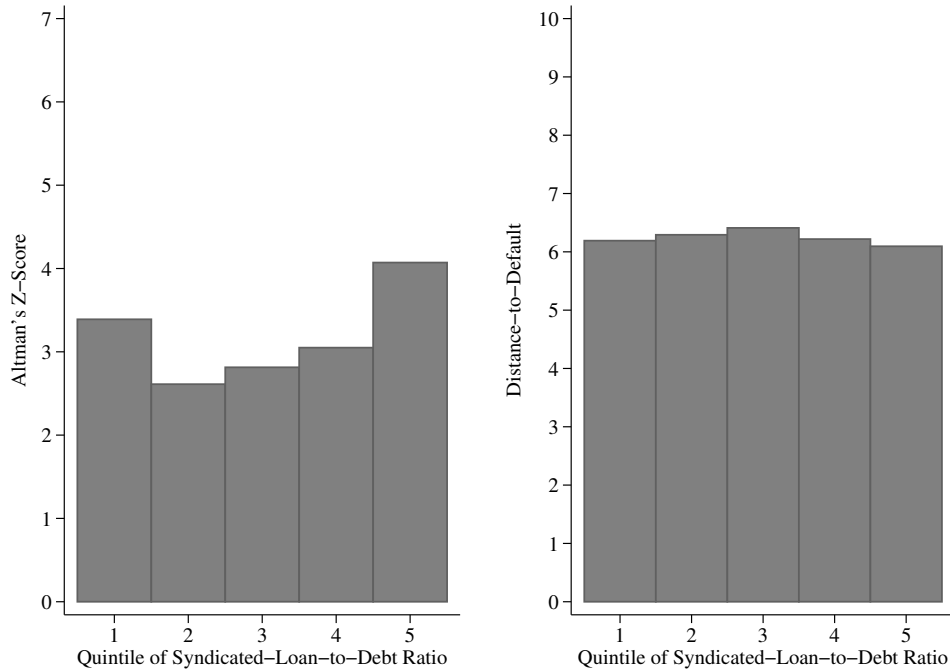


Figure 3. The Relationship Between Distress Measures and Syndicated Loan Ratio This figure presents average Altman's Z-Score and Distance-to-Default across quintiles of Syndicated Loan Ratio. The distress measures are adjusted for Firm Size. Syndicated Loan Ratio is the total amount of syndicated loans outstanding at the end of fiscal years and total assets. Syndicated loans with the amount less than \$100 million, syndicated outside of the U.S., or with status as "cancelled", "suspended", or "rumored" are excluded. In panel A, the sample include all non-financial and non-utility firm between 2010 and 2014, with total assets at the beginning of the year over \$100 million (in 2012 dollars). Due to the large number of zero Syndicated Loan Ratio observations, the second lowest quintile of Syndicated Loan Ratio collapse with the lowest quintile. In panel B, the sample excludes firms that have no active syndicated loan outstanding during the sample period (2010-2014). All variables are winsorized at 1-99% levels.

Panel A. Change in Cash Outflows on Acquisitions upon Tax Change in 2012

Panel B. Change in Diversifying Acquisition Value upon Tax Change in 2012

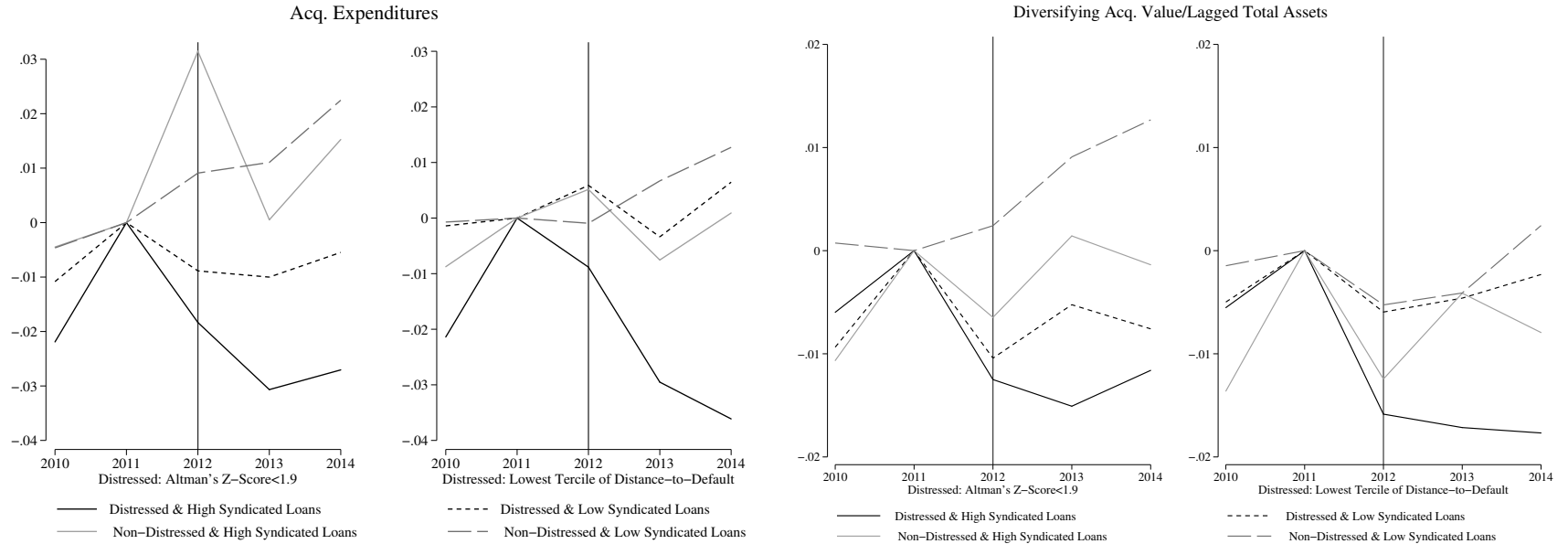
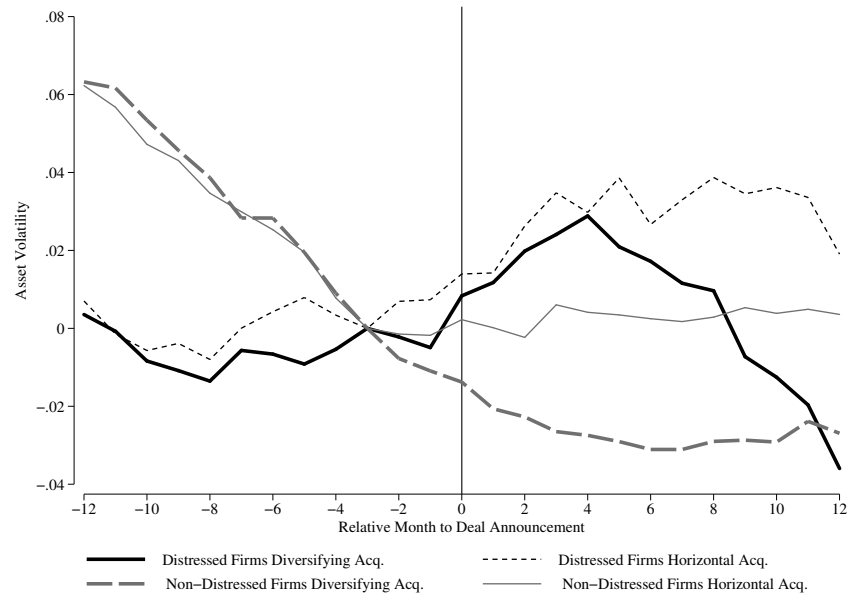


Figure 4. Drop in Acquisition Expenditures upon the Reduction in Bankruptcy Risk Due to Tax Change in 2012 This figure presents the average acquisition spending by non-financial and non-utility firms between 2010 and 2014, sorted into four groups by their exposure to Tax Change's impact on bankruptcy risk. Sample firms have total assets over \$100 million in 2012 dollars at the beginning of the year. Panel A depicts the change in overall acquisition expenditures, which is Cash Outflow of Acquisitions, standardized by total assets at the beginning of the year. Panel B shows the change in the total value of diversifying acquisitions, standardized by year-beginning total assets. Acquiring firms do not share a 3-digit primary SIC code in diversifying acquisitions. Deals with the value less than 1% of total assets of acquirers are dropped. In the left figures of both Panel A and B, Distress firms have Altman's Z-scores below 1.9 at the most recent fiscal year end before September 1, 2012, and Non-Distressed firms have Z-Score above 2.8. The right figures of both Panel A and B show change in acquisition expenditures for firms in the upper and bottom terciles of Distance-to-Default. Distress firms are in the bottom tercile of Distance-to-Default measured in August 2012, and Non-Distressed firms are in the upper tercile. Cash Outflow of Acquisitions and Diversifying Acquisitions are adjusted by firm size and leverage measure at the year beginning. Firms of High Syndicated Loans have above median Syndicated Loan Ratio, while Low Syndicated Loans indicates the lower half by Syndicated Loan Ratio. Syndicated Loan Ratio is the ratio of total outstanding loan in September 2012 and total assets in the most recent fiscal year end prior to September 2012. All variables are winsorized at 1-99% levels.

Panel A. Asset Volatility Around Acquisition Announcements



Panel B. Estimated Default Probability Around Acquisition Announcements

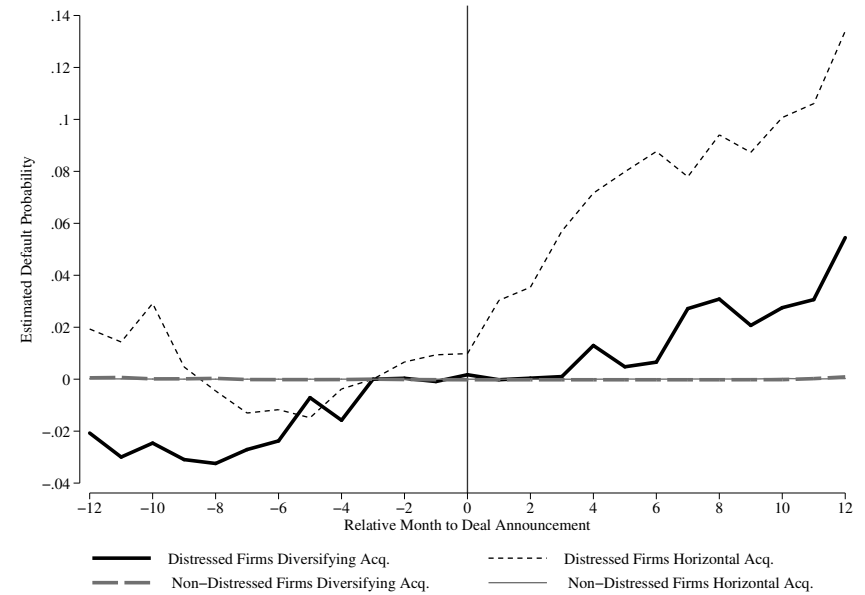


Figure 5. Financial Synergy of Acquisitions The figure demonstrates the change in Asset Volatility and Estimated Default Probability around firms announcing acquisitions. The acquisition sample includes all completed deals announced between 2010 and 2014 and made by sample firms. Acquisitions with no actively traded acquirer stocks or the relative deal size is below 5% are dropped. Asset Volatility and Expected Default Probability are monthly estimations based on Merton’s Model, following Vassalou and Xing (2004) and Bharath and Shumway (2008), and are adjusted to firm size and leverage and normalized to 0 in the second month before deal announcements. Acquisitions are sorted into four groups by Distress dummy of the acquirers based on Distance-to-Default and Diversifying dummy based on 3-digit primary SIC. Sample firms have Total Assets over \$100 million in 2012 dollars at the beginning of the year. Distress firms are in the bottom tercile of Distance-to-Default measured in August 2012, while Non-Distressed firms in the upper tercile. All variables are winsorized at 1-99% levels.