Cash Windfalls and Acquisitions

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Abstract

This article studies the effect of cash windfalls on the acquisition policy of companies. As identification I use a German tax reform that permitted firms to sell their equity stakes tax-free. Companies that could realize a cash windfall by selling equity stakes see an increase in the probability of acquiring another company by 19 percent. I find that these additional acquisitions destroy firm value. Following the tax reform, affected firms experience a decrease of 1.2 percentage points in acquisition announcement returns. These effects are stronger for larger cash windfalls. My findings are consistent with the free cash flow theory.

JEL classification: G30, G31, G34

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1. Introduction

How access to financing affects a firm's investment policy is one of the fundamental questions in corporate finance. As Stein (2003) points out, there is convincing evidence that firms with a strong financial position invest more, but it is less clear whether this effect is driven by under- or overinvestment. Underinvestment occurs if financial frictions prevent management from making value increasing investments (e.g. Myers and Majluf, 1984), while overinvestment occurs if managers engage in "empire building" (Baumol, 1959; Williamson, 1964) as predicted by the free cash flow theory (Jensen, 1986). Answering this question is difficult for two reasons: First, it is generally hard to determine whether an investment project creates value to shareholders. Second, internal financial resources and investment opportunities are typically correlated, making any simple cross-sectional study subject to endogeneity concerns.[1]

In this paper, I address these issues by studying the effect of large exogenous cash windfalls on a firm's acquisition activity. The cash windfalls resulted from a German tax reform that made divestitures of equity stakes tax free. Since not all firms owned equity stakes, the tax reform provided cash windfalls only to a subset of firms. Using difference-in-difference estimation, I find that firms receiving a cash windfall undertake more acquisitions and that the additional acquisitions have negative announcement returns, consistent with overinvestment.

In addition to showing evidence of overinvestment, my paper adds to the literature on asset sales. Despite the fact that U.S. firms raise more financing through asset sales than through equity issuance (Edmans and Mann, 2013), this financing channel has received little attention in the academic literature. In particular, while there is evidence that asset sales are *correlated* with higher investments (Hovakimian and Titman, 2006; Borisova and Brown, 2013), my paper is the first to address endogeneity by exploiting an exogenous shock to firms' ability to sell assets.

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[1] There has been an intensive debate on how to interpret the findings of investment cash flow regressions (Fazzari, Hubbard, and Petersen, 2000; Kaplan and Zingales, 1997; Kaplan and Zingales, 2000; Erickson and Whited, 2000; Gomes, 2001; Alti, 2003; Moyen, 2004).

This exogenous shock is provided by the German capital gains tax reform in 2000. Before the reform, many German corporations held minority equity stakes in unrelated firms. These equity stakes often had high market values, making up a sizeable part of the holder's assets. For example, the telecommunications and energy company VIAG owned equity stakes with a (pre-tax) market value of EUR 2.9 billion (25% of its own market capitalization) at the end of 1999. Many of these holdings had been established in the 1950s and 1960s and thus had accumulated large capital gains. Consequently, firms had strong incentives to maintain these equity stakes to avoid capital gains taxation (Sautner and Villalonga, 2010). The German government decided to abolish the 50% capital gains tax in 2000, thus removing a major obstacle to the divestiture of the equity stakes.

I show that stock prices of firms with large equity stakes increased by 4% upon the announcement of the tax reform, which suggests that the reform was a surprise to the market and that the tax acted as a binding constraint on firms. After the tax reform, this constraint was lifted and firms cashed in their equity stakes. I refer to the resulting cash inflows as windfalls, because the capital gains tax effectively prevented a sale of the equity stakes before the tax reform and because the tax reform is exogenous to the investment opportunities of an individual firm.

While the tax reform was exogenous, the decision to sell an equity stake is endogenous to the firm. Therefore, I conduct an *intention-to-treat analysis* and condition my analyses on the existence of an equity stake prior to the reform rather than the actual divesting decision, i.e. my treatment group are firms with equity stakes in 1999 and the control group are firms without equity stakes. Such an *intention-to-treat analysis* is common in the literature (e.g. Angrist, 1990; Karlan and Zinman, 2010) and is the same as a reduced-form instrumental variable approach in which the divestiture of an equity stake is instrumented by the existence of an equity stake at the time of the tax reform. This approach is reasonable as 83% of companies divested at least one of their equity stakes following the tax reform. Including the other 17% of firms in the analysis will only underestimate the true effect.

Media reports suggest that firms used the windfalls from selling equity stakes to undertake more acquisitions. For example, the Wirtschafts Woche, a leading German business magazine, wrote in February 2005:

"The cross-holdings lock up capital which is needed to stay competitive internationally. The energy company E.ON sold several equity stakes [...] as it needs the money for acquisitions abroad." – Wirtschafts Woche, February 4, 2005.[2]

My analyses suggest that E.ON is not the only firm to finance acquisitions by divesting equity stakes. A simple comparison of means reveals that the yearly probability of doing an acquisition increases by 14% (five percentage points) for firms that hold equity stakes before the tax reform (and thus receive a potential cash windfall), but decreases by 1.7 percentage points for the control group. A more elaborate difference-in-difference analysis confirms these results by showing that firms with equity stakes in 1999 increase their probability of undertaking an acquisition by eight percentage points relative to the control group. This finding rejects the perfect capital market assumption of Modigliani and Miller (1958).

Next, I study the acquirer announcement returns to determine whether the additional acquisitions represent overinvestment (free cash flow theory) or a reduction in underinvestment (financial constraints theory). I conduct a difference-in-difference analysis on the acquirer announcement returns. Companies that owned equity stakes at the time of the tax reform experience a decrease in average announcement returns relative to the control group of 1.2 percentage points. This finding is consistent with overinvestment.

However, because *average* announcement returns remain positive after the tax reform, a concern is that the decrease in announcement returns can be explained by decreasing but still positive *marginal* returns. [3] I address this concern in two ways: First, I show in a simple calculation that the decrease in average announcement returns is so large that the *additional* acquisitions must have negative announcement returns. Second, I examine the sum of the announcement returns of all acquisitions a company undertakes over a year (following Bertrand and Mullainathan, 2005). If the additional

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[2] "Der Umbau der Deutschland AG" Wirtschafts Woche, February 4, 2005.
http://www.wiwo.de/unternehmen/sinnvolle-loesungen-der-umbau-der-deutschland-ag/4902614.html

[3] Like other studies on acquisitions in Europe (Faccio, McConnell, and Stolin, 2006; Huyghebaert and Luypaert, 2009), I find positive acquirer announcement returns. Even in the U.S. the average acquisition has a positive announcement return for acquirers, but large acquisitions with negative returns make the volume weighted acquisition return negative (Moeller, Schlingemann, and Stulz, 2005).

acquisitions have positive announcement returns, they should increase the sum of announcement returns. However, after the tax reform, the yearly sum of all announcement returns of acquisitions completed by firms with cash windfalls decreases by 0.4% relative to the control group. This result implies that the *additional* acquisitions destroy 0.4% of firm value per year or 3.2% over our sample period. These findings suggest that the cash windfalls are used for overinvestment as predicted by the free cash flow theory.

Next, I study for which firms our results are largest. We would expect the tax reform to have a stronger effect on firms receiving larger cash windfalls. Indeed, I find that my results are largely driven by firms who rank above the median by value of their equity stakes before the tax reform (as a share of their market capitalization). These firms see an increase in acquisition probability of ten percentage points, while it is only six percentage points for firms below the median. Also the reduction in average announcement returns is larger for firms with large equity stakes (1.9% vs. 0.9%).

Consistent with divestitures of equity stakes providing firms with additional cash, I find that the results are concentrated in acquisitions that are paid in cash. While the probability of undertaking a cash acquisition increases by 9% for firms with equity stakes in 1999, the probability of undertaking a stock acquisition decreases slightly for these firms. Similarly, the decrease in acquisition announcement returns is concentrated in acquisitions paid for in cash.

Finally, I show that the results are bigger for firms that sold more equity stakes and that sold equity stakes with higher market values. Furthermore, I show that acquisition activity increases and announcement returns decrease in the year following the first divestiture of an equity stake.

All results are robust to controlling for different trends in firm characteristics such as size, Tobin's Q, or leverage as well as industry-year fixed effects. They are also robust to running the regressions on a control sample matched by size and industry as well as using a shorter event window. As expected, running a placebo test in which we pretend the tax reform happened in 1995, we do not find any significant results.

Additional acquisitions do not substitute for capital expenditures. In addition to the increase in acquisition activity, firms receiving cash windfalls increase capital expenditures as a share of assets by 0.7 percentage points. While this result is not statistically significant, it constitutes an increase of 13% relative to the sample median. In contrast, dividends are not increased by firms receiving cash windfalls.

Taken together, my results suggest that firms do not pay out the cash windfall to shareholders, but rather invest it in value-destroying acquisitions. Therefore, my results are consistent with the free cash flow theory and empire building of managers.

My paper has important policy implications. It shows that the tax reform succeeded in allowing firms to divest their equity stakes and in freeing up capital for additional investments. However, my results also suggest that these investments constituted overinvestment, which destroyed shareholder value.

My paper is related to two streams of literature: the literature on investment and the literature on asset sales.[4] The investment literature started by studying the relation between investment and cash flows directly (e.g. Fazzari et al., 1988; Hoshi, Kashyap, and Scharfstein, 1990; Whited, 1992; Almeida and Campello, 2007). Several studies also focus on acquisitions and investment projects: Lang, Stulz, and Walkling (1991) show that low q firms with high cash flows exhibit lower acquirer announcement returns. Harford (1999) shows that firms with excess cash undertake more acquisitions, which are less profitable. Bertrand and Mullainathan (2005) find that oil companies with higher cash flows bid more for oil and gas leases, but do not bid on more leases. However, all these studies are to some degree subject to endogeneity concerns: Firms potentially hoard cash in anticipation of future acquisitions and cash flows are correlated with investment opportunities.

Therefore, more recent papers focus on shocks to financial resources that are exogenous to the company's investment opportunities: Rauh (2006) uses the nonlinearities of mandatory pension

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[4] My paper also relates to another stream of literature studying the marginal value of cash in a company (Pinkowitz, Stulz, and Williamson, 2006; Faulkender and Wang, 2006; Dittmar and Mahrt-Smith, 2007; Frésard and Salva, 2010) and how companies accumulate and use cash reserves (Opler et al., 1999; Dittmar, Mahrt-Smith, and Servaes, 2003; Almeida, Campello, and Weisbach, 2004; Harford, Mansi, and Maxwell, 2008; Bates, Kahle, and Stulz, 2009; Denis and Sibilkov, 2010). I add to these papers by studying the effect of cash windfalls, which are exogenous to investment opportunities.

contributions to show that exogenous cash outflows cause a decrease in capital expenditures, acquisitions, and dividends.[5] However, Bakke and Whited (2012) show that the methodology employed in Rauh (2006) is not sufficient to account for the endogeneity of mandatory pension contributions. Using a refined approach, they find no causal effect on investments. Other papers study shocks transmitted through the financing channel (e.g. Gan, 2007; Chaney, Sraer, and Thesmar, 2012; Almeida et al., 2009; Chava and Purnanandam, 2011). I make two important contributions to this literature. First, I use cash windfalls rather than cash outflows. This difference is important: If shareholders want to restrict the free cash in the company, they finance it just sufficiently to undertake all profitable projects. In this case, the negative effect of an unexpected cash outflow on investment does not necessarily imply a positive effect of a cash windfall. Second, I focus on acquisitions, which allows me to examine the value effect of the additional investments through announcement returns. Thus, I can distinguish between the free cash flow theory and non-agency theories of financial constraints. Very few papers look at cash windfalls. Blanchard, Lopez-de-Silanes, and Shleifer (1994) study cash windfalls of won or settled lawsuits, but cannot make any statistical inference because their study only includes 11 companies. Faulkender and Petersen (2012) find that constrained firms invest more after a tax holiday on repatriated foreign earnings. However, the law granting the tax holiday included regulations forcing firms to invest the repatriated earnings (Dharmapala, Foley, and Forbes, 2011). Thus, it is not clear whether their findings extend to cash windfalls more generally or were just a result of the specific law. More generally, Dobridge (2016) finds that firms spend tax refunds differently depending on the macroeconomic environment.

Second, I add to the literature studying asset sales as a financing channel. This literature is surprisingly small, given that U.S. firms raise more financing through asset sales than through equity issuance (Edmans and Mann, 2013). The literature include Bates (2005), who finds that firms with better investment opportunities are more likely to retain the proceeds of assets sales. Furthermore, financially constrained firms have a stronger sensitivity between the proceeds of asset sales and both investment

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[5] Following the approach in Rauh (2006), Franzoni (2009) estimate the stock price reaction to mandatory pension contributions and Campbell, Dhaliwal, and Schwartz (2012) study its effect on companies' cost of capital.

(Hovakimian and Titman, 2006) and R&D (Borisova and Brown, 2013).[6] However, these papers do not address the fact that asset sales are endogenous firm decisions. I add to this literature by studying an exogenous shock to a firm's ability to sell a particular type of asset (equity stakes), which provides for better identification.

2. The German Tax Reduction Act of 2000 – Description and event study

My main source of identification is the German Tax Reduction Act of 2000, which exempted the sale of equity stakes from corporate capital gains tax. Before the reform, many German companies held minority equity stakes in other unrelated companies. Also, cross-holdings, in which company A holds equity in company B while company B holds equity in company A, were not uncommon. This system of minority equity stakes and cross-holdings was often called *Germany Inc.* (Deutschland AG). Many of these equity stakes had been acquired in the distant past (often after the Second World War as a way to foster cooperation in the German economy (Edwards et al., 2004). Thus, the equity stakes had book values significantly below their market values, implying large capital gains.

In Appendix B, I provide some analyses to get an idea of the size of these capital gains. Five financial companies with large equity holdings report the book and market values of their holdings on their balance sheets. On average, for these five firms, the book value of the stakes makes up only 36% of the stakes' market value. For other firms I do not have the exact book values, but I can infer from the highly positive stock returns in the years leading up to the tax reform that most equity stakes were likely held at high capital gains. For example, 76% of equity stakes had cumulative stock returns of over 50% in the ten years leading up to the tax reform (see Appendix B).

Before the tax reform, corporate capital gains were taxed at 50%, which implies that companies would have suffered a significant tax burden if they had divested their equity stakes (Sautner and Villalonga, 2010).[7] The German government lifted this lock-in by exempting the sale of equity stakes

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[6] There is also a large literature that studies the announcement returns of asset sales and finds generally positive announcement returns (e.g. Alexander, Benson, and Kampmeyer, 1984; Jain, 1985; Klein, 1986; Hite, Owers, and Rogers, 1987; Lang, Poulsen, and Stulz, 1995; Borisova, John, and Salotti, 2011).

[7] Capital gains were taxed at 40% corporate tax and trade tax that varies across regions, but was approximately 10%. For more details see Edwards et al. (2004).

from capital gains taxes with the explicit intention to facilitate the breakup of *Germany Inc.* (Höpner, 2000). This tax exemption was part of a wider tax reform, which included a reduction in individual and corporate tax rates as well as a change in dividend taxation. However, there is no reason to believe that the general tax changes had specific effects on firms with equity stakes. For a detailed description of the tax reform, see Keen (2002).

In Fig. 1, I study how the announcement of the tax exemption affected the stock prices of companies holding equity stakes. While the general tax reform was announced on December 21, 1999, the plan for the corporate capital gains tax exemption was not confirmed until December 23, 1999. In Panel A, I plot the average returns for companies with and without minority equity stakes around these announcement dates. While there was no reaction to the announcement of the general tax reform, the announcement to exempt equity sales from corporate capital gains taxes had a large market impact. During a quiet stock market environment, companies with equity stakes had an average stock return of 2.2% on the announcement date, while the return for companies without equity stakes was only 0.2%. The difference in the average returns between the two groups was larger than on any other day in the year around the announcement date.

In Panel B, I focus on firms holding large equity stakes, i.e. firms whose equity stakes made up at least 1% of their market value. I display the return difference between these firms and firms without equity stakes. Firms with large equity stakes experienced an excess return of 4.0%, by far the highest in the entire year around the event. These findings are consistent with the results of Edwards et al. (2004), who show a positive stock price reaction to the announcement of the tax reform concentrated in the six largest holders.

In Panel C, I split companies with large equity stakes into whether they are financial or non-financial companies. Given that banks held the largest equity stakes, we examine whether our results are driven exclusively by financial companies. While financial companies indeed have a larger announcement return of 5.1%, non-financial companies with large equity holdings also had a return of 2.4%, which is significant at the 5% level.

The event study shows that the corporate capital gains tax indeed constrained firms' ability to sell their equity stakes and that its abolition was not expected by the market. This idea is supported by the fact that *Handelsblatt*, Germany's leading business newspaper, headlined on the following day, "Eichel [the finance minister] surprises stock market with a Christmas present".[8] This surprise element is important, because it alleviates worries that acquisition decisions before 1999 are endogenous to the anticipation of the tax reform.

The German parliament passed the general tax reform in the summer of 2000 to be effective from January 1, 2001. The abolition of the capital gains tax did not come into effect until January 1, 2002. However, there were ways for companies to divest equity stakes before 2002 and still capture the better tax treatment. For example, Deutsche Bank sold a stake in Allianz on June 6, 2000 and stated in its investor relations release:

"The economic disposal has been achieved by an innovative structure which allows Deutsche Bank to obtain the full benefits from the upcoming tax reform in Germany. The transaction will qualify as a disposal for the Deutsche Bank Group in its IAS accounts, giving rise to a capital gain in excess of EUR 2 billion, but without triggering a tax disposal in the current year."[9]

Furthermore, anticipating the tax reform, companies could have chosen to reduce their cash buffer and thereby use the additional financial resources already before they actually sold any equity stakes. Accordingly, I use the announcement of the tax reform in December 1999 as the event date.

On the other hand, when the tax reform took effect in 2002, stock prices in Germany had experienced a recent bear market and firms could have been reluctant to sell their equity stakes quickly. Therefore, I examine a relatively long post-event period until 2007. To make the event window symmetric, I use 1992-1999 as the pre-event period. However, I show in Table 12 that our results are robust to a shorter event window.

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[8] "Eichel überrascht die Börse mit einem Weihnachtsgeschenk", Handelsblatt, December 24, 1999.

[9] "Deutsche Bank reduces Allianz stake to 4.1%" (https://www.db.com/ir/en/content/ir_releases_2000_3464.htm) and "Deutsche plays clever in Allianz sale to avoid CGT" (http://www.efinancialnews.com/story/2000-06-12/deutsche-plays-clever-in-allianz-sale-to-avoid-cgt?ea9c8a2de0ee111045601ab04d673622).

I am not the first to use the German capital gains tax as a natural experiment. As mentioned above, Edwards et al. (2004) study the stock market reaction to the tax reform. Weber (2009) studies the change of ownership concentration after the tax reform and finds that ownership concentration has been reduced. This finding is consistent with firms selling their equity stakes in other companies. Sautner and Villalonga (2010) use the tax reform as an exogenous shock to firms' ownership structures. They find that firms whose ownership concentration increases reduce diversification and exhibit an increase in the efficiency of internal capital markets. Von Beschwitz and Foos (2014) study how the divestiture of bank's equity stakes after the tax reform affects the lending relationship.

3. Data and variable construction

3.1. Sample construction

The data used in this study come from five different databases. I obtain ownership data from *Who owns Whom?* (Wer gehört zu wem?) provided by Picoware as of July 1999. This database contains roughly 18,000 private as well as publicly traded firms and their owners. The data are based on public sources such as balance sheets and additional self-reported information by companies. I obtain data on acquisitions from Thomson Reuter's SDC Platinum. For acquisitions with missing information on payment method, I add this information from Zephyr database on acquisitions. I use Worldscope for balance sheet data and Datastream for stock market data. In addition, I use balance sheet and stock market data from Compustat Global if observations are missing in Worldscope or Datastream.

I limit my sample to publicly listed companies to be able to compute announcement returns. I define *Equity Stake 1999* as an indicator variable equal to one if the firm owns a minority equity stake in another (public or private) company before the tax reform. I include direct ownership as well as indirect ownership through subsidiaries (see Appendix C for more details). Following Edwards et al. (2004), I define a minority equity stake to be any equity stake in another company below 20%. Thus, I assume that equity stakes below 20% are less likely to generate economic benefits and are more likely to be divested after the tax reform. In my sample, there are 554 companies from the *Who owns Whom?* database that I can match to Worldscope or Compustat Global. Of these companies, 130 companies (23.4%) own at least one equity stake.

I study acquisitions of both public and private targets. However, to exclude the acquisition of subsidiaries as well as investments without economic control, I focus on acquisitions, in which the acquirer owns less than 25% of shares before the acquisition and more than 50% after the acquisition. If several acquisitions are announced on the same day, this day only enters the regressions once. Variable definitions are in Appendix A. More detail on sample and variable construction is in Appendix C.

3.2. Summary statistics

In Fig. 2, I display the companies in my sample by 10 Fama-French industries. Companies with equity stakes in 1999 cover all industries except oil & gas, but are somewhat overrepresented in the utilities and financial sectors, while they are underrepresented in manufacturing, non-durables, and business equipment. I ensure that the different industry composition is not driving my results by controlling for industry specific trends with industry-year fixed effects (Gormley and Matsa, 2014). Also, it should be noted that firms with equity stakes are not concentrated in the IT sector, which alleviates concerns that our results are driven by the burst of the internet bubble.

Panel A of Table 2 displays the summary statistics of companies with and without equity stakes in 1999 before the tax reform (December 1999). I display median and mean values and test whether the difference in the two subsamples is statistically significant. In terms of investment opportunities measured as Tobin's Q, there is no difference between companies with and without equity stakes. The firms in the two subsamples are also similar in terms of leverage, dividend ratio, and return on assets. The main difference is that companies with equity stakes are considerably larger as measured by market capitalization. I address this difference by including firm size interacted with the post reform dummy in my difference-in-difference setup. In addition, I run regressions on a sample matched by industry and firm size.

Panel B displays more details on the subsample of firms with equity stakes in 1999. In this subsample, the median firm holds two equity stakes, but the mean is 4.9 as some firms own a large number of equity stakes. Next, I display the (pre-tax) value of the equity stakes. Given that I include equity stakes in private companies, this value is only an estimate (see Appendix C for details of the estimation). The distribution of the value of equity stakes is highly skewed. The median company holds

equity stakes worth EUR 7.4 million, while the mean is EUR 646 million. Next, I compare these values to the firm's own marked capitalization. On average, the equity holdings account for 24% of a firm's market capitalization (median 0.73%). I use the fact of this skewed distribution by showing that my results are stronger in the subsample with the largest equity holdings.

Panel C displays summary statistics on the acquisition level. The average acquisition has a positive announcement return of 0.57% (median 0.23%). Of the acquisitions, 34% are diversifying in the sense that the target is in another industry (using 10 Fama-French industry groups). Of the targets, 58% are outside Germany, 55% are publicly listed and 53% are independent firms, while 47% are spinoffs. SDC Platinum and Zephyr only provide the payment information in 27% of the cases, but for these cases, 89% of the acquisitions are paid in cash. To get an idea of the payment methods for acquisitions without payment information, I run a predictive regression explained in Appendix D. I treat an acquisition without payment information as a cash acquisition if it has a probability of larger than 75% to be a cash acquisition according to that regression. After this adjustment, 95% of acquisitions are cash acquisitions.

4. Results

4.1. Divestitures of equity stakes following the tax reform

Several prior studies find that companies divested a large part of their equity stakes following the tax reform (Kengelbach and Roos, 2006; Höpner and Krempel, 2006). In Table 3, I confirm this result for my dataset. I use *Who owns Whom?* data from November 2006 to determine which equity stakes have been divested. I check by hand that equity stakes have indeed been divested and not just moved to a different holding vehicle. For the stakes for which I have data, 61.1% are divested by November 2006 and 83% of companies sold at least one equity stake until November 2006.

It is not surprising that many firms sold their equity stakes as they had strong incentives to do so: First and most importantly, if the company is unrelated, then holding an equity stake in it will not create value and the locked-in capital can be put to a more effective use. Second, companies realized large accounting gains by selling the equity stakes, which was an incentive to sell for managers, who cared about reporting a high accrual income. Third, there was a general election in Germany in September 2002, and the political opposition had announced a plan to reintroduce capital gains taxation. The

opposition narrowly lost the election and the sale of equity stakes is tax free for companies to this day. However, in 2002 the opposition was ahead in the polls, which caused some companies to sell their equity stakes to front run a return of the tax.[10] (Pauly and Schäfer, 2002).

Next, I use *Who owns Whom?* data to determine the likely buyers of equity stakes. For those equity stakes that are confirmed divestitures, I check which new owner replaces the old owner in the data. If there are several new owners, I assume that the owner that experienced the largest increase in ownership bought the equity stake. I display the result of this analysis in Panel C. About 32% of equity stakes are sold to listed companies, while 35% are sold to private companies, 20% are sold into free float, and 6% are sold to governments like cities or states or government-affiliated entities. The other 7% are sold to investor groups, individual investors, or the companies themselves as buybacks.

An implicit assumption in my analysis is that most equity stakes were divested for cash rather than via a share exchange. The result that only 32% of equity stakes are sold to publicly listed companies suggests that this is the case because other types of buyers cannot offer share exchanges. Furthermore, as shown in Section 3.2, even publicly listed companies pay for a large fraction (95%) of their acquisitions in cash. In Appendix E, I show that the fraction of cash acquisitions is even higher when a company purchases an equity stake rather than a whole company. This evidence suggests that most equity stakes were indeed divested for cash, thus generating a cash windfall to the selling firm.

4.2. Acquisition probability

In this section, I study how a company's acquisition behavior depends on its financial resources using the German capital gains tax reform as identification. The tax reform enabled firms to sell their equity stakes tax free. Thus, it provided a cash windfall *only* for companies able to sell an equity stake. Accordingly, I compare how the acquisition behavior of companies with equity stakes in 1999 changes relative to companies without equity stakes.

I condition my analysis only on ownership of equity stake before the tax reform rather than divestiture of equity stakes because the decision of whether or not to sell the equity stake is endogenous.

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[10] "Jäger des verlorenen Schatzes", Spiegel, November 09, 2002 (http://www.spiegel.de/spiegel/print/d-24793156.html).

More specifically, I conduct an intention-to-treat analysis, which is essentially a reduced-form instrumental variable approach, in which the sale of an equity stake is instrumented with the existence of an equity stake prior to the tax reform. The intention-to-treat (ITT) effect measures the effect of being *able* to sell an equity stake. However, one might also be interested in the treatment-on-the-treated (TOT) effect, i.e. the effect of actually selling equity stakes.

Two issues make it difficult to assess the TOT effect: First, due to missing data, I do not know the exact fraction of firms that sold equity stakes (but I know that it is between 66% and 87%). Second, the tax reform could have had some effect on firms that did not sell their equity stakes. For example, a firm could reduce its cash buffer when it knows that it can divest an equity stake, allowing it to use the cash windfall without actually divesting the equity stake.

Thus, I cannot estimate the TOT effect precisely. However, I can say that it is at least as high as the ITT effect (if the tax reform had the same effect on firms that did not sell their stakes) and at most 1.5 times as high (computed as 1/0.66, in the case in which only 66% of firms sold their equity stakes and the tax reform has no effect on firms that keep their equity stakes). In the rest of the paper, I will report the ITT effects, which are a lower bound to the TOT effects. But the reader should keep in mind that the true TOT effects can be up to 50% higher.

Under the null hypothesis of no financial constraints, a cash windfall should have no effect on the acquisition activity, since companies without a cash windfall could simply raise the same amount of money in the financial market. On the other hand, under both the financial constraints theory and the free cash flow theory, a cash windfall should result in more acquisitions. This prediction implies that it is easier to raise financing by selling equity stakes than by issuing equity or bonds. This assumption seems reasonable given that divestitures of equity stakes are less affected by asymmetric information (Edmans and Mann, 2013).

I start with a univariate analysis in Fig. 3. I examine the probability that a company undertakes an acquisition in a certain year calculated as the number of companies doing an acquisition divided by the total number of companies. After the tax reform, companies that owned an equity stake in 1999

experience an increase in acquisition probability of five percentage points or 14% relative to the pre-event period. At the same time, the probability of undertaking an acquisition slightly decreases by 1.7 percentage points for companies without equity stakes. These results suggest that the additional financial resources from selling their equity stakes led companies with equity stakes to increase their acquisition activity after the tax reform.

After illustrating the overall economic effect above, I now undertake a more detailed analysis using a difference-in-difference setup:

$$Acquisition\ Probability_{f,t} = \alpha_f + \alpha_t + \beta * Equity\ Stake\ 1999_f * Post\ Reform + \varepsilon_{f,t}, \quad (1)$$

where *Equity Stake 1999* is a dummy variable equal to one if the company holds a minority stake in 1999 and *Post Reform* is a dummy variable equal to one after the announcement of the tax reform; and α_f, α_t denote firm and year fixed effects (which also absorb the main effects of the interaction *Equity Stake 1999* and *Post Reform*). The year fixed effects absorb any time trends. For example, the tax reform could make acquisitions more attractive, since future divestitures are not subject to capital gains taxation. However, this effect should be the same for companies with and without equity stakes and thus be captured by the year fixed effects. The fundamental identifying assumption of this analysis is that factors other than the capital gains tax reform affect companies with and without equity stakes in the same way (parallel trends assumption). Since there might be different trends by industry, I add industry-year fixed effects. I do not include time-varying controls as these can be endogenously affected by the tax reform. However, I add firm specific controls (measured in 1999) interacted with the post reform dummy. This method to account for differing trends depending on industry characteristics and control variables has been used in many difference-in-difference studies, for example Barrot (2015). The final regression setup is:

$$Y_{t,f} = \alpha_f + \alpha_t + \alpha_{i,t} + \beta * Equity\ Stake\ 1999_f * Post\ Reform + \gamma * Controls_f * Post\ Reform + \varepsilon_{f,t}, \quad (2)$$

where $\alpha_{i,t}$ are industry-year fixed effects and $Controls_f$ is a vector with size, Tobin's Q, and leverage as of December 1999. I cluster standard errors at the firm level, which controls for the serial correlation issue in difference-in-difference analyses (Bertrand, Duflo, and Mullainathan, 2004).

I report results in Table 4. The dependent variable is a dummy variable equal to one if a company undertakes an acquisition in a certain year. I follow Harford (1999) and study the probability of undertaking an acquisition in a given year rather than the number of acquisitions, since several small acquisitions could be equivalent to one large acquisition. Due to the incidental parameters problem (Chamberlain, 1980), I run logit estimation conditional on firms rather than logit with firm fixed effects. In addition, I also run a linear probability model estimated with OLS.

In all specifications, the interaction of *Equity Stake 1999* and *Post Reform* has a positive effect on the acquisition probability. In nonlinear difference-in-difference setups such as logit models, only the sign of the interaction coefficient can be interpreted (Puhani, 2012; Ai and Norton, 2003). Thus, I refer the reader to the univariate analysis above to get an impression of the economic magnitude of the effect. The linear probability model (OLS estimation) estimates a relative increase of the acquisition probability of eight percentage points. This result is statistically significant at the 5% level for all specifications. It is consistent with companies using the additional cash from liquidating their equity stakes to engage in additional acquisitions.

To get a better impression of the exact timing of the increase in acquisitions, I follow Gormley and Matsa (2011) and plot the point estimates of a modified version of Regression 1 in Fig. 4. In this modified regression setup, I allow the effect of owning an equity stake in 1999 to vary by year from six years before to eight years after the announcement of the tax reform. Before the tax reform, there is no apparent trend in the difference between firms with and without equity stakes, thus validating the parallel trend assumption. If anything, there seems to be a slight downwards trend in the relative acquisition probability of firms with equity stakes. After the announcement of the tax reform in 1999, we see a reversal in the trend and an increase in the number of acquisitions for companies with an equity stake in 1999. Especially, after the law comes into effect in January 2002 and companies can sell their equity stakes tax free, we see a large increase in the number of acquisitions of these companies, suggesting that the additional acquisitions were indeed caused by the cash windfalls following the reform.

Overall, the results suggest that companies experiencing a cash windfall engage in more acquisitions. This finding is not consistent with the perfect capital market assumption of Modigliani and

Miller (1958). So far, these results do not tell us whether the additional acquisitions represent overinvestment (free cash flow theory) or a reduction in underinvestment (financial constraints theory). I will address this question in the following section.

4.3. Announcement returns

After considering the number of acquisitions, I now examine whether these acquisitions are value increasing. I proxy for the profitability of the acquisitions using announcement returns. This approach assumes that the market did not fully anticipate the acquisition decision before the announcement and thus the stock return represents the change in firm value resulting from the acquisition. This assumption is standard to any analysis of acquisition announcement returns (e.g. Masulis, Wang, and Xie, 2007; Moeller, Schlingemann, and Stulz, 2005).

I start with a univariate analysis in Figure 5. As is common in the literature, I define *Announcement Return* as the acquirer return in the three trading days (t-1 to t+1) around the announcement date of the acquisition reported in SDC Platinum. In Panel A, I focus on raw returns. I study one-factor alphas in Panel B and four-factor alphas in Panel C. I use factors specifically constructed for the German market (see Appendix C). After the tax reform, companies with an equity stake in 1999 experience a decrease in the average acquisition announcement return by 0.5%. This finding suggests a reduction in average announcement returns for companies that received a cash windfall. We will now study whether this result transfers to a more rigorous analysis.

Table 5 reports the results of a difference-in-difference specification examining the change in acquirer announcement returns before and after January 1, 2000. The unit of observation is an acquisition. As above, I control for size, leverage, and Tobin's Q interacted with the post reform dummy as well as firm and industry-year fixed effects. I add the return in the past year (t-365 to t-20) to control for the momentum effect as reported by Jegadeesh and Titman (1993).

There are advantages and disadvantages to controlling for merger characteristics such as payment methods and the type of target. On the one hand, merger characteristics can clearly be endogenous to the cash windfall and thus controlling for them could distort the analysis. For example, it is perceivable

that firms receiving a cash windfall pay more in cash or expand more abroad. On the other hand, merger characteristics have been clearly related to announcement returns and it is standard to control for them. Therefore, I report regression results with and without these controls. The regressions without merger-specific controls show the total effect of cash windfalls on announcement returns including the differences coming from different merger characteristics, while the other regression setup shows the effect conditional on these (endogenous) variables.

The merger characteristics that I control for include *Cash Acquisition,* an indicator variable that is equal to one if the consideration listed in SDC Platinum is at least partially paid using cash, capital infusion, or debt reduction. Because the data item on considerations is often missing in SDC Platinum, I employ another indicator variable equal to one if I do not know the method of payment (in this case, *Cash Acquisition* is set to zero). I also have dummy variables for diversifying acquisitions (different 10 Fama-French industry of the target), cross-border deals, publicly listed targets, and targets which are independent companies rather than spinoffs sold by another company.

Robust to all these controls and fixed effects, companies that own equity stakes in 1999 experience a significant decrease in announcement returns after the tax reform. The effect is also economically significant. Companies receiving a cash windfall experience a decrease in announcement returns by roughly 1.2 percentage points. For one- and four-factor announcement alphas, the effect is approximately one percentage point. Interestingly, controlling for the deal characteristics does not change the result. This finding suggests that the difference comes not so much from acquiring different targets as from selecting worse targets and from overpaying, which is consistent with the free cash flow theory.

4.4. Interpretation of results

Our results indicate a clear reduction in *average* announcement returns for firms with a cash windfall. However, such a decrease does not necessarily mean that firm value is destroyed. Because average announcement returns of firms with cash windfalls remain positive after the tax reform (see Figure 5), the decrease might be explained by decreasing but still positive *marginal* returns to scale. To illustrate this argument, consider an example with two acquisition opportunities with net present values (NPV) of

two and one. If the firm is financially constrained and can take only one project, its average NPV is two. If it becomes unconstrained and takes both projects, the average NPV decreases to 1.5.

However, a simple calculation reveals that the decrease in average announcement returns from 0.65% to 0.05% is too large to be explained by decreasing (but positive) marginal returns. Even assuming all additional acquisitions have expected announcement returns of zero, the number of acquisitions would have to increase by 1,200% to drive the average return down to 0.05% (as (0.65+12*0)/13=0.05). Yet, we observe an increase of only 19%. Thus, the strong decrease in average announcement returns rejects non-agency theories of financial constraints and supports the free cash flow theory.

4.5. Yearly sum of announcement returns

It is possible to confirm the simple calculation above using a regression framework. For this purpose, I study the combined profitability of all acquisitions of a company (following Bertrand and Mullainathan, 2005). Since only positive net present value (NPV) projects are taken under the financial constraints theory, every additional acquisition should increase the sum of announcement returns. Consider the above example with two acquisition opportunities with NPVs of two and one. If the firm is financially constrained and can take only one project, its average NPV is two and the sum of NPVs is two. If it becomes unconstrained, the average NPV decreases to 1.5 due to decreasing marginal returns, but the sum of NPVs increases to three. However, under the free cash flow theory, additional investments are value destroying and will decrease the sum of announcement returns.

Therefore, I estimate difference-in-difference regressions in which the dependent variable is the sum of the announcement returns of all acquisitions a company undertakes within a year. If the additional cash allows managers to engage in additional value increasing acquisitions, we expect an increase in the *Sum of Announcement Returns*, while we expect a decrease under the free cash flow theory.

Table 6 displays the results of this analysis. Companies that receive a positive cash shock see a decrease in aggregate yearly announcement returns of 0.4%. In Regressions 2 and 3, I show that the effect is also significant for sums of one- and four-factor alphas at similar magnitudes. These results

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imply that the *additional* acquisitions not only have lower, but actually negative announcement returns and therefore destroy value. The result is also economically significant. It implies that approximately 0.4% of firm value is destroyed every year by additional acquisitions or worse execution of acquisitions. Over my sample period, this effect accumulates to 3.2%.

4.6. Differential effect by the size of the cash windfall

Firms with larger equity stakes in terms of total market capitalization receive a larger cash windfall from divesting. Thus, we might expect a stronger effect for these firms. To test this idea, I repeat the analyses from Tables 4 to 6, but split the treated group along the median in terms of the size of equity stakes as a fraction of the holder's market capitalization. I introduce two new dummy variables: *Large Equity Stake 1999* is equal to one if the company ranks above the median by aggregate value of equity holdings as a share of its market capitalization, while *Small Equity Stake 1999* equals one if it ranks below the median. If a company has no equity stakes, both variables are set to zero. By including both of these variables (interacted with *Post Reform*) in the regression, I estimate the effect of a large windfall and a small windfall both compared to the control group of firms without equity stakes.

Table 7 shows the results. In Panel A, I repeat the analysis of Table 4 on acquisition probability. Firms receiving a large cash windfall see a ten percentage point increase in acquisition probability, which is statistically significant at the 1% level. On the other hand, firms with a small cash windfall see a lower increase of six percentage points, which is not statistically significant. This finding suggests that a small cash windfall is not enough to trigger a significant increase in the number of acquisitions, but that a large cash windfall is.

In Panel B, the dependent variables are announcement returns and announcement alphas thus mirroring the analyses of Table 5. Firms receiving a large cash windfall see a large drop in average announcement returns of about 2% that is significant at the 1% level. On the other hand, firms with a small cash windfall see a lower decrease of 0.9%, which is not statistically significant. The result for yearly sum of announcement returns (Panel C) is similar: A large cash windfall leads to a decrease in yearly sum of announcement returns of 0.6 percentage points, significant at the 5% level, while a small cash windfall only leads to an insignificant decrease of approximately 0.2 percentage points. These

findings show that the effect on the firms' acquisition behavior depends on the size of the cash windfall, which is consistent with the free cash flow theory.

4.7. Differential effect by whether acquisitions are paid in cash or in stock

We expect the cash windfalls from the tax reform to have a stronger effect on acquisitions that are financed by cash. I examine this proposition in Table 8. Because payment information is missing for such a large part of the sample, I supplement the payment information with the information obtained from the predictive regression explained in Appendix D. In Panel A, I run the same regression as in Table 4 but instead of having *Acquisition Dummy* as the dependent variable, I use two different dependent variables: *Cash Acquisition*, which is equal to one if the firm undertakes a cash acquisition in the year and *Stock Acquisition*, which is equal to one if the firm undertakes a stock acquisition.

After the tax reform, firms with equity stakes in 1999 experience an increase in the likelihood of undertaking a cash acquisition, but there is no increase in the effect of undertaking a stock acquisition. In fact, after controlling for industry-year fixed effects, I find even a statistically significantly negative effect on the probability of undertaking a stock acquisition. A negative effect can be possible if following the cash windfall, cash acquisitions "crowd out" stock acquisitions, i.e. the firm decides to pay cash for acquisitions for which it would otherwise have used stock.

Next, in Panel B, I split the effect on announcement returns by whether the acquisition is likely paid for in cash or in stock. I run a specification that is similar to Table 5 in the paper, but instead of including *Equity Stake 1999 * Post Reform* as the main explanatory variable of interest, I include *Equity Stake 1999 * Post Reform* interacted with both *Cash Acquisition Predicted* and *(1- Cash Acquisition Predicted)*. This way, I split the main effect by whether it is a cash or a stock acquisition. While firms with equity stakes in 1999 experience a 1.2% decrease in announcement returns for cash acquisitions, the decrease for stock acquisitions is only 0.4% and statistically insignificant.

To conclude, both the effect on acquisition probability and the result on announcement returns is mainly driven by cash acquisitions. This finding is consistent with the tax reform providing firms with

equity stakes in 1999 with a cash windfall that they use to undertake more value-destroying cash acquisitions.

4.8. Differential effect by number and value of divestitures

In this section, I study whether there are stronger results for firms that sold more equity stakes. Using the *Who owns Whom?* data, I compute the number of equity stakes a firm sold as well as their value in EUR million. Thus, implicitly I assume that equity stakes with missing data have not been sold.

I start by examining the differential effect by number of divestitures. For this purpose, I assign firms into four groups by whether they divested one to two, three to four, five to ten or more than ten equity stakes. Then I run a regression similar to the standard difference-in-difference setup used in Table 4, but instead of interacting *Post Reform* with *Equity Stake 1999*, I interact it with four dummy variables for these four groups indicating the number of divestitures. Fixed effects and control variables are the same as in the main regression. Then, I plot the coefficients for the four quartiles as well as the base case of no divestitures (which also includes firms without equity stakes) in Fig. 6.

In Panel A, the dependent variable is *Acquisition Dummy*, i.e. I examine the change in acquisition probability. After the tax reform all firms with divestitures increased the number of acquisitions relative to the control group without divestitures and with one exception the increase in acquisition probability is monotonically increasing with the number of divestitures. In Panel B, I find similar results for announcement returns measured as *Yearly Sum of Announcement Four-Factor Alphas*. With the exception of one group, announcement returns are monotonically decreasing with the number of divestitures.

Next, in Fig. 7, I run the same specifications, but instead of splitting the sample by the *number* of divestitures, I split it into quartiles by the *value* of divestitures. After the tax reform, all firms with divestitures experience an increase in acquisition probability and a decrease in announcement returns relative to the control group without divestitures. While there is no monotonicity along the quartiles, the top quartile by divestitures experienced clearly the largest increase in acquisitions probability and the largest decrease in announcement returns. One would expect such a result concentrated in the top

quartile given that the distribution of divestiture values is highly positively skewed, i.e. the top quartile has significantly more divestitures than the other three quartiles.

These results are consistent with a larger effect on acquisition activity if more stakes are actually divested, thereby supporting the previous findings in line with the free cash flow theory. However, these results are only indicative, because they are affected by endogeneity concerns as the decision to divest equity stakes is endogenous.

4.9. Timing of effects relative to divestitures

In this section, I study the timing of the effects on acquisition activity relative to the divestitures of equity stakes. For this purpose, I examine a firm's acquisition activity relative to its first confirmed divestiture of an equity stake. I define the year of divestiture as the first year in which the equity stake does not appear anymore in the *Who owns Whom?* database or in which it is reduced by at least 50%.

I regress *Acquisition Dummy* and *Acquisition Announcement Returns* on indicator variables indicating the year relative to the first divestiture of an equity stake from -4 to +4 years. For example, the variable "2" is equal to one in the second year after a divestiture and zero for all other years and for firms that do not own equity stakes. This setup is very similar to the one used in Fig. 4, with the exception that the indicator variables of interest are not defined by calendar year but relative to the first divestiture. I also include the usual fixed effects and control variables.

I plot the coefficients of the indicator variables in Fig. 8. In Panel A, the dependent variable is *Acquisition Dummy*. As can be seen in the graph, the acquisition probability is generally fairly constant, but clearly spikes in the first year after the divestiture. This finding is consistent with firms using the cash windfall from the divestiture to engage in additional acquisitions in the following year. The fact that the increase in acquisition activity is only visible in the year following the divestiture (rather than the year of the divestiture) suggests a certain lead time to initiate additional acquisitions.

Next, in Panel B, I run the same type of analysis but use *Four-Factor Acquisition Announcement Alphas* as the dependent variable. There is a large reduction in acquisition announcement returns of about one percentage point in both the year of the divestiture and the following year. This decline in

acquisition announcement return is consistent with the free cash flow theory: firms use the cash windfall from the divestiture to overpay for acquisitions.

Notice that for announcement returns I find an effect already in the year of the divestiture, while I find the effect on acquisition probabilities only in the year after the divestiture. This difference is consistent with the idea that it takes some time to initiate additional acquisitions after a cash windfall but that a firm can directly use the additional cash to overpay for ongoing acquisitions that have already been initiated.

The results on the timing are generally consistent with the idea that firms used the cash proceed from their divestiture of equity stakes to engage in value destroying acquisitions.

4.10. Capital expenditures

One might be concerned that the increase in acquisition activity is offset by a decrease in capital expenditures, i.e. that acquisitions act as a substitute for internal growth. Therefore, I now study how capital expenditures change for companies with equity stakes relative to companies without equity stakes after the tax reform. I run the same regression setup as in Table 4, but using capital expenditures over assets as the dependent variable.

My sample contains both financial and non-financial companies. However, capital expenditures is an odd measure for investments of financial companies. Normally, the measure of choice for the expansion of banks is the amount of loans issued. On the other hand, high capital expenditures are also a sign of expanding businesses (e.g. new offices) or of consuming perquisites (e.g. more representative headquarters). Therefore, I run the regressions for the full sample as well as for the subsample of non-financial companies.

Table 9 depicts the results of this analysis. On the full sample, there is a positive effect on capital expenditures of around 1% of assets. The effect is significant at the 5% level. However, if I exclude financial companies in Regressions 3 and 4, the effect is smaller and not statistically significant anymore. However, it is still a sizeable 0.7% of assets, which represents an increase of 13% relative to the sample median. This finding suggests that firms with cash windfalls increased their capital

expenditures at least somewhat and certainly shows that acquisitions are not merely a replacement for lower capital expenditures.

4.11. Dividends

In perfect capital markets, managers that maximize shareholder value should pay out a cash windfall to the company's shareholders. Therefore, I study how dividends as a fraction of assets changed following the tax reform. I use the same regression setup as above. The results are displayed in Table 10. There is virtually no increase in dividends, with all regression coefficients being insignificant and around 0.1%. This result suggests that almost no part of the cash windfalls is paid out to shareholders via dividends, consistent with the free cash flow theory.

5. Robustness checks

5.1. Matched sample

The companies holding equity stakes in 1999 are larger than the sample average and not evenly distributed among industries. As a further step to address concerns about the violation of the parallel trend assumption, I rerun my main tests using a matched control-sample. For each company with an equity stake in 1999, I select the company within the same 10 Fama-French industry that is closest by log market capitalization in 1999. I ensure that the same company does not enter the regression twice. If two companies have the same best match, the second best match is chosen instead.

Table 11 displays the results of this analysis. In Panel A, I re-estimate the effect of cash windfalls on acquisition activity. Using the matched sample I find very similar results of an increase in acquisitions probability of 8.2% in the linear probability model. Thus, the matched sample analysis suggests that the baseline regression already accounts well enough for differences in characteristics between firms with and without equity stakes in 1999. In Panel B, I re-estimate the effect of cash windfalls on the average announcement return. Here, the matching approach actually increases the results to 1.5 percentage points (1.2 in terms of alpha), suggesting that the main regressions might underestimate the effect. In Panel C, I study the effect on the *Sum of Announcement Returns*, replicating regressions from Table 6. I find a negative effect of 0.4 percentage points (0.3 in terms of alpha) which is of similar economic magnitude as the results in Table 6. Overall, the matched sample approach yields results consistent with the main

regressions. For some specifications, the reported effects actually increase in economic magnitude, suggesting that the differences in industry and size composition in the treated and control sample do not cause the effects reported in the main specification.

5.2. Shorter sample period

Throughout the paper, I use a relatively long sample period from 1992 to 2007 to account for a potential delayed reaction to the tax reform. A delayed reaction is likely, because the tax reform, while announced in December 1999, did not take effect until 2002. At that time, the German stock market was experiencing a bear market, which might have led some firms to postpone the sale of equity stakes further.

However, I show that the results are robust to using a shorter sample period from 1996 to 2005. Table 12 displays the results. For acquisition probability, the results are almost identical. For announcement returns, they are close to identical in terms of coefficients, but due to the lower number of observations they are not statistically significant. For yearly sum of announcement returns the results are even larger over the shorter period (0.9 percentage points vs. 0.4 percentage points). This analysis suggests that our results are robust to using a shorter sample period.

5.3. Controlling for reverse equity stakes

When a firm sells an equity stake in another firm, there are two effects: The selling firm receives extra cash and the firm whose equity is sold experiences a change in its ownership, which can affect its corporate governance. I focus on the first effect in this paper, while the effect of the ownership change is examined in Sautner and Villalonga (2010). In this section, I address the concern that the ownership effect could be driving our results as well. In general, it seems unlikely that ownership changes caused by the tax reform drive our results, because both the treated and the control group should be affected. However, given that cross-holdings were relatively common in Germany, it could be possible that firms owning equity stakes are also more likely to be owned via an equity stake. In this case, ownership changes could bias our results.

To address this concern, I rerun our main analysis, but include as an additional control the variable *Reverse Equity Stake 1999* (interacted with *Post Reform*). *Reverse Equity Stake 1999* is a

dummy variable equal to one if at least one publicly listed German firm owns an equity stake below 20% in the company in December 1999. Thus the definition is the same as for Equity Stake 1999, but in the opposite direction, i.e. it is equal to one if the firm is owned via an equity stake rather than if it owns an equity stake. I base this variable on ownership of firms that are German and publicly listed for two reasons: First, to ensure that it is the exact counterpart to *Equity Stake 1999*, and second, because the tax reform only applied to German firms, and private firms are likely to be holding companies of private owners, which are less likely to sell after the tax reform.

The result of this robustness check are presented in Table 13. Including the new control variable does not change the results much. The result for acquisition probability is actually large, while the effect on announcement returns is unchanged. This finding confirms that our results are indeed caused by the cash windfalls rather than being spuriously related to governance changes.

5.4. Placebo test

In difference-in-difference analyses, it is common to confirm the parallel trend assumption using a placebo test. I conduct a placebo test by assuming the tax reform would have taken place in December 1994. I use 1990-1994 as the pre-event period and 1995-1999 as the post-event period. I use the same classifications of a company owning an equity stake as above, i.e. December 1999. I also take the control variables to be as of 1999 to have everything else besides the event timing comparable to my main analysis. However, the results do not materially change when I instead use control variables as of December 1994.

The results are reported in Table 14. First, I repeat the analysis on acquisition probability. As one would expect, the results are not statistically significant and generally close to zero. Then, I repeat the analyses on announcement returns. Here the results are insignificant as well and point into the opposite direction of our main specification. Overall, the placebo test confirms that our results are not driven by mechanical relations or violations of the parallel trend assumption.

6. Conclusion

In this paper, I study cash windfalls resulting from the German capital gains tax reform in 2000. Before the reform, many German companies held minority equity stakes in other unrelated firms. These equity stakes often had high market values, making up a sizeable part of the holder's assets. The capital gains tax of 50% prevented companies from selling their equity stakes even if there was no economic reason to hold on to them. The tax reform completely abolished the capital gains tax, allowing companies to sell their stakes and cash in their capital gains.

Because the tax reform only affected companies that owned equity stakes, I can use difference-in-difference estimation to examine the effect of this cash windfall on firms' acquisition and investment activity. I find that companies able to sell an equity stake after the tax reform, engage in more acquisitions and that these acquisitions are value destroying. The effects are stronger if the market value of the equity stakes and thus the cash windfall is larger. I also find some increase in capital expenditures, but no effect on dividends. Overall, my results suggest that the cash windfalls which result from the divestitures of the equity stakes of *Germany Inc.* were used to engage in empire building through acquisitions. This behavior is consistent with the free cash flow theory and shows how the ability to engage in assets sales can affect investment.

Appendix A: Variable definitions

This table displays the variable definitions for all variables used in the regressions. All variables are winsorized at the 1% and 99% thresholds.

Panel A: Firm-year-level variables and year-level variables

Variable name	Definition
Post Reform	Dummy variable equal to one in years 2000 to 2007 and zero in years 1992 to 1999.
Acquisition Dummy	Variable equal to one if the firm undertook an acquisition in the year. I include acquisitions of private companies, but exclude acquisitions in which the acquirer owns more than 25% before or less than 50% after the acquisition. The variable is zero if the firm did not undertake an acquisition in the year, but was covered in Worldscope or Compustat Global.
Sum of Announcement Returns	Sum of acquirer returns from t-1 to t+1 around the announcement date of all acquisitions the firm undertook within the year. This variable is set to zero if the firm did not undertake an acquisition in the year, but was covered in Worldscope or Compustat Global.
Yearly Sum of Announcement One-Factor Alphas	Sum of acquirer one-factor alphas from t-1 to t+1 around the announcement date of all acquisitions the firm undertook within the year. This variable is set to zero if the firm did not undertake an acquisition in the year, but was covered in Worldscope or Compustat Global.
Yearly Sum of Announcement Four-Factor Alphas	Sum of acquirer four-factor alphas from t-1 to t+1 around the announcement date of all acquisitions the firm undertook within the year. This variable is set to zero if the firm did not undertake an acquisition in the year, but was covered in Worldscope or Compustat Global.
Yearly Sum of Residuals (raw returns)	Sum of residuals from a regression of Announcement Return on Avg. Return (-365,-20), Cash Acquisition, No Payment Information, Diversifying Acquisition, Cross-Border Deal, Public Target, Independent Target. The sum is taken over all the acquisition the company undertook in that year. This variable is set to zero if the firm did not undertake an acquisition in the year, but was covered in Worldscope or Compustat Global.
Capital Expenditures	$\frac{Capital\ Expenditure}{Assets}$
Dividends	$\frac{Total\ Dividends}{Assets}$

Panel B: Firm-level variables

Variable name	Definition
Equity Stake 1999	Dummy variable equal one if the firm owns at least one equity stake below 20% in another company in December 1999. I also include the equity stakes of subsidiaries if the subsidiary is held at least with 75%.
Size	$Log\ (market\ capitalization)$ Where market capitalization is the market value of equity of the firm in December 1999.
Leverage	$\frac{Book\ value\ of\ debt}{Book\ value\ of\ assets}$ (in December 1999)
Tobin's Q	$\frac{Market\ capitalization}{Book\ value\ of\ equity}$ (in December 1999)
Industry	10 Fama-French industry groups
Large Equity Stake 1999	Dummy variable equal to one if the company is above the median by total EUR size of its minority equity stakes in 1999. It is equal to zero if the firm is below the median or does not own equity stakes in 1999. For equity stakes held in private companies, I estimate the market value of the company by multiplying the nominal capital ("Kapital") reported in *Who owns Whom?* with the average ratio of market capitalization to nominal capital for public firms.
Small Equity Stake 1999	Dummy variable equal to one if the company is below the median by total EUR size of its minority equity stakes in 1999. It is equal to zero if the firm is above the median or does not own equity stakes in 1999. For equity stakes held in private companies, I estimate the market value of the company by multiplying the nominal capital ("Kapital") reported in *Who owns Whom?* with the average ratio of market capitalization to nominal capital for public firms.
Reverse Equity Stake 1999	Dummy variable equal to one if at least one publicly listed German firm owns an equity stake below 20% in this company in December 1999. I also include cases in which the equity stake is held through a chain of subsidiaries at the 75% cutoff. Thus the definition is the same as for Equity Stake 1999, but in the opposite direction, i.e. it is equal to one if the firm is owned via an equity stake rather than that it owns an equity stake.

Panel C: Acquisition-level variables

Variable name	Definition
Announcement Return	Acquirer announcement return from t-1 to t+1 days around the acquisition announcement day according to SDC Platinum.
One-Factor Announcement Alpha	Acquirer announcement one-factor alpha from t-1 to t+1 days around the acquisition announcement day according to SDC Platinum. For a more detailed description see Appendix C.
Three-Factor Announcement Alpha	Acquirer announcement four-factor alpha from t-1 to t+1 days around the acquisition announcement day according to SDC Platinum. For a more detailed description see Appendix C.
Diversifying Acquisition	Dummy variable equal to one if the acquisition target operates in another 10 Fama-French industry.
Cross-Border Deal	Dummy variable equal to one if the acquisition target is not located in Germany.
Cash Acquisition	Dummy variable equal to one if the consideration listed in SDC Platinum is at least partly paid using cash, capital infusion, or debt reduction. If there is no information on payment method, this variable is set to zero.
Cash Acquisition Predicted	For acquisitions for which I have payment information, this variable is the same as *Cash Acquisition*. For acquisitions without payment information, this variable is equal to one if the probability of a cash acquisition according to the predictive regression in Appendix D is at least 75% and equal to zero if the probability of a cash acquisition is below 75%.
No Payment Information	Dummy variable equal to one if SDC Platinum does not provide information on the payment method.
Public Target	Dummy variable equal to one if the acquisition target has a SEDOL.
Independent Target	Dummy variable equal to one if there is no parent company of the target listed in SDC Platinum.

Appendix B: Estimating capital gains of equity stakes

Panel A displays market values and book values of equity stakes as gathered from annual reports for the five financial companies with the largest equity stakes. *Description of Item* gives the exact description from the annual report. *Book to Market* is the book value divided by the market value in percent. *My estimated market value* is the aggregate market value of equity stakes in my sample that I estimate for these companies. Panel B displays returns of firms in which an equity stake was held up to December 31, 1999 to get an idea of the likely capital gains at which stakes are held at the time of the tax reform. I display returns at three horizons: 3-year, 5-year and 10-year in percent. I display means and medians of returns and which percent of stakes had positive returns and returns above 15%, 25% and 50%. The analysis is done at the equity stake level, i.e. if two firms hold an equity stake in a particular firm, this firm's returns are included twice.

Panel A: Valuations of equity stakes in annual reports

Name of company	Description of item	Market value (EUR bn)	Book value (EUR bn)	Book to market (%)	My estimated market value (EUR bn)
Allianz	Investments in affiliated enterprises, joint ventures, and associated enterprises	23.4	8.2	35	18
Deutsche Bank	Significant shareholdings in the non-banking sector	22	6.2	28	17.3
Dresdner Bank	Anteile an nicht verbundenen Unternehmen	10.1	2.8	28	13.7
Bayerische Hypo- und Vereinsbank	Investments in non-bank companies above 5%	12.7	6.7	53	6.2
Munich Re	Investments in affiliated and associated enterprises	27.3	10.6	39	4.8
Average				36	

Panel B: Stock returns prior to tax reform

Time frame	Mean return	Median return	Positive return	Return >15%	Return >25%	Return >50%
3-years (1997-1999)	63.1	48.5	81.2	76.5	58.8	48.2
5-years (1995-1999)	103.2	87.0	86.4	81.5	81.5	63.0
10-years (1990-1999)	153.8	130.5	85.3	84	82.7	76
Observations	85					

Appendix C: Additional information on dataset construction

C.1. Ownership data

I start constructing my sample using the *Who owns Whom?* (Wer gehört wem?) database on equity stakes in Germany as of July 1999. I match companies from *Who owns Whom?* to the other data sources using German security identifiers (Wertpapierkennnummern or WKN) as well as matching by name, since not all publicly listed companies in *Who owns Whom?* have a security identifier. I control by hand that all matches are correct.

Pyramid structures within corporations, i.e. subsidiaries owning subsidiaries, are common in Germany as they do not have the same tax disadvantages as in the U.S. (Faccio and Lang, 2002). Therefore, I also take into account the equity stakes of subsidiaries. I follow the equity stakes "up the ownership chain" as long as any link consists of at least 75% ownership. To illustrate: if company A owns company B by at least 75%, I assign the equity stakes of company B to company A. I make sure that in such a case, company B does not enter the sample to avoid double counting. Basically, company B is treated as a subsidiary of company A and not as an independent company. I choose the threshold of 75%, because 25% is the threshold for a blocking minority in German corporation law. To illustrate: If company A owns 80% in company B and company B has a 10% equity stake in company C, company A is treated as holding 8% in company C and company B is not part of my sample. If A held only 60%, I would treat the equity stake as a 10% equity stake belonging to company B.

C.2. Value of equity stakes

I estimate the value of an equity stake in 1999 by multiplying the percentage equity owned with my estimate of the firm's market value. The percentage owned is reported in the Who owns Whom? database. For equity stakes in publicly listed firms, I take the market value from Datastream or Compustat Global. For private companies, I estimate the market value using nominal capital (Kapital) as reported by Who owns Whom?. First, I compute the ratio of market value to nominal capital for publicly listed companies. Then, I estimate the market value of private companies by multiplying their nominal capital with this ratio.

C.3. Announcement returns

I use SEDOLs to match mergers and acquisition data from SDC Platinum data to the other datasets. I assign an acquisition to a company if the acquirer's SEDOL or the acquirer's parent SEDOL matches any of the company's SEDOLs or the SEDOL of a company in which the company owns at least 75%. For stock return data, I use Datastream and Compustat Global. Many companies have different share classes. I calculate the announcement returns based on the share class which is listed as "primary share class" on Datastream. Since individual equity return data in Datastream can sometimes have severe errors (Ince and Porter, 2006), I set any daily return in Datastream or Compustat Global whose absolute value is above 20% to missing. There are many days on which either Datastream or Compustat Global has missing return data. For each company and each month, I choose the source that has fewer missing observations in that month.

To compute alphas, I construct the four-factors of the Carhart (1997) model for Germany following the instructions on the website of Kenneth French[11]. I use the one month Frankfurt interbank rate as the risk-free rate. As the market return, I use the Germany Datastream Index, which consists of 250 German companies. To compute HML, SMB and MOM factors, I use only German companies for which I have market capitalization and a positive book value at the end of the prior year. At the beginning of each year, I split the firms into above/below median in terms of size and in Top 30%, Bottom 30% and rest for market-to-book ratio. For the six portfolios thus formed, I compute value weighted returns for each day and then compute the factors as:

$$SMB = \frac{1}{3} * (Small\ Value + Small\ Neutral + Small\ Growth) - \frac{1}{3} * (Big\ Value + Big\ Neutral + Big\ Growth)\ (3)$$

$$HML = \frac{1}{2} * (Small\ Value + Big\ Value) - \frac{1}{2} * (Small\ Growth + Big\ Growth) \qquad (4)$$

To compute the MOM factor, I sort firms in each month by market capitalization at the beginning of the year into above/below median and by sum of return on months t-12 to t-2 in Top 30%, Bottom 30% and rest. For the firm to be included, the returns over t-12 to t-2 must be based on at least 3 months

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[11] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

of data. For the six portfolios thus formed, I compute value weighted returns for each day and then compute the momentum factor as:

$$MOM = \frac{1}{2} * (Small\ High + Big\ High) - \frac{1}{2} * (Small\ Low + Big\ Low) \tag{5}$$

For each stock and each month, I then compute the beta with respect to those factors from a regression over the past t-12 to t-2 months. For the one-factor alpha, I compute the beta using the regression:

$$r_{c,t} = \alpha + \beta * (r_{m,t} - r_{f,t}), \tag{6}$$

where $r_{c,t}$ is the daily company return, $r_{m,t}$ is the daily market return and $r_{f,t}$ is the daily risk-free rate. For the four-factor alpha, I compute the regression:

$$r_{c,t} = \alpha + \beta_m * (r_{m,t} - r_{f,t}) + \beta_{HML} * HML + \beta_{SMB} * SMB + \beta_{MOM} * MOM \tag{7}$$

To compute the announcement return alphas, I use the betas and factors constructed as described above and compute the one-factor alpha as:

$$One\ factor\ alpha_{c,t} = r_{c,t} - \beta_c * (r_{m,t} - r_{f,t}), \tag{8}$$

where $r_{c,t}$ is the daily company return, $r_{m,t}$ is the daily market return and $r_{f,t}$ is the daily risk-free rate. β_c is the company beta computed over months t-12 to t-2 as described above.

Similarly, I compute the four-factor alpha as:

$$Four\ factor\ alpha_{c,t} = r_{c,t} - \beta_c * (r_{m,t} - r_{f,t}) - \beta_{HML} * HML_t - \beta_{SMB} * SMB_t - \beta_{MOM} * MOM_t, \tag{9}$$

Appendix D: Estimating payment methods

SDC Platinum and Zephyr provide information on payment method for only 27% of acquisitions. For the other acquisitions, I estimate payment method using the predictive regression presented below in Table D.1. I regress payment type on the different characteristics and use the coefficients of this regression to predict the payment type for acquisitions without payment information. The regression has a fairly high Pseudo-R^2 of 35%. I create a new variable called *Probability of Cash Acquisition*, which is the probability of a cash acquisition as predicted by this regression. For acquisitions without payment information, the average *Probability of Cash Acquisition* is 91%, which is much closer to the 93% of cash acquisitions than to the 55% of stock acquisitions. For 97% of the acquisitions without payment information, the probability of being a cash acquisition is above 75%, showing that the acquisitions without payment information have characteristics which suggest that most of them were cash acquisitions.

Table D.1: Predictive regressions for payment method

This table displays a logit regression of payment method on different merger characteristics. The independent variable is a dummy variable equal to one if the acquisition was paid for at least partly in cash. *Synopsis mentions "merger"* is a dummy variable equal to one if the synopsis describing the acquisition contains the term "merge". *Sales of Target* is the sales of the target in million $, replaced with the sample mean if missing. *Asset purchase* is a dummy variable equal to one if the consideration sought is listed as "Assets" in SDC Platinum. *Increase in Acquirer Shares Outstanding* is a dummy variable equal to one if shares outstanding increased for the acquirer from one month before to one month after the effective date of the acquisition, and replaced by zero if missing. *Sales of Target Missing* and *Increase in Acquirer Shares Outstanding Missing* are dummy variables equal to one if the respective variable is missing. Other variables are defined in Appendix A. All standard errors are clustered at the firm level. I report t-statistics below the coefficients in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% level.

	Cash Acquisition Dummy
	(1)
Synopsis mentions "merger"	-3.860***
	(-9.69)
Sales of Target	0.000
	(0.26)
Asset Purchase	0.788**
	(2.30)
Diversifying Acquisition	0.273
	(0.73)
Cross-Border Deal	1.223***
	(4.13)
Public Target	-0.142
	(-0.43)
Independent Target	-0.352
	(-1.02)
Increase in Acquirer Shares Outstanding	-0.045
	(-0.12)
Sales of Target Missing	-0.543
	(-1.28)
Increase in Acquirer Shares Outstanding Missing	-0.428
	(-0.83)
Observations	904
Pseudo R^2	0.35

The fact that most acquisitions without payment information are cash acquisitions is confirmed in a simple comparison of means shown below in Table D.2. In this table, I display sample means for different variables for the three subsamples of stock acquisitions, cash acquisitions, and acquisitions without payment information. The means of the no payment information group are much closer to the cash acquisition group than to the stock acquisition group for all variables except *Cross-Border Deal*. This result suggests that the acquisitions without payment information are predominantly cash acquisitions.

Table D.2: Acquisition characteristics by payment type

This table displays summary statistics on acquisition characteristics split by payment information. I split the sample into whether the acquisition was paid for using stock or cash or whether I do not have any payment information. I display the sample mean for different variables. *Synopsis mentions "merger"* is a dummy variable equal to one if the synopsis describing the acquisition contains the term "merge". *Asset purchase* is a dummy variable equal to one if the consideration sought is listed as "Assets" in SDC Platinum. *Increase in Acquirer Shares Outstanding* is a dummy variable equal to one if shares outstanding increased for the acquirer from one month before to one month after the effective date of the acquisition. *Probability of Cash Acquisition* is the probability that the acquisition has been paid in cash as predicted by the regression model in Table 4. Other variables are defined in Appendix A.

Mean acquisitions characteristics by payment type

Variable	Stock Acquisition	Cash Acquisition	No Payment Information
Synopsis mentions "merger"	0.56	0.026	0.023
Sales of Target (m $) (if not missing)	4556.9	3248.1	188.1
Asset Purchase	0.54	0.61	0.76
Diversifying Acquisition	0.21	0.29	0.37
Cross-Border Deal	0.48	0.80	0.52
Public Target	0.60	0.54	0.55
Independent Target	0.39	0.40	0.58
Increase in Acquirer Shares Outstanding (if not missing)	0.23	0.15	0.13
Probability of Cash Acquisition	0.55	0.93	0.91
Observations	99	805	2474

Appendix E: Payment methods for partial acquisitions

In this appendix, I study how the payment method depends on the fraction of equity that a firm acquires. For this purpose, I use a sample of all acquisitions in SDC Platinum undertaken by a German company between 2000 and 2007 (even if they are not related to companies in my sample). I split this sample by percentage of shares acquired into three groups: full acquisitions (buyer acquires 100% of target), partial acquisitions (buyer acquires less than 100% but more than 20% of target), and acquisitions of equity stakes (buyer acquires less than 20% of target). I use the cutoff of 20% because it is the same cutoff I use to define an equity stake. For each of the samples I study the payment method as reported in SDC Platinum.

I present the results in Table E below. Acquisitions are more likely to be paid in cash if a smaller share of the company is purchased. For full acquisitions, 87.6% are paid in cash, while it is 93.1% for partial acquisitions and 96.8% for acquisitions of equity stakes. While these results are based only on the 27% of the sample for which payment information is available, the analysis in Appendix D suggests that acquisitions without payment information are at least as likely to be cash acquisitions as acquisitions with payment information.

This analysis shows that acquisitions are more likely to be paid in cash the smaller the acquired stake in the company. Specifically, about 97% of the acquisitions of similar size as the divestitures of the equity stakes (<=20%) are paid in cash.

Table E.1: Payment method by fraction of equity acquired

In this table, I display the payment methods in a sample of acquisitions of German companies between 2000 and 2007 taken from SDC Platinum. I split the results by whether the acquirer sought to acquire 100%, less than 100% but more than 20%, or less than 20% of the company. *Percentage with Payment Information* gives the fraction of acquisitions that have payment information. *Percentage of Cash Acquisitions* gives the percentage of acquisitions that are at least partially paid in cash.

Payment methods of acquisitions from 2000 to 2007

Variable	Acquisition of an Equity Stake (<=20%)	Partial Acquisitions (>20% and <100%)	Full Acquisitions (=100%)
Percentage with Payment Information	27.8	28.6	26.3
Percentage of Cash Acquisitions	96.8	93.1	87.6
Number of Acquisitions	626	2197	2973

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Figure 1: Event study: announcement of the tax reform

Panel A displays mean returns of companies with and without equity stakes around the announcement of the tax reform on December 23, 1999. Panel B displays the difference in daily mean returns between companies with large equity stakes and companies without equity stakes. A company is defined as having large equity stakes if its equity stakes have an aggregate value of at least 1% of its market capitalization. Panel C splits the returns for companies with large equity stakes into financial and non-financial companies. For Panel C, ***, **, * indicate significance at the 1%, 5%, and 10% level, based on a time series comparison from July 1999 to June 2000.

Panel A: Stock returns around the announcement of the tax reform
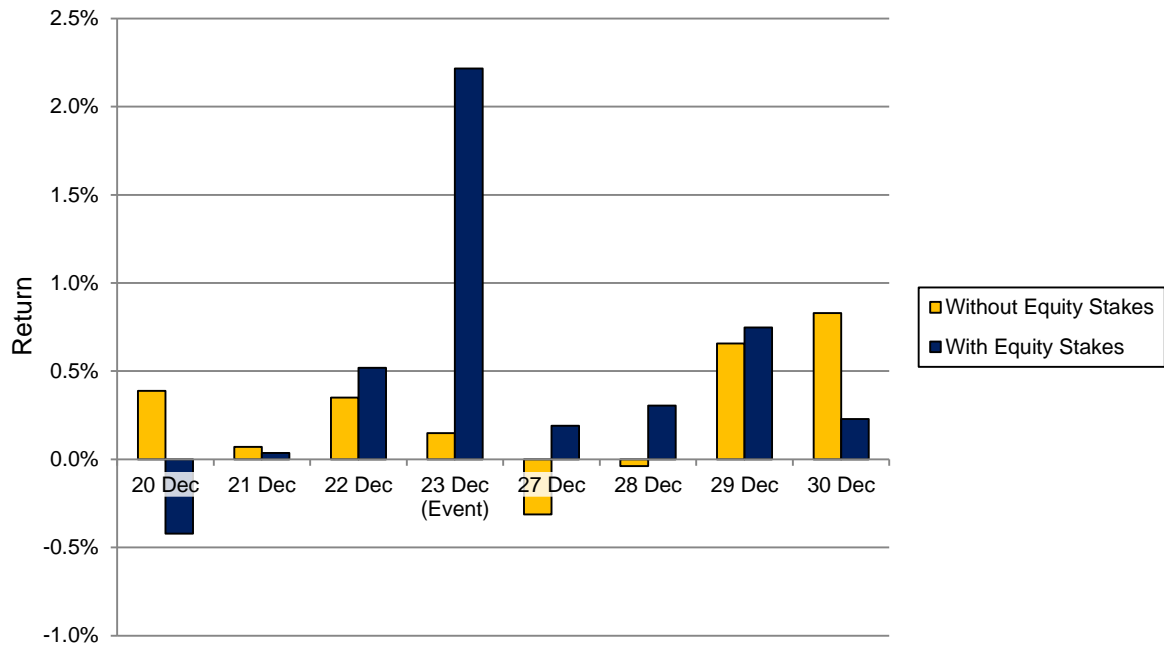
Panel B: Return difference with large equity stakes and without equity stakes
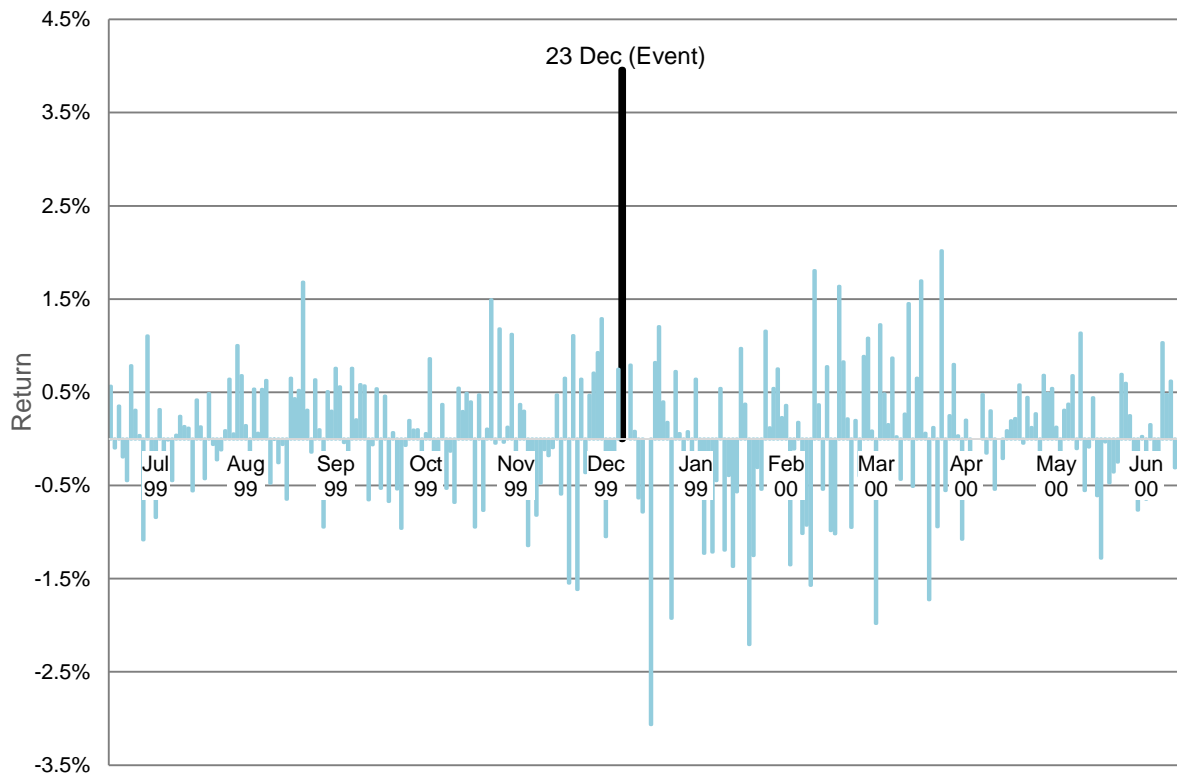
43
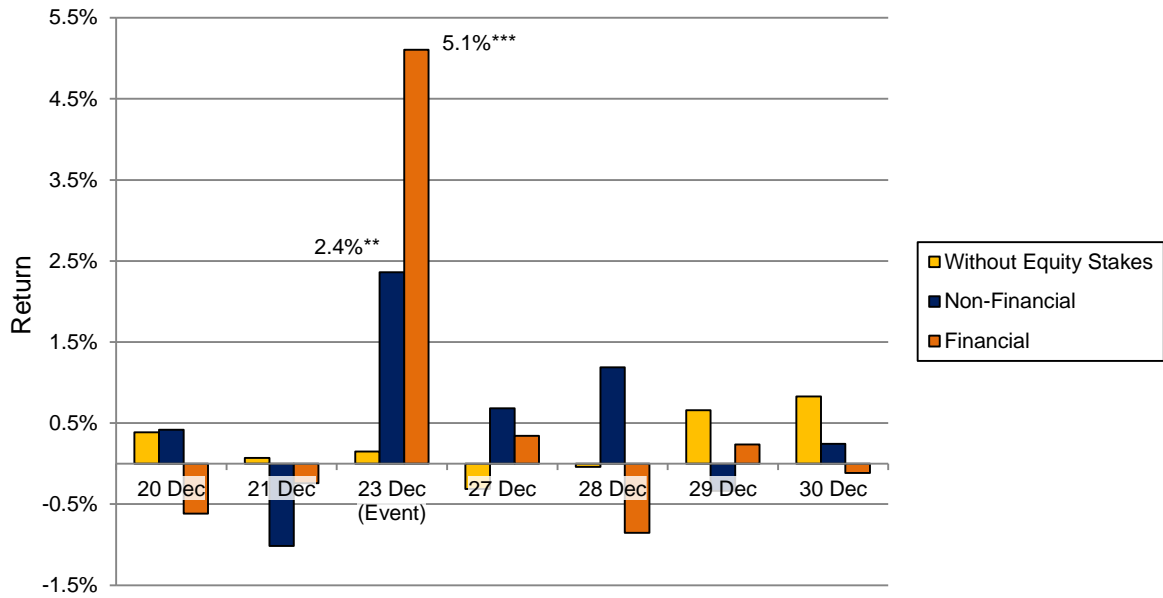
Figure 2: Companies by industry

This figure displays the companies with equity stakes in 1999 and the companies without equity stakes in 1999 according to the 10 Fama-French industry groups.

Companies by 10 Fama-French industries
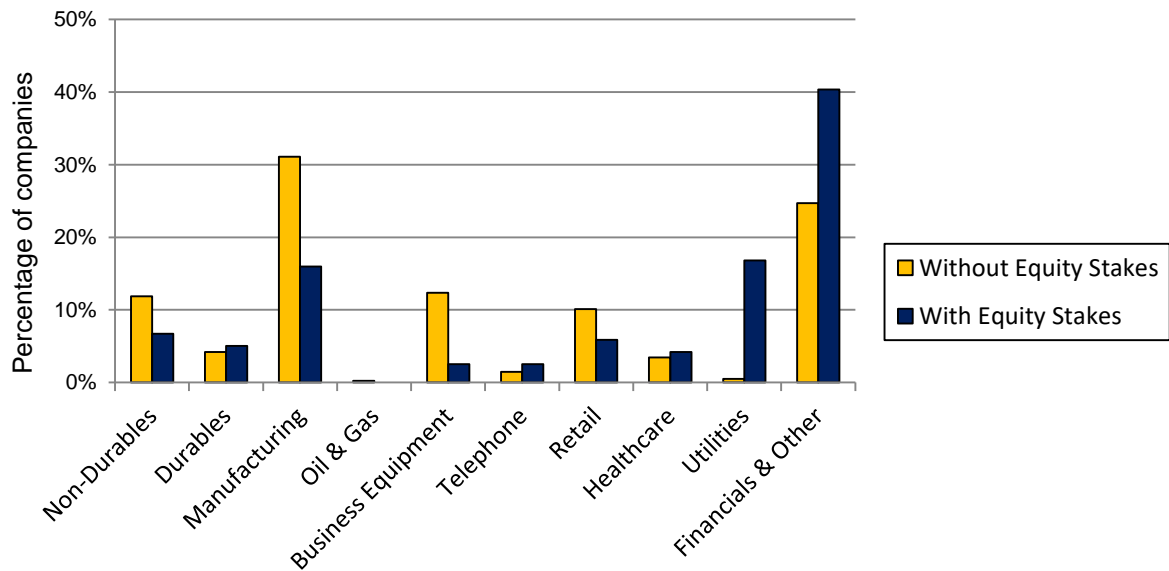
Figure 3: Change in acquisition probability

This figure displays the average percentage of companies in a certain year that undertook an acquisition. In the first graph, I display this average for companies with equity stakes in 1999 and in the second graph for companies without equity stakes in 1999. The "before tax reform" period is 1992 to 1999; the "after tax reform" period is 2000 to 2007.

Changes in acquisition probability following the tax reform
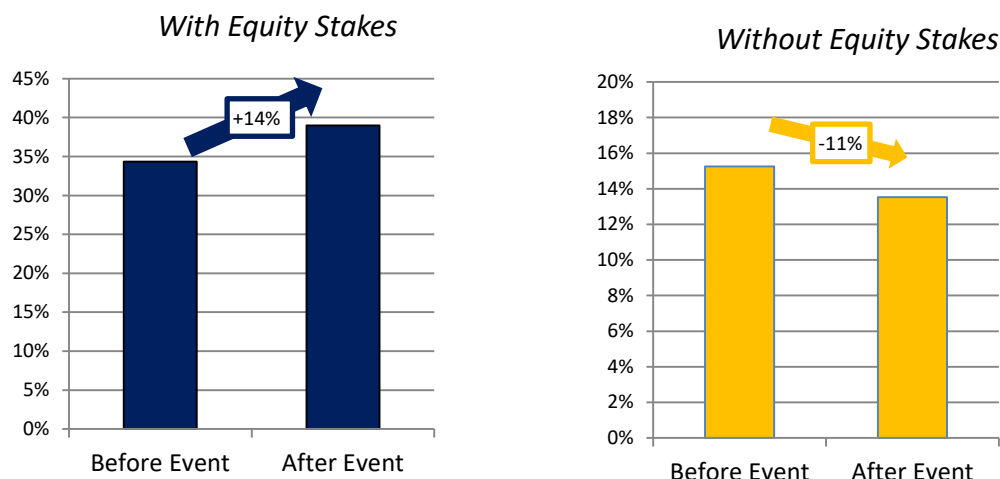
Figure 4: Effect of cash windfall on acquisition probability by year

This figure reports the point estimates from a logit regression conditional on firms of *Acquisition Dummy* on the interaction between *Equity Stake 1999* and yearly dummies from 1994 to 2007. Additional controls in the regression include year fixed effects as well as *Size*, *Leverage*, and *Tobin's Q* in 1999 interacted with *Post Reform*. The specification is the same as that reported in Table 4 Regression 1, except that *Equity Stake 1999* is interacted with yearly dummies from 1994 to 2007 instead of *Post Reform*. The two vertical lines indicate the announcement of the tax reform in December 1999 and the tax reform coming into effect in January 2002.

Acquisition probability (Log odds ratio)
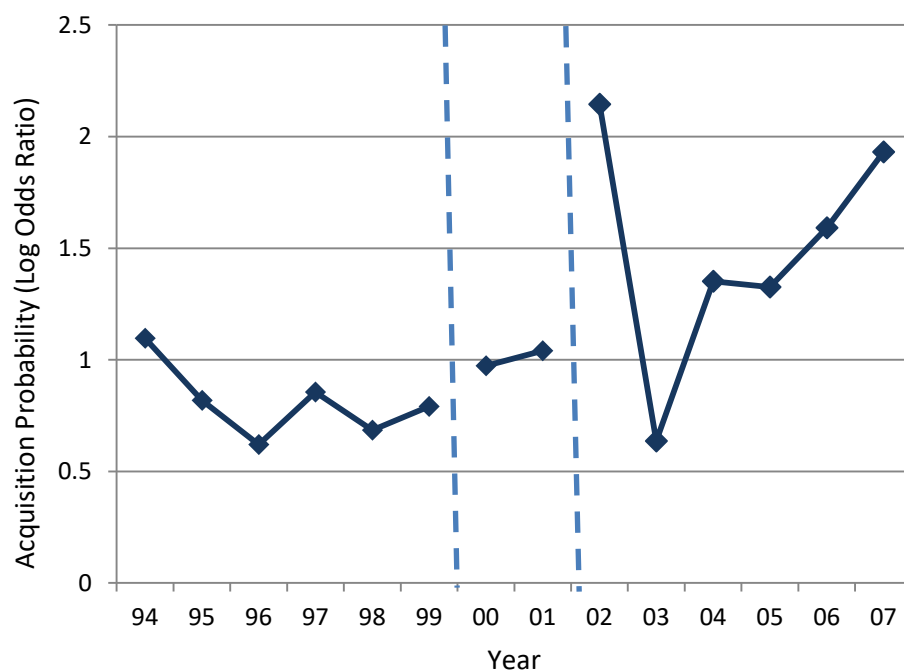
Figure 5: Change in average announcement return

This figure displays the average acquirer announcement return from t-1 to t+1 trading days around the acquisition. In the first graph, I display this average for companies with equity stakes in 1999 and in the second graph for companies without equity stakes in 1999. The "before tax reform" period goes from 1992 to 1999; the "after tax reform" period goes from 2000 to 2007. In Panel A, I display cumulative raw returns. In Panel B, I display cumulative one-factor alphas. In Panel C, I display cumulative four-factor alphas.

Panel A: Raw return t-1 to t+1
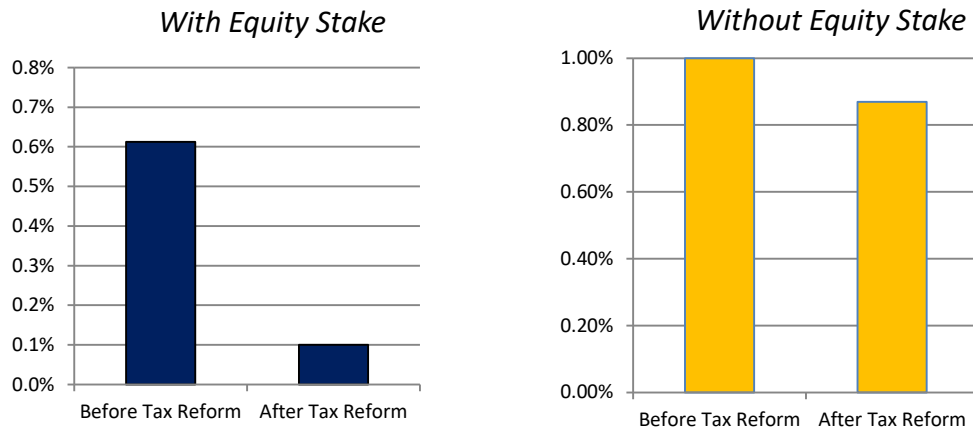
Panel B: One-factor alpha t-1 to t+1
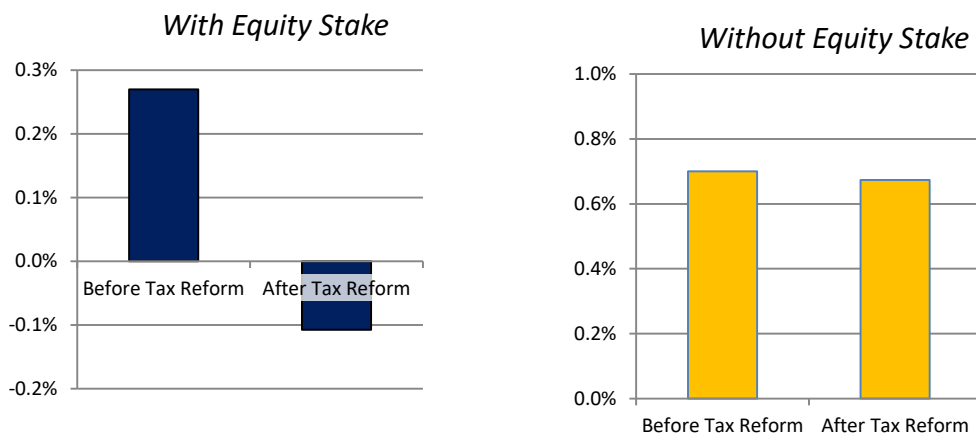
Panel C: Four-factor alpha t-1 to t+1
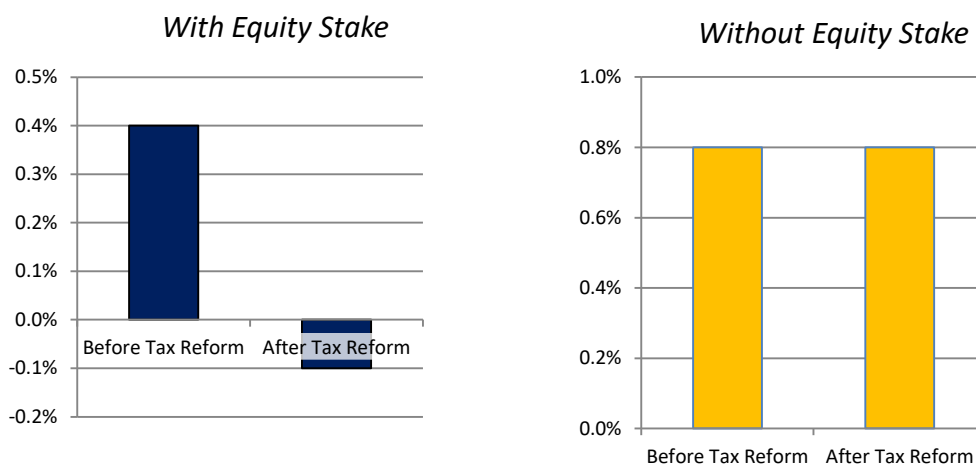
Figure 6: Effect split by number of divestitures

These figures report the point estimates from a panel regression of *Acquisition Dummy* (Panel A) and *Sum of Four-Factor Announcement Alphas* (Panel B) on the interaction between *Post Reform* and indicator variables indicating the number of divestitures. I employ four indicator variables for one to two, three to four, five to ten and more than ten divestitures. I also show the baseline of no divestitures as a comparison. In Panel A, the dependent variable is *Acquisition Dummy* and I use a conditional logit model. Additional controls in the regression include firm and year fixed effects as well as *Size*, *Leverage*, and *Tobin's Q* in 1999 interacted with *Post Reform*. The specification is the same as that reported in Table 4 Regression 1, except that *Post Reform* is interacted with number of divestiture dummy variables instead of *Equity Stake 1999*. In Panel B, the dependent variable is *Sum of Four-Factor Announcement Alphas* and I use a basic OLS model. Additional controls in the regression include firm and year fixed effects. The specification is the same as that reported in Table 6 Regression 3 (in the paper), except that *Post Reform* is interacted with number of divestiture dummy variables instead of *Equity Stake 1999*.

Panel A: Acquisition probability (log odds ratio)

Panel B: Announcement return (sum of four-factor alphas)

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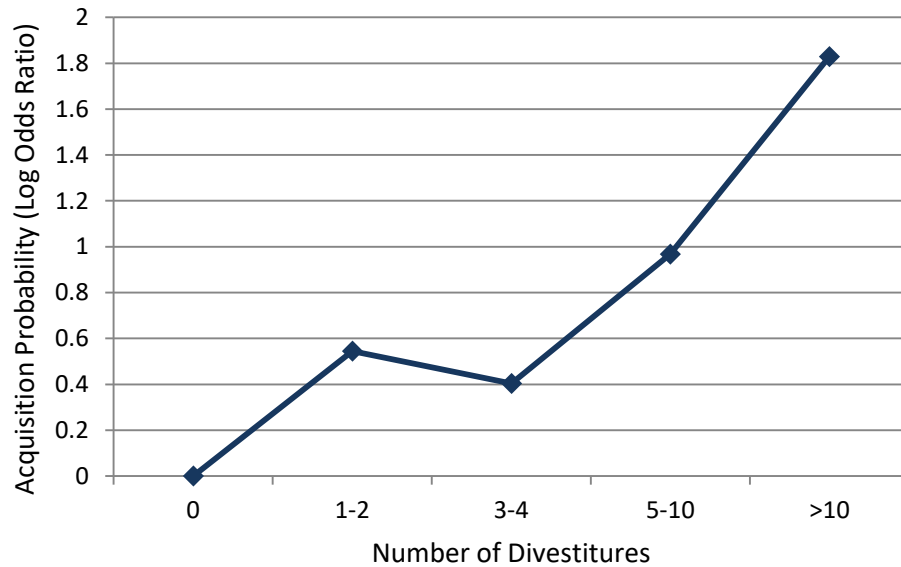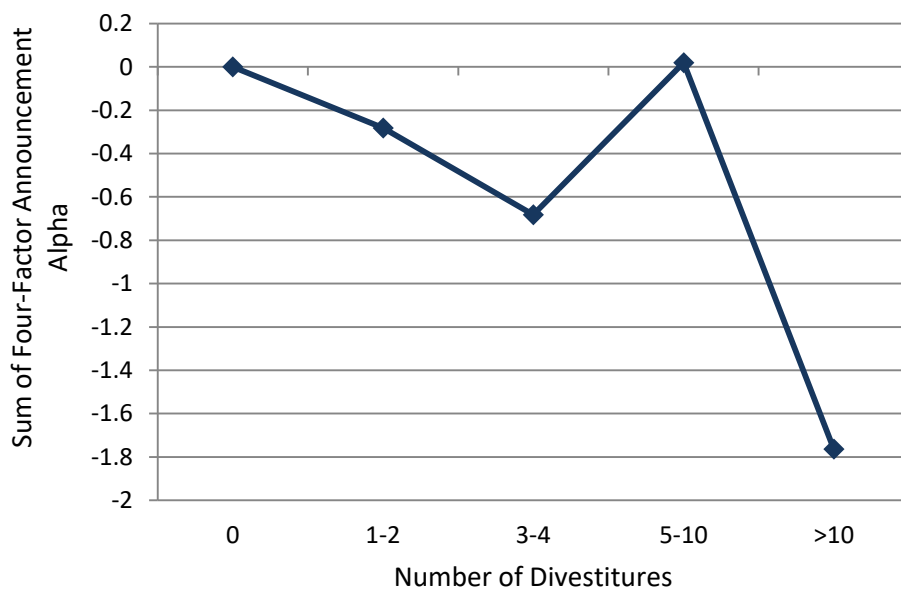
Figure 7: Effect split by value of divestitures

These figures report the point estimates from a panel regression of *Acquisition Dummy* (Panel A) and *Sum of Four-Factor Announcement Alphas* (Panel B) on the interaction between *Post Reform* and indicator variables indicating the quartile by value of divestitures. The value of divestitures is defined as the EUR value of divestitures. I also show the baseline of no divestitures as a comparison. In Panel A, the dependent variable is *Acquisition Dummy* and I use a conditional logit model. Additional controls in the regression include firm and year fixed effects as well as *Size*, *Leverage*, and *Tobin's Q* in 1999 interacted with *Post Reform*. The specification is the same as that reported in Table 4 Regression 1 (in the paper), except that *Post Reform* is interacted with number of divestiture dummy variables instead of *Equity Stake 1999*. In Panel B, the dependent variable is *Sum of Four-Factor Announcement Alphas* and I use a basic OLS model. Additional controls in the regression include firm and year fixed effects. The specification is the same as that reported in Table 6 Regression 3, except that *Post Reform* is interacted with number of divestiture dummy variables instead of *Equity Stake 1999*.

Panel A: Acquisition probability (log odds ratio)
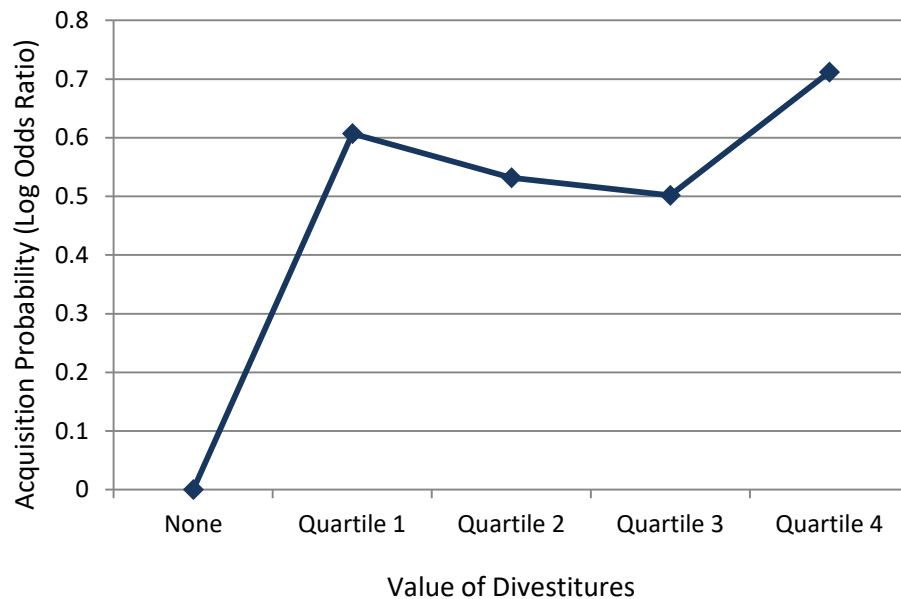
Panel B: Announcement return (sum of four-factor alphas)
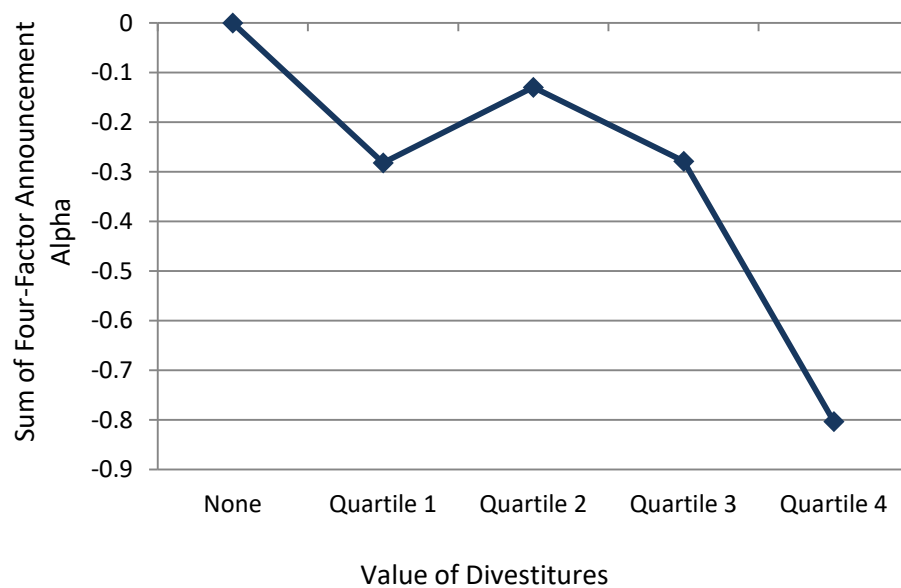
Figure 8: Effect of cash windfall on acquisition probability by year

These figures report the point estimates from a panel regression of *Acquisition Dummy* (Panel A) and *Four-Factor Announcement Alphas* (Panel B) on indicator variables indicating the year relative to the year in which the firm first divested an equity stake. Indicator variables are zero for firms without divestitures and years earlier than four years before the divestiture. Additional controls in the regression include firm and year fixed effects as well as *Size*, *Leverage*, and *Tobin's Q* in 1999 interacted with *Post Reform*. In Panel A, the dependent variable is *Acquisition Dummy* and I use a conditional logit model. In Panel B, the dependent variable is *Four-Factor Announcement Alphas* and I use a basic OLS model.

Panel A: Acquisition probability (log odds ratio)
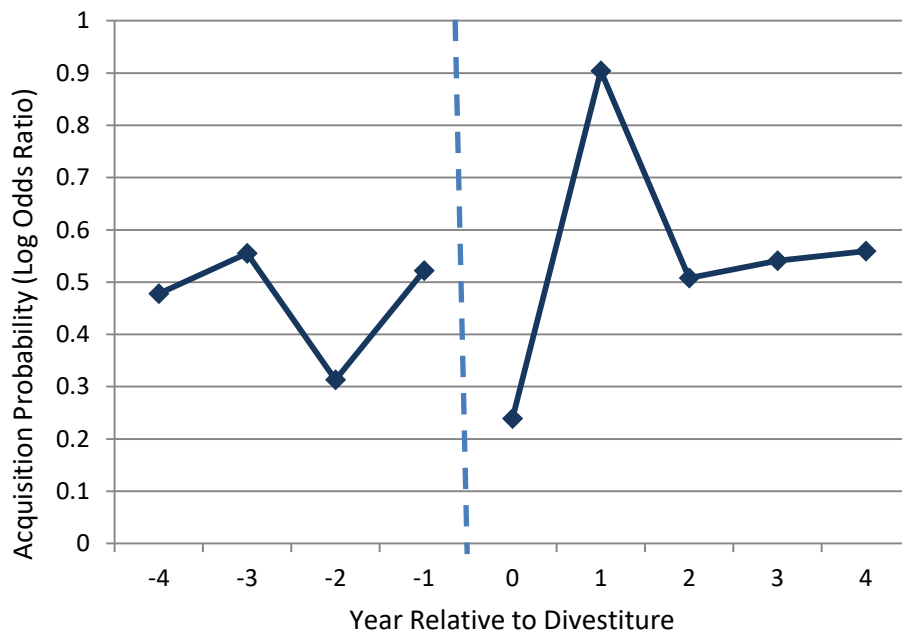
Panel B: Announcement return (four-factor alphas)
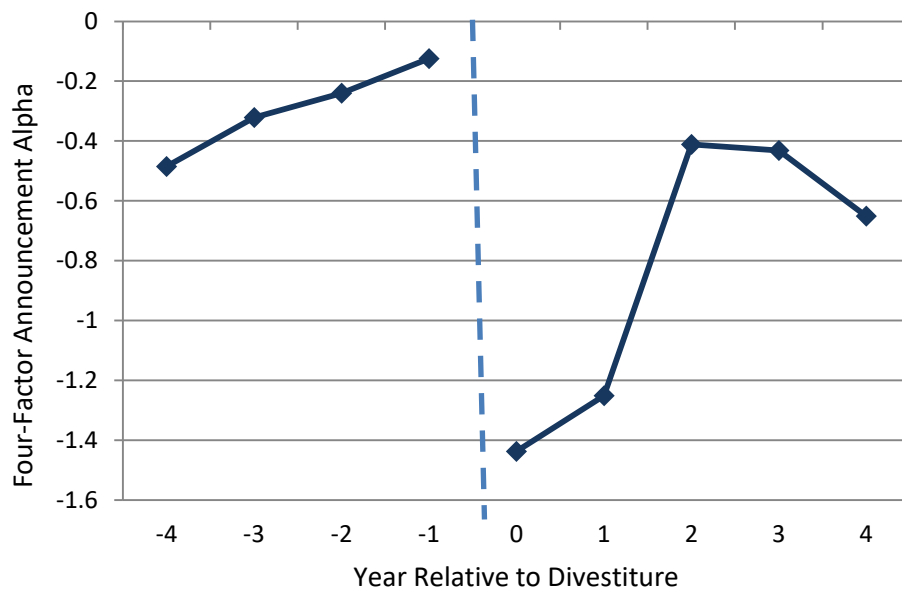
Table 1: Hypotheses and results

This table displays the different hypotheses of how a positive cash shock should influence certain variables and compares it to our results.

Variables	Modigliani Miller	Non-agency financial constraints theory	Free cash flow theory	Result
Number of Acquisitions	no effect	increase	increase	increase
Capital Expenditures	no effect	increase	increase	(increase)
Average Announcement Returns	no effect	small decrease	large decrease	large decrease
Sum of Announcement Returns	no effect	increase	decrease	decrease

Table 2: Summary statistics

Panel A displays summary statistics of the sample, split by whether a company holds an equity stake in another company in 1999. Variables are taken as of the last fiscal year ending before December 31, 1999. The test for the difference in median is the Wilcoxon rank-sum test. The test for the difference in mean is the Student t-test. *Dividends Ratio* is defined as total dividends over total assets. *Return on Assets* is defined as EBIT over total assets. Panel B displays summary statistics on equity stakes for those firms that held at least one equity stake. *Number of Equity Stakes* gives the number of equity stakes a firm owns. *Value of Equity Stakes (million EUR)* is my estimate of the sum of their value. *Value of Equity Stakes (in % of market cap)* is this sum divided by the firm's own market value in percentage points. Panel C displays summary statistics on the acquisition level. Other variables are defined in Appendix A. ***, **, * indicate significance at the 1%, 5%, and 10% level.

Panel A: Firms

Variable	Without Equity Stakes		With Equity Stakes		Z test for Difference in Median	T test for Difference in Mean
	Median	Mean	Median	Mean		
Tobin's Q	1.87	2.32	2.01	2.32	-0.973	-0.057
Market capitalization (log)	18.4	18.5	21.1	20.9	-9.89***	-12.6***
Leverage	0.15	0.20	0.17	0.23	-0.762	-1.50
Dividends Ratio	0.0072	0.015	0.0086	0.015	-1.87*	-0.092
Return on Assets	0.063	0.055	0.054	0.065	0.596	-0.78
Number of Firms	381		115			

Panel B: Firms with equity stakes

Variable	Mean	10th Percentile	Median	90th Percentile	Standard Deviation
Number of Equity Stakes	4.91	1	2	14	7.96
Value of Equity Stakes (million EUR)	646.2	0.20	7.38	498.9	2719.8
Value of Equity Stakes (in % of market cap)	24.2	0.020	0.73	24.6	122.7
Observations	115				

Panel C: Acquisitions

Variable	Mean	10th Percentile	Median	90th Percentile	Standard Deviation
Acquirer Announcement Return t-1, t+1 (%)	0.57	-3.67	0.23	5.22	3.89
Diversifying Acquisition	0.34	0	0	1	0.47
Cross-Border Deal	0.58	0	1	1	0.49
Public Target	0.55	0	1	1	0.50
Independent Target	0.53	0	1	1	0.50
Cash Acquisition	0.89	0	1	1	0.31
No Payment Information	0.73	0	1	1	0.44
Cash Acquisition (as predicted by characteristics)	0.95	1	1	1	0.22
Observations	3378				

Table 3: Divestitures of equity stakes until 2006

Panel A displays how many of the equity stakes were sold until November 2006. An equity stake is defined as sold if it has been divested by at least 50%. If the firm in which the stake is held is not covered anymore in *Who owns Whom?*, the equity stake is listed under not covered. In Panel B, I display how many companies sold at least one equity stake. In Panel C, I display the type of buyers of the equity stakes with confirmed divestitures. The buyer is the entity that replaces the original owner of the equity stake in *Who owns Whom?*. I manually check the *Who owns Whom?* data for mistakes and adjust it accordingly.

Panel A: Equity stakes

Variable	Number	Percentage with data	Total Percentage
Equity stake sold	256	61.1	43.2
Equity stake not sold	163	38.9	27.5
Not covered	174	-	29.3
Total	593	100	

Panel B: Companies

Variable	Number	Percentage with data	Total Percentage
At least one equity stake sold	96	83.2	65.9
No equity stake sold	6	16.8	13.3
Not covered	33	-	20.7
Total	135	100	100

Panel C: Buyers of equity stakes

Variable	Number	Total Percentage
Private company	89	34.8
Publicly listed company	82	32.0
Sold into free float	52	20.3
Government or government-related entity	16	6.3
Investor group	10	3.9
Individual investor	4	1.6
Buyback	3	1.2
Total	256	100

Table 4: Acquisition probability

This table displays yearly panel regressions of *Acquisition Dummy* on the interaction of *Equity Stake 1999* and *Post Reform*. The main effects *Equity Stake 1999* and *Post Reform* are not included because they are multicollinear with the fixed effects. In Regression 1, I employ logit estimation conditional on firms. In Regressions 2 and 3, I employ OLS estimation with firm fixed effects. All variables are defined in Appendix A. All standard errors are clustered at the firm level. I report t-statistics below the coefficients in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level.

	Acquisition Dummy		
	(1)	(2)	(3)
Equity Stake 1999 * Post Reform	0.672**	0.082***	0.088***
	(2.39)	(3.03)	(3.00)
Size * Post Reform	0.058	-0.005	-0.005
	(0.73)	(-0.85)	(-0.94)
Leverage * Post Reform	-1.154*	-0.118**	-0.134**
	(-1.83)	(-2.18)	(-2.46)
Tobin's Q * Post Reform	-0.139	-0.004	-0.004
	(-1.39)	(-0.52)	(-0.46)
Observations	3318	6090	6090
Adjusted R^2		0.41	0.42
Regression Type	Cond. Logit	OLS	OLS
Condition on	Firm		
Firm Fixed Effects	No	Yes	Yes
Year Fixed Effects	Yes	Yes	No
Industry-Year F.E.	No	No	Yes

Table 5: Announcement returns

This table displays OLS regressions of acquirer announcement returns (in percentage points) on the interaction of *Equity Stake 1999* and *Post Reform*. The main effects *Equity Stake 1999* and *Post Reform* are not included because they are multicollinear with the fixed effects. The sample for this regression consists of all acquisitions from 1992 to 2007. In Regressions 1 and 2, the dependent variable is the cumulative return from t-1 to t+1 around the announcement date of the acquirer. In Regressions 3 to 6, I replace returns with alphas based on a classical CAPM with only one market factor and the Carhart (1997) four-factor model. I construct the respective factors for Germany (see Appendix C). All variables are defined in Appendix A. All standard errors are clustered at the firm level. I report t-statistics below the coefficients in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level.

	Announcement Return t-1 to t+1		Announcement One-Factor Alpha t-1 to t+1		Announcement Four-Factor Alpha t-1 to t+1	
	(1)	(2)	(3)	(4)	(5)	(6)
Equity Stake 1999 * Post Reform	-1.14**	-1.15**	-0.94*	-0.94*	-0.89*	-0.89*
	(-2.03)	(-2.03)	(-1.86)	(-1.86)	(-1.84)	(-1.82)
Avg. Return (-365,-20)	1.40*	1.35*	1.11	1.08	0.93	0.90
	(1.88)	(1.78)	(1.24)	(1.22)	(1.03)	(1.00)
Size * Post Reform	0.15	0.19	0.18	0.21	0.19	0.21
	(1.06)	(1.32)	(1.25)	(1.42)	(1.36)	(1.49)
Leverage * Post Reform	0.02	0.21	-0.50	-0.41	0.00	0.09
	(0.02)	(0.19)	(-0.46)	(-0.38)	(0.00)	(0.08)
Tobin's Q * Post Reform	-0.53**	-0.53**	-0.42*	-0.42*	-0.33	-0.33
	(-2.44)	(-2.45)	(-1.79)	(-1.80)	(-1.47)	(-1.46)
Cash Acquisition		0.64		0.16		0.32
		(1.26)		(0.37)		(0.77)
No Payment Information		0.34		-0.15		-0.03
		(0.66)		(-0.35)		(-0.08)
Diversifying Acquisition		0.02		0.06		0.06
		(0.10)		(0.40)		(0.44)
Cross-Border Deal		-0.16		-0.30*		-0.33**
		(-0.71)		(-1.89)		(-2.07)
Public Target		-0.40*		-0.03		0.02
		(-1.94)		(-0.21)		(0.11)
Independent Target		-0.51***		-0.47***		-0.45***
		(-3.27)		(-3.28)		(-3.05)
Observations	2885	2885	2852	2852	2852	2852
Adjusted R^2	0.10	0.10	0.11	0.12	0.11	0.12
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes

Table 6: Yearly sum of announcement returns

This table displays yearly panel regressions of the *Sum of Announcement Returns* (in percentage points) on the interaction of *Equity Stake 1999* and *Post Reform*. The main effects *Equity Stake 1999* and *Post Reform* are not included because they are multicollinear with the fixed effects. The dependent variables are the yearly sum of all announcement returns (or alphas). All standard errors are clustered at the firm level. I report t-statistics below the coefficients in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level.

	Yearly Sum of Announcement Returns		
	Raw Returns	One-Factor Alpha	Four-Factor Alpha
	(1)	(2)	(3)
Equity Stake 1999 * Post Reform	-0.405**	-0.340**	-0.359**
	(-2.16)	(-2.17)	(-2.38)
Observations	6365	6365	6365
Adjusted R^2	0.07	0.04	0.04
Firm Fixed Effects	Yes	Yes	Yes
Industry-Year F.E.	Yes	Yes	Yes

Table 7: Differential effect by the size of the equity stakes

This table displays the main tests splitting the treated group by the aggregate size of their equity stakes. *Large Equity Stake 1999* is a dummy variable equal to one if the company ranks above the median by value of its equity stakes (as a share of its market capitalization) in 1999, while *Small Equity Stake 1999* is a dummy variable equal to one if it ranks below the median. If a company does not own minority equity stakes, these two variables are set equal to zero. The main effects *Large Equity Stake 1999, Small Equity Stake 1999,* and *Post Reform* are not included because they are multicollinear with the fixed effects. Panel A displays regressions for the acquisition probability and is thus the counterpart to Table 4. In Regression 1, I run a logit regression conditional on firm. In Regressions 2 and 3, I run OLS regressions. Panel B displays regressions for announcement returns (in percentage points) and is thus the counterpart to

Table 5. Panel C displays regressions for the yearly sum of announcement returns (in percentage points) and is thus the counterpart to Table 6. All variables are defined as above. All standard errors are clustered at the firm level. I report t-statistics below the coefficients in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level.

Panel A: Acquisition probability

	Acquisition Dummy		
	(1)	(2)	(3)
Large Equity Stake 1999 * Post Reform	0.902***	0.100***	0.111***
	(2.67)	(3.38)	(3.52)
Small Equity Stake 1999 * Post Reform	0.515	0.063	0.067
	(1.55)	(1.53)	(1.56)
Size * Post Reform	0.060	-0.004	-0.004
	(0.76)	(-0.78)	(-0.87)
Leverage * Post Reform	-1.190*	-0.119**	-0.137**
	(-1.92)	(-2.22)	(-2.51)
Tobin's Q * Post Reform	-0.124	-0.004	-0.003
	(-1.25)	(-0.46)	(-0.37)
Observations	3318	6090	6090
Adjusted R^2		0.41	0.42
Regression Type	Cond. Logit	OLS	OLS
Condition on	Firm		
Firm Fixed Effects	No	Yes	Yes
Year Fixed Effects	Yes	Yes	No
Industry-Year F.E.	No	No	Yes

Panel B: Announcement returns

	Announcement Return t-1 to t+1		Announcement One-Factor Alpha t-1 to t+1		Announcement Four-Factor Alpha t-1 to t+1	
	(1)	(2)	(3)	(4)	(5)	(6)
Large Equity Stake 1999 * Post Reform	-1.92***	-1.87**	-1.67**	-1.61**	-1.52**	-1.45**
	(-2.66)	(-2.53)	(-2.52)	(-2.38)	(-2.30)	(-2.16)
Small Equity Stake 1999 * Post Reform	-0.84	-0.87	-0.64	-0.66	-0.64	-0.66
	(-1.34)	(-1.38)	(-1.14)	(-1.19)	(-1.18)	(-1.21)
Avg. Return (-365,-20)	1.34*	1.29*	1.05	1.04	0.89	0.86
	(1.82)	(1.73)	(1.22)	(1.20)	(1.00)	(0.97)
Size * Post Reform	0.22	0.25*	0.24	0.26*	0.24*	0.25*
	(1.48)	(1.70)	(1.63)	(1.75)	(1.66)	(1.75)
Leverage * Post Reform	-0.04	0.15	-0.56	-0.47	-0.05	0.04
	(-0.03)	(0.14)	(-0.51)	(-0.43)	(-0.05)	(0.04)
Tobin's Q * Post Reform	-0.60***	-0.60***	-0.49**	-0.49*	-0.39	-0.38
	(-2.64)	(-2.63)	(-1.98)	(-1.96)	(-1.63)	(-1.59)
Cash Acquisition		0.64		0.15		0.32
		(1.25)		(0.36)		(0.76)
No Payment Information		0.34		-0.15		-0.03
		(0.66)		(-0.34)		(-0.08)
Diversifying Acquisition		0.01		0.06		0.06
		(0.07)		(0.37)		(0.41)
Cross-Border Deal		-0.17		-0.31*		-0.33**
		(-0.74)		(-1.92)		(-2.09)
Public Target		-0.40*		-0.03		0.02
		(-1.95)		(-0.21)		(0.12)
Independent Target		-0.50***		-0.46***		-0.44***
		(-3.21)		(-3.22)		(-3.00)
Observations	2885	2885	2852	2852	2852	2852
Adjusted R^2	0.10	0.11	0.12	0.12	0.11	0.12
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes

Panel C: Yearly sum of announcement returns

	Yearly Sum of Announcement Returns	Yearly Sum of Announcement One-Factor Alphas	Yearly Sum of Announcement Four-Factor Alphas
	(1)	(2)	(3)
Large Equity Stake 1999 * Post Reform	-0.602**	-0.489**	-0.485**
	(-2.26)	(-2.03)	(-2.10)
Small Equity Stake 1999 * Post Reform	-0.239	-0.215	-0.253
	(-1.09)	(-1.26)	(-1.51)
Observations	6365	6365	6365
Adjusted R^2	0.06	0.04	0.04
Firm Fixed Effects	Yes	Yes	Yes
Industry-Year F.E.	Yes	Yes	Yes

Table 8: Comparing effect of windfalls on cash and stock acquisitions

This table displays OLS panel regressions examining whether the tax windfalls from the tax reform had different effects on cash and stock acquisitions. In Panel A, the dependent variables are *Cash Acquisition Dummy*, which is a dummy variable equal to one if the firm undertook an acquisition financed at least partly by cash or had a 75% probability of being paid in cash according to the predictive regression in Appendix D and *Stock Acquisition Dummy*, which is a dummy variable equal to one if the firm undertook an acquisition financed solely by equity or having a below 75% probability of being paid in cash. The main explanatory variable of interest is the interaction between *Equity Stake 1999* and *Post Reform*. In Panel B, the dependent variable is the cumulative acquirer return from t-1 to t+1 around the announcement date. The explanatory variables on interest are the triple interactions of *Equity Stake 1999*, *Post Reform,* and either *Cash Acquisition Predicted* or (1-*Cash Acquisition Predicted). Cash Acquisition Predicted* is a dummy variable equal to one if the acquisition was paid in cash or if there is an at least a 75% probability that the acquisition was paid in cash according to the predictive regression in Appendix D. All other variables are as defined in Appendix A. The main effects are not included because they are multicollinear with the fixed effects. All standard errors are clustered at the firm level. I report t-statistics below the coefficients in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level.

Panel A: Acquisition probability

	Cash Acquisition Dummy		Stock Acquisition Dummy	
	(1)	(2)	(3)	(4)
Equity Stake 1999 * Post Reform	0.087***	0.092***	-0.013	-0.024**
	(3.14)	(3.08)	(-1.47)	(-2.18)
Size * Post Reform	-0.005	-0.005	-0.005	-0.004
	(-0.89)	(-0.95)	(-1.21)	(-1.04)
Leverage * Post Reform	-0.104*	-0.117**	-0.004	-0.011
	(-1.94)	(-2.17)	(-0.17)	(-0.48)
Tobin's Q * Post Reform	-0.003	-0.003	-0.001	-0.002
	(-0.41)	(-0.36)	(-0.33)	(-0.73)
Observations	6090	6090	6090	6090
Adjusted R^2	0.41	0.42	0.15	0.16
Firm Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	No	Yes	No
Industry-Year F.E.	No	Yes	No	Yes

Panel B: Announcement returns

	Announcement Return t-1 to t+1			
	(1)	(2)	(3)	(4)
Equity Stake 1999 * Post Reform * Cash Acquisition Predicted	-1.15**	-1.19**	-1.18**	-1.15**
	(-2.04)	(-2.09)	(-2.08)	(-2.04)
Equity Stake 1999 * Post Reform *(1- Cash Acquisition Predicted)	-0.41	-0.41	-0.47	0.24
	(-0.42)	(-0.41)	(-0.47)	(0.22)
Avg. Return (-365,-20)	1.42*	1.40*	1.40*	1.36*
	(1.91)	(1.85)	(1.86)	(1.80)
Size * Post Reform	0.15	0.19	0.19	0.18
	(1.02)	(1.33)	(1.33)	(1.25)
Leverage * Post Reform	0.00	0.19	0.18	0.23
	(0.00)	(0.17)	(0.16)	(0.21)
Tobin's Q * Post Reform	-0.53**	-0.54**	-0.54**	-0.52**
	(-2.43)	(-2.50)	(-2.49)	(-2.40)
Diversifying Acquisition		0.02	0.02	0.01
		(0.10)	(0.11)	(0.05)
Cross-Border Deal		-0.10	-0.10	-0.18
		(-0.45)	(-0.45)	(-0.78)
Public Target		-0.44**	-0.44**	-0.42**
		(-2.09)	(-2.08)	(-2.02)
Independent Target		-0.53***	-0.52***	-0.50***
		(-3.42)	(-3.41)	(-3.25)
Cash Acquisition Predicted			-0.07	
			(-0.13)	
Cash Acquisition				1.11*
				(1.88)
No Payment Information				0.78
				(1.36)
Observations	2885	2885	2885	2885
Adjusted R^2	0.10	0.10	0.10	0.11
Firm Fixed Effects	Yes	Yes	Yes	Yes
Industry-Year F.E.	Yes	Yes	Yes	Yes

Table 9: Capital expenditures

This table displays yearly panel regressions of capital expenditures divided by assets (in percentage points) on the interaction of *Equity Stake 1999* and *Post Reform*. The main effects *Equity Stake 1999* and *Post Reform* are not included because they are multicollinear with the fixed effects. In Regressions 3 and 4, I restrict the sample to non-financial companies (one-digit SIC code is different from 6). All independent variables are defined as above. All standard errors are clustered at the firm level. I report t-statistics below the coefficients in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level.

| | Capital Expenditures | | | |
| | Full Sample | | Non-Financial Companies | |
	(1)	(2)	(3)	(4)
Equity Stake 1999 * Post Reform	1.140**	1.258***	0.679	0.668
	(2.57)	(2.64)	(1.33)	(1.25)
Size * Post Reform	-0.096	-0.066	-0.155	-0.119
	(-0.84)	(-0.55)	(-1.11)	(-0.80)
Leverage * Post Reform	-1.790*	-2.030**	-1.915	-2.172*
	(-1.87)	(-2.05)	(-1.55)	(-1.70)
Tobin's Q * Post Reform	0.076	0.079	0.314*	0.323
	(0.47)	(0.44)	(1.72)	(1.61)
Observations	5762	5762	4890	4890
Adjusted R^2	0.08	0.08	0.35	0.36
Firm Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	No	Yes	No
Industry-Year F.E.	No	Yes	No	Yes

Table 10: Dividends

This table displays yearly panel regressions of dividends divided by total assets (in percentage points) on the interaction of *Equity Stake 1999* and *Post Reform*. The main effects *Equity Stake 1999* and *Post Reform* are not included because they are multicollinear with the fixed effects. In Regressions 3 and 4, I restrict the sample to non-financial companies (one-digit SIC code is different from 6). All variables are defined in Appendix A. All standard errors are clustered at the firm level. I report t-statistics below the coefficients in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level.

| | Dividends | | | |
| | Full Sample | | Non-Financial Companies | |
	(1)	(2)	(3)	(4)
Equity Stake 1999 * Post Reform	0.122	0.155	0.112	0.147
	(0.65)	(0.80)	(0.47)	(0.62)
Size * Post Reform	0.073*	0.049	0.115**	0.088
	(1.73)	(1.16)	(2.15)	(1.60)
Leverage * Post Reform	-0.147	-0.187	-0.047	-0.115
	(-0.40)	(-0.50)	(-0.09)	(-0.21)
Tobin's Q * Post Reform	0.095	0.122*	0.107	0.143*
	(1.50)	(1.89)	(1.37)	(1.81)
Observations	5941	5941	4925	4925
Adjusted R^2	0.42	0.42	0.42	0.43
Firm Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	No	Yes	No
Industry-Year F.E.	No	Yes	No	Yes

Table 11: Robustness check: matched sample

This table displays the main tests for a matched subsample. For each company with a minority stake, I select the company in the same FF10 industry which has the closest market capitalization (without replacement). Panel A displays regressions for the acquisition probability and is thus the counterpart to Table 4. Regression 1 is a logit regression conditional on firms. Regressions 2 and 3 are OLS regressions. Panel B displays regressions for announcement returns (in percentage points) and is thus the counterpart to

Table 5. Panel C displays regressions for the yearly sum of announcement returns (in percentage points) and is thus the counterpart to Table 6. All variables are defined in Appendix A. All standard errors are clustered at the firm level. I report t-statistics below the coefficients in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level.

Panel A: Acquisition probability

	Acquisition Dummy		
	(1)	(2)	(3)
Equity Stake 1999 * Post Reform	0.737**	0.082**	0.086**
	(1.99)	(2.35)	(2.34)
Size * Post Reform	0.037	-0.002	-0.001
	(0.41)	(-0.29)	(-0.23)
Leverage * Post Reform	-1.270	-0.134	-0.136
	(-1.34)	(-1.49)	(-1.47)
Tobin's Q * Post Reform	-0.113	-0.009	-0.008
	(-0.82)	(-0.58)	(-0.51)
Observations	1654	2738	2738
Adjusted R^2		0.48	0.49
Regression Type	Cond. Logit	OLS	OLS
Condition on	Firm		
Firm Fixed Effects	No	Yes	Yes
Year Fixed Effects	Yes	Yes	No
Industry-Year F.E.	No	No	Yes

Panel B: Announcement returns

	Announcement Return t-1 to t+1		Announcement One-Factor Alpha t-1 to t+1		Announcement Four-Factor Alpha t-1 to t+1	
	(1)	(2)	(3)	(4)	(5)	(6)
Equity Stake 1999 * Post Reform	-1.49**	-1.50**	-1.18**	-1.18**	-1.16**	-1.16**
	(-2.46)	(-2.45)	(-2.16)	(-2.17)	(-2.21)	(-2.21)
Avg. Return (-365,-20)	0.36	0.33	-0.53	-0.51	-0.62	-0.61
	(0.50)	(0.45)	(-0.68)	(-0.65)	(-0.73)	(-0.70)
Size * Post Reform	0.08	0.12	0.12	0.13	0.11	0.12
	(0.54)	(0.80)	(0.81)	(0.94)	(0.82)	(0.91)
Leverage * Post Reform	0.09	0.20	-0.59	-0.57	-0.11	-0.11
	(0.08)	(0.18)	(-0.57)	(-0.54)	(-0.12)	(-0.11)
Tobin's Q * Post Reform	-0.58***	-0.60***	-0.53**	-0.54**	-0.45**	-0.46**
	(-2.88)	(-2.95)	(-2.48)	(-2.56)	(-2.21)	(-2.28)
Cash Acquisition		0.39		-0.04		0.08
		(0.74)		(-0.09)		(0.20)
No Payment Information		0.15		-0.30		-0.23
		(0.28)		(-0.69)		(-0.56)
Diversifying Acquisition		-0.09		0.02		0.02
		(-0.46)		(0.13)		(0.12)
Cross-Border Deal		0.07		-0.12		-0.15
		(0.30)		(-0.74)		(-0.92)
Public Target		-0.41*		-0.03		0.03
		(-1.88)		(-0.20)		(0.21)
Independent Target		-0.40***		-0.35***		-0.32**
		(-2.66)		(-2.64)		(-2.34)
Observations	2382	2382	2362	2362	2362	2362
Adjusted R^2	0.07	0.07	0.09	0.09	0.11	0.11
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes

Panel C: Yearly sum of announcement returns

	Yearly Sum of Announcement Returns	Yearly Sum of Announcement One-Factor Alphas	Yearly Sum of Announcement Four-Factor Alphas
	(1)	(2)	(3)
Equity Stake 1999 * Post Reform	-0.369	-0.279	-0.323*
	(-1.63)	(-1.43)	(-1.68)
Observations	2802	2802	2802
Adjusted R^2	0.08	0.05	0.08
Firm Fixed Effects	Yes	Yes	Yes
Industry-Year F.E.	Yes	Yes	Yes

Table 12: Robustness check – shorter sample period

This table displays the main tests for a shorter sample period from 1996 to 2005. Panel A displays regressions for the acquisition probability and is thus the counterpart to Table 4. Regression 1 is a logit regressions conditional on firms. Regressions 2 and 3 are OLS regressions. Panel B displays regressions for announcement returns (in percentage points) and is thus the counterpart to

Table 5. Panel C displays regressions for the yearly sum of announcement returns (in percentage points) and is thus the counterpart to Table 6. All variables are defined in Appendix A. All standard errors are clustered at the firm level. I report t-statistics below the coefficients in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level.

Panel A: Acquisition probability

	Acquisition Dummy		
	(1)	(2)	(3)
Equity Stake 1999 * Post Reform	0.608*	0.072**	0.075**
	(1.76)	(2.18)	(2.12)
Size * Post Reform	0.019	-0.009	-0.009
	(0.20)	(-1.48)	(-1.61)
Leverage * Post Reform	-1.296*	-0.124**	-0.154***
	(-1.72)	(-2.11)	(-2.60)
Tobin's Q * Post Reform	-0.140	-0.004	-0.003
	(-1.23)	(-0.46)	(-0.34)
Observations	1948	4207	4207
Adjusted R^2		0.43	0.43
Regression Type	Cond. Logit	OLS	OLS
Condition on	Firm		
Firm Fixed Effects	No	Yes	Yes
Year Fixed Effects	Yes	Yes	No
Industry-Year F.E.	No	No	Yes

Panel B: Announcement returns

	Announcement Return t-1 to t+1		Announcement One-Factor Alpha t-1 to t+1		Announcement Four-Factor Alpha t-1 to t+1	
	(1)	(2)	(3)	(4)	(5)	(6)
Equity Stake 1999 * Post Reform	-1.20	-1.18	-0.93	-0.96	-0.84	-0.86
	(-1.51)	(-1.47)	(-1.24)	(-1.26)	(-1.16)	(-1.18)
Avg. Return (-365,-20)	1.04	0.92	0.54	0.47	0.40	0.32
	(1.26)	(1.08)	(0.55)	(0.47)	(0.42)	(0.33)
Size * Post Reform	0.06	0.10	0.11	0.15	0.15	0.18
	(0.31)	(0.50)	(0.54)	(0.70)	(0.78)	(0.93)
Leverage * Post Reform	-0.65	-0.48	-0.55	-0.45	0.15	0.25
	(-0.47)	(-0.34)	(-0.40)	(-0.33)	(0.12)	(0.19)
Tobin's Q * Post Reform	-0.98***	-0.95***	-0.78***	-0.76**	-0.64**	-0.62**
	(-3.65)	(-3.57)	(-2.65)	(-2.59)	(-2.32)	(-2.24)
Cash Acquisition		1.12*		0.44		0.67
		(1.78)		(0.82)		(1.28)
No Payment Information		0.88		0.19		0.34
		(1.49)		(0.37)		(0.66)
Diversifying Acquisition		0.03		0.09		0.10
		(0.14)		(0.42)		(0.48)
Cross-Border Deal		-0.08		-0.26		-0.29
		(-0.26)		(-1.19)		(-1.37)
Public Target		-0.64**		-0.14		-0.07
		(-2.19)		(-0.76)		(-0.37)
Independent Target		-0.59***		-0.63***		-0.60***
		(-2.76)		(-3.16)		(-2.99)
Observations	2010	2010	1982	1982	1982	1982
Adjusted R^2	0.11	0.12	0.13	0.14	0.14	0.14
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes

Panel C: Yearly sum of announcement returns

	Yearly Sum of Announcement Returns	Yearly Sum of Announcement One-Factor Alphas	Yearly Sum of Announcement Four-Factor Alphas
	(1)	(2)	(3)
Equity Stake 1999 * Post Reform	-0.869***	-0.550***	-0.586***
	(-3.37)	(-2.64)	(-2.94)
Observations	4386	4386	4386
Adjusted R^2	0.08	0.06	0.07
Firm Fixed Effects	Yes	Yes	Yes
Industry-Year F.E.	Yes	Yes	Yes

Table 13: Robustness check – controlling for reverse equity stakes

This table displays the main tests with an additional control for whether part of the firm's own equity is held via minority equity stakes. The additional control is *Reverse Equity Stake 1999* interacted with *Post Reform*. *Reverse Equity Stake 1999* is a dummy variable equal to one if a publicly listed German firm holds an equity stake of 20% or less in the firm in December 1999. Panel A displays regressions for the acquisition

probability and is thus the counterpart to Table 4. Regression 1 is a logit regression conditional on firms. Regressions 2 and 3 are OLS regressions. Panel B displays regressions for announcement returns (in percentage points) and is thus the counterpart to

Table 5. All variables are defined in Appendix A. All standard errors are clustered at the firm level. I report t-statistics below the coefficients in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level.

Panel A: Acquisition probability

	Acquisition Dummy		
	(1)	(2)	(3)
Equity Stake 1999 * Post Reform	0.769***	0.096***	0.101***
	(2.77)	(3.40)	(3.40)
Reverse Equity Stake 1999 * Post Reform	-0.643*	-0.081*	-0.081*
	(-1.96)	(-1.95)	(-1.87)
Size * Post Reform	0.104	0.001	0.001
	(1.23)	(0.10)	(0.09)
Leverage * Post Reform	-1.108*	-0.109**	-0.127**
	(-1.74)	(-2.03)	(-2.33)
Tobin's Q * Post Reform	-0.165	-0.006	-0.006
	(-1.55)	(-0.80)	(-0.71)
Observations	3318	6090	6090
Adjusted R^2		0.41	0.42
Regression Type	Cond. Logit	OLS	OLS
Condition on	Firm		
Firm Fixed Effects	No	Yes	Yes
Year Fixed Effects	Yes	Yes	No
Industry-Year F.E.	No	No	Yes

Panel B: Announcement returns

	Announcement Return t-1 to t+1		Announcement One-Factor Alpha t-1 to t+1		Announcement Four-Factor Alpha t-1 to t+1	
	(1)	(2)	(3)	(4)	(5)	(6)
Equity Stake 1999 * Post Reform	-1.12**	-1.12**	-0.92*	-0.92*	-0.89*	-0.88*
	(-1.98)	(-1.97)	(-1.82)	(-1.81)	(-1.82)	(-1.79)
Reverse Equity Stake 1999 * Post Reform	0.21	0.25	0.14	0.17	-0.00	0.04
	(0.42)	(0.50)	(0.30)	(0.38)	(-0.01)	(0.09)
Avg. Return (-365,-20)	1.41*	1.36*	1.10	1.08	0.93	0.90
	(1.88)	(1.79)	(1.24)	(1.21)	(1.03)	(1.00)
Size * Post Reform	0.12	0.15	0.16	0.18	0.19	0.20
	(0.70)	(0.87)	(0.93)	(1.04)	(1.16)	(1.23)
Leverage * Post Reform	0.02	0.21	-0.50	-0.41	0.00	0.09
	(0.02)	(0.19)	(-0.46)	(-0.38)	(0.00)	(0.08)
Tobin's Q * Post Reform	-0.51**	-0.50**	-0.40*	-0.40*	-0.33	-0.33
	(-2.19)	(-2.18)	(-1.67)	(-1.66)	(-1.44)	(-1.40)
Cash Acquisition		0.64		0.16		0.32
		(1.26)		(0.37)		(0.77)
No Payment Information		0.34		-0.15		-0.03
		(0.64)		(-0.36)		(-0.08)
Diversifying Acquisition		0.01		0.06		0.06
		(0.08)		(0.39)		(0.43)
Cross-Border Deal		-0.16		-0.30*		-0.33**
		(-0.72)		(-1.89)		(-2.06)
Public Target		-0.41*		-0.03		0.02
		(-1.95)		(-0.22)		(0.11)
Independent Target		-0.51***		-0.47***		-0.45***
		(-3.26)		(-3.27)		(-3.04)
Observations	2885	2885	2852	2852	2852	2852
Adjusted R^2	0.10	0.10	0.11	0.12	0.11	0.12
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes

Table 14: Placebo tax reform in December 1994

This table displays a placebo test for the main tests. I use 1990-1994 as the before event sample and 1995-1999 as the after event sample. Panel A displays regressions for the acquisition probability and is thus the counterpart to Table 4. Panel B displays regressions for announcement returns (in percentage points) and is thus the counterpart to

Table 5. All variables are defined in Appendix A. All standard errors are clustered at the firm level. I report t-statistics below the coefficients in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level.

Panel A: Acquisition probability

	Acquisition Dummy		
	(1)	(2)	(3)
Equity Stake 1999 * Post Reform	-0.200	-0.001	0.002
	(-0.55)	(-0.03)	(0.04)
Size * Post Reform	0.177*	0.016**	0.015*
	(1.73)	(2.06)	(1.84)
Leverage * Post Reform	1.063	0.117	0.149*
	(1.24)	(1.56)	(1.92)
Tobin's Q * Post Reform	0.150	0.009	0.007
	(1.16)	(0.89)	(0.70)
Observations	1436	3149	3149
Adjusted R^2		0.43	0.44
Regression Type	Cond. Logit	OLS	OLS
Condition on	Firm		
Firm Fixed Effects	No	Yes	Yes
Year Fixed Effects	Yes	Yes	No
Industry-Year F.E.	No	No	Yes

Panel B: Announcement returns

	Announcement Return t-1 to t+1		Announcement One-Factor Alpha t-1 to t+1		Announcement Four-Factor Alpha t-1 to t+1	
	(1)	(2)	(3)	(4)	(5)	(6)
Equity Stake 1999 * Post Reform	0.08	0.26	0.20	0.60	0.14	0.53
	(0.11)	(0.34)	(0.22)	(0.64)	(0.15)	(0.56)
Avg. Return (-365,-20)	-1.26	-1.38*	-2.62**	-2.50**	-2.31**	-2.18**
	(-1.56)	(-1.79)	(-2.32)	(-2.27)	(-2.08)	(-1.98)
Size * Post Reform	0.15	0.12	0.07	0.01	0.07	0.00
	(0.79)	(0.56)	(0.32)	(0.03)	(0.34)	(0.01)
Leverage * Post Reform	1.05	1.29	-0.83	-0.64	-0.44	-0.34
	(0.64)	(0.73)	(-0.48)	(-0.34)	(-0.25)	(-0.18)
Tobin's Q * Post Reform	0.03	0.06	-0.02	-0.00	-0.06	-0.05
	(0.10)	(0.20)	(-0.07)	(-0.00)	(-0.23)	(-0.17)
Cash Acquisition		-0.41		-0.79		-0.63
		(-0.65)		(-1.33)		(-1.05)
No Payment Information		-0.87		-1.10*		-0.92
		(-1.34)		(-1.84)		(-1.53)
Diversifying Acquisition		0.24		0.37		0.36
		(0.92)		(1.57)		(1.55)
Cross-Border Deal		-0.12		-0.25		-0.40*
		(-0.39)		(-1.07)		(-1.68)
Public Target		-1.61***		-1.11**		-0.90*
		(-2.70)		(-2.12)		(-1.81)
Independent Target		-0.45**		-0.47**		-0.44**
		(-2.03)		(-2.34)		(-2.18)
Observations	1581	1572	1435	1427	1435	1427
Adjusted R^2	0.14	0.15	0.17	0.18	0.17	0.18
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes