

Shareholder wealth consequence of insider pledging of company stock as collateral for personal loans*

Ying Dou[†]

Ronald Masulis[‡]

Jason Zein[§]

June 14, 2015

Abstract

We investigate the consequences of insiders pledging company stock as collateral for personal loans. We take advantage of pledging disclosure requirements in Taiwan and then exploit a major regulatory change pertaining to pledging to help us identify the causal effects of pledging on shareholder wealth. We find improvements in shareholder wealth when managers significantly reduce pledging. We focus on two channels through which pledging can reduce shareholder wealth. First, we show that margin calls triggered by price falls can increase the downside risk of a company with pledged stock. Second, since managers can bear significant personal costs in meeting large margin calls, we hypothesize and find that pledging is followed by several changes in corporate policies that are consistent with greater risk aversion.

JEL classification: G31; G34; G35.

Keywords: Pledging; Managerial incentive; Downside risk; Risk-taking.

*We thank Shao-Wei (Tina) Chen from Taiwan Economic Journal for answering many questions on the data.

[†]School of Banking and Finance, University of New South Wales. Phone: +612 93855013. Email: ying.dou@unsw.edu.au

[‡]School of Banking and Finance, University of New South Wales. Phone: +612 93855347. Email: ron.masulis@unsw.edu.au

[§]School of Banking and Finance, University of New South Wales. Phone: +612 93855875. Email: j.zein@unsw.edu.au

1 Introduction

Across the globe, the modern corporation is characterized by significant equity ownership interests held by corporate insiders. While these ownership positions can create powerful incentives for managers to maximize shareholder wealth, they also force corporate insiders to bear the costs of a risky, undiversified equity investment. This can be mitigated at firms which permit executives to pledge their personal stockholdings as collateral for a bank loan (henceforth pledging), thus enabling them to either raise consumption or diversify a portion of their wealth that would otherwise be tied up in firm stock. At the same time, this allows insiders to avoid selling their stock, thus enabling them to maintain their voting power.¹

While pledging can be beneficial for firm executives, in this study we investigate whether it also damages shareholder wealth and identify two potential channels through which this can occur. First, a significant drop in share price will trigger a margin call on a loan that is secured by company stock. If a pledger cannot make this payment, then the pledger or the bank will sell sufficient collateral to meet the margin requirement. This can amplify the downside risk of the stock because such share sales flood the market with additional sell orders. Second, since pledging exposes managers to potentially large future margin call risks, managers must also bear the cost involved with liquidating assets or accessing cash to meet these margin calls. These costs can be quite significant when margin calls are triggered by market-wide liquidity shocks. Such adverse private consequences for firm insiders as a result of pledging, may lead them to operate the firm sub-optimally due to their greater risk aversion following the pledging of stock.

The shareholder wealth consequence of pledging is a topic of considerable economic importance. In the US, for example, Larcker and Tayan (2010) find that more than 20 percent of firms allow pledging by their managers and directors. The aforementioned risks of pledging have materialized in several instances. For example, in 2008 the CEO and co-founder of

¹Managers can also diversify their wealth by either selling their shares, or hedging their exposures through derivative contracts.

Chesapeake Energy was forced to sell \$569 million worth of shares to cover a margin call, causing the stock price to drop by 40 percent within one week and precipitating a class action lawsuit by investors. Similar problems occurred at other listed firms such as Green Mountain Coffee Roasters and Carphone Warehouse in the UK.² These problems have also attracted the attention of institutional investors. A survey by Institutional Shareholder Services (ISS) finds that about half of the responding institutional investors view pledging as a problematic governance issue.³ Yet, despite these anecdotes there is no systematic evidence on the overall impact of pledging on managerial decision making and thus on firm value. The primary reason for this lack of evidence has been the difficulty in obtaining accurate pledging data, as disclosure regimes around the world have only recently begun to require firms to disclose pledging activity.⁴

To provide detailed empirical evidence on the consequence of insider share pledging we utilize a rich and novel database of the share pledging activity in Taiwanese publicly listing firms from 2003 to 2013. Pledging disclosures are compulsory for all listed firms in Taiwan. Once a corporate insider pledges his/her stock as collateral for a personal loan, Taiwanese regulations require that the company promptly disclose this information to the market, allowing us to identify the precise date of every pledge during our sample period. In addition, our database also provides details on the percentage of shares that are pledged at the firm-level and for each individual executive and other major shareholders (both controlling shareholders and blockholders) on a monthly basis. The data shows that pledging by Taiwanese executives is pervasive. Approximately half of the sample firms' shareholders undertake a pledge at some point during the sample period, providing us with a rich empirical

²In the UK, the founder of Green Mountain Coffee Roasters was forced to sell shares with a worth of \$123 million to cover the margin call; the failure to disclose pledging has caused David Ross, the 87th richest person in Britain and co-founder of Carphone Warehouse to resign. In Singapore, the pledging by the CEO of Sino-Environment Technology Group led to a 70 percent fall in the company's stock over two months. In Australia, the pledging by its directors has caused the ABC Learning Centres, the largest childcare service provider in the World, to fall into receivership.

³<http://www.towerswatson.com/en/Insights/Newsletters/Global/executive-pay-matters/2013/Will-Prohibiting-Executive-Stock-Pledging-Benefit-Shareholders-Sensible-Pledging-Policies>

⁴For example, the Financial Services Authority (FSA) in the UK and the Securities and Exchange Commission (SEC) in the US only made disclosure on pledging mandatory in 2009 and 2006 respectively.

setting to evaluate how pledging firms differ from non-pledging firms. Of the pledging shareholders, an average of 21% of their stock is pledged toward personal loans, which amounts to 6% of the market capitalization of pledging firms.

We begin our empirical analysis by studying share price reactions to pledging announcements. Using pledge disclosures as event dates, we find that shareholders react significantly negatively to announcements that a manager, board member, or an outside block holder of the firm increases their pledging level. Such negative reactions are stronger when the pledging increase is by an executive who has a large influence on firm policies (-0.4% 3-day CAR), and when the size of the pledge is large (-0.5%). Our analysis also considers the possibility of a reverse causality explanation for this result - that price declines drive the pledging of more shares as a means of meeting marginal call requirements. To address this question, we analyze a subsample of first-time pledging announcements, since factors relating to existing pledging agreements should not play a role for these events. We find that announcement returns are also significantly negative for this subsample of firms.

We next examine whether these negative short term wealth consequences are reflected in longer term systematic differences in firm value between pledging and non-pledging firms. In a simple OLS regression, we find that in the cross-section firms with insider pledging exhibit significantly lower Tobin's Qs. Using a firm fixed-effects model, we show that the introduction of pledging is associated with lower firm value. These results however are subject to endogeneity concerns. For example, better performing firms may have superior governance structures in unobservable dimensions, which lead to both better performance and restrictions on executive pledging.

Thus, to properly identify the effects of pledging on firm value, we utilize an exogenous regulatory change to pledging introduced in Taiwan in 2011. The regulatory change removed voting rights from the portion of an insider's pledged shareholdings that exceeds 50 percent of their total beneficial shareholdings. We show that this change caused a substantial fall in pledging. This regulatory announcement also caused an average positive short term share

price reaction, especially for firms with pledging insiders. We exploit this exogenously induced drop in pledging to conduct a difference-in-difference analysis on the valuation effects of this regulatory change on pledging versus non-pledging firms. Our results show that relative to comparable firms without pledging, firms with pledging experience a significantly larger rise in Tobin's Q following the regulatory change. These results indicate a negative causal impact of pledging on firm value.

Having established the negative valuation effects of pledging, we next investigate the potential sources of this value reduction. Our first hypothesis is that pledging reduces firm value because it increases the stock's downside risk. To test this hypothesis, we utilize the 2008 Global Financial Crisis (GFC) as an experimental setting that propagates an exogenous negative price shock, across both pledging and non-pledging firms in the market. In the first three months of the GFC, the Taiwanese stock market experienced a 40 percent decline in value. We use this shock to determine whether firms with pledgers (treatment group) suffer larger price declines compared to the control firm sample. Our results show that the shareholdings of insiders that pledge their stock decline significantly during the crisis period. We also find pledging firms suffered greater price declines relative to non-pledging firms. These price declines were proportional to the total percentage of the firm's market capitalization that was pledged.

The second channel through which we hypothesize that pledging can reduce firm value is by increasing managers' objections to taking risks, relative to outside shareholders. The debt features of pledging can potentially align the interests of managers to those of the debtholders. Since margin calls from falling stock prices can be personally costly, managers can be more prone to reject risky, but positive NPV investment opportunities. To test this conjecture, we examine the effects of manager pledging on three proxies for corporate risk taking; capital expenditures (CAPEX), research and development expenses (R&D), and idiosyncratic risk. Our results show that pledging is associated with a drop in these measures of risk taking. Lastly, we show that pledging can also influence firms' payout policies. Consistent with the

negative (positive) potential effect of cash dividends (stock repurchases) on stock prices, we find that pledging managers, who presumably want to prevent the stock price from falling, tend to shift from distributing cash dividends to repurchasing stocks.

An alternative way of interpreting managerial pledging is that managers can use pledging as one way of exiting from at least a part of their ownership position in the firm. Suppose a manager possesses negative information about the firm's subsequent stock performance. One way for this manager to avoid a future loss on his/her holdings of company stock is to sell the shares immediately. However, as explained previously, doing so sends a negative signal to the market. It also reduces the manager's relative voting power, and eliminates any future potential upside gains if/when the stock recovers. In this case, by pledging the stock and receiving the cash today, the manager essentially holds a put option in the sense that he/she is selling the shares at above what they are intrinsically worth. This situation can lead to moral hazard issues as the manager could find it optimal to take on riskier investments. However, as pledgers in general can only borrow up to 60% of the value of their stock Chen and Kao (2011), they continue to bear the effects of taking on riskier investments on their remaining holdings, so these moral hazard issues are mitigated.

Our findings on the impacts of insider share pledging contribute to the very limited literature on how the private transactions of insiders affect the nature of their incentive contracts, managerial decisions and thus, firm outcomes. Existing studies in this area have focused exclusively on insider hedging transactions. Such transactions are another means through which managers can effectively diversify their firm-specific wealth exposures. For instance, Bettis, Bizjak, and Lemmon (2001) analyze the use of derivatives (zero-cost collars) and swaps by corporate executives to hedge their equity positions and thereby sever the pay-performance link implicit in their compensation contracts. They show that hedging transactions significantly alter the effective ownership of insiders and that they tend to be preceded by stock price rises, consistent with managers using their private information to lock in stock price gains and to reduce their risk. Jagolinzer, Matsunaga, and Yeung (2007)

also examine a similar set of insider hedging transactions, and show that price declines tend to follow hedging transactions, again implying that managers time their hedging transaction to lock in gains.

Our study differs from earlier studies in a number of ways. First, the distortions in incentives created by pledging are fundamentally different from those created by hedging transactions. Unlike hedging transactions, pledging does not limit the upside or downside risk exposure of insiders stockholdings. On the contrary, pledging actually increases the downside risk of the firm. Thus, while hedging can reduce a managers pay-performance sensitivity, pledging creates an asymmetric pay-performance sensitivity profile, whereby managerial disutility from a price decline outweighs the benefits from increasing firm value.

The literature on insider share hedging also investigates whether an insider's private information influences the timing of hedging transactions, similar to studies of open market share sales by corporate insiders (e.g., Jaffe (1974), Finnerty (1976), Givoly and Palmon (1985), and Seyhun (1986)). Insider private information motives for pledging, however, are not the same. This is because pledging does not lock in gains, or offer any downside stock protection. Based on a private information explanation, pledging transactions should be followed by either flat or rising share prices, as insiders would be reluctant to pledge if they expect share prices to fall. Since our results show that pledging is followed by negative adjusted returns, it is unlikely that insiders' private information is an important factor in the decision to pledge. Rather the timing of pledges is more likely to be driven by insider liquidity and diversification needs.

While our study is the first to consider the shareholder wealth consequences of pledging, a concurrent working paper by Chan, Chen, Hu, and Liu (2013) also utilizes Taiwanese pledging data to examine the impact of pledging on stock repurchase decisions. Repurchases may be a preferable method over dividends to distribute cash to shareholders, because they mechanically raise stock prices, thereby easing the threat of margin calls. Dividends on the other hand have the opposite mechanical effect on stock prices. They find that firms with

significant pledging engage in stock repurchases following price falls to protect insiders from margin calls. Being aware of this incentive, the shareholder reaction to announcements of repurchases is negatively related to the insider shares pledged in the firm. These results are consistent with our documented value reducing impacts of pledging and suggest a further channel through which such value destruction can take place.

2 Data & Sample

We obtain data on the total shares owned and the percentage pledged by managers, directors and blockholders from the Taiwan Economic Journal (TEJ) database from 2003 to 2013. Firms in Taiwan are required to disclose such information on a monthly basis. We also obtain firm-level financial data (e.g., total assets, ROA) and stock price information from TEJ and Datastream respectively. After excluding financial and utility firms and over-the-counter firms, our sample contains 8,003 firm-year observations from 840 listed firms.

Because some of our hypotheses (e.g., risk-taking) are concerned with managerial decision making, our first step is to identify the decision maker in the firm. While, in many developed economies, this is the senior managers or executives of the firm, in Taiwan like many other developing economies, the ultimate authority rests with the controlling shareholder (see LaPorta, Lopez-de Silanes, and Shleifer (1999)).

To identify whether there is a controlling shareholder in the firm we must first take account of the fact that many listed firms in Taiwan are family firms. Therefore, reported ownership at the individual shareholder level can under-estimate the real ownership of the controlling shareholder as some of these individuals belong to the same family. To classify individuals into groups, we take the following two steps. First, we assume that board members who share the same surname belong to the same family. In this case we aggregate the ownership and take the total value as the real ownership of this family. Second, the TEJ data also enables us to infer whether a board member is a representative of a financial institution.

Therefore, we also classify individuals who have different surnames but represent the same institution into one group.

Following the above two-step procedure, we subsequently label the group (or the single shareholder) with the highest ownership in the firm as the controlling shareholder if his/her ownership exceeds 10%, and also exceeds the ownership of the second largest shareholder in the firm by more than 50%. In addition, for firms in which the largest shareholder owns less than 10%, but over 5%, we also label this shareholder as the controlling shareholder if (1) his/her ownership exceeds that of the second largest shareholder by more than 50%, and (2) he/she is, or has affiliation to a senior manager in the firm. After implementing this two-step procedure, we find that about 67% firm-year observations in our sample have a controlling shareholder. This proportion is comparable to other studies such as Claessens, Djankov, and Lang (2000); Yeh (2005); Yeh, Lee, and Woidtke (2001). Lastly, we cross-check sample firms with the sample in Masulis, Pham, and Zein (2011), which contains information for whether the firm is family-owned, to ensure consistency.

Table 1 reports basic descriptive statistics of our sample. In Panel A we summarize shares owned and pledged for the whole sample, as well as for sub-sample of firms that have a controlling shareholder (hereafter termed Controlled Firms) and for those that do not have a controlling shareholder (hereafter termed Widely Held Firms). Overall, pledging (by any manager, board member, controlling shareholder, or blockholder) occurs in 50% of all firm-year observations, and is slightly more common in Widely Held Firms (55.67%) than in Controlled Firm (47.57%). Given the possibility that the effects of pledging depend on whether the pledger has a strong influence on the firm, we also look at the proportion of firms in which the decision makers also pledges their stock. We define decision makers as the controlling shareholders for Controlled Firms and as the senior managers for Widely Held Firms. According to Panel A, about 33% (53%) of Controlled Firms (Widely Held Firms) have a pledging decision maker. The fact that a pledging decision maker is more common in Widely Held Firms is likely due to the nature of our classification. While there can only be

one decision maker in Controlled Firms, there can be many decision makers in Widely Held Firms.

In addition, the impact of pledging can depend on its magnitude. Therefore, we also summarize the proportion of firms that have at least one individual who pledges over 50% of his/her shares. On average about 37% of all firm-year observations have at least one large pledger. To consider the magnitude of pledging at the firm level, we also examine the proportion of firms where the total number of shares pledged by the managers, directors, and blockholders exceed 5% of the total shares outstanding. The results suggest that such substantial pledging exists in close to 20% of our sample firms. Furthermore, in the last four rows of Panel A, we examine the magnitude of pledging by reporting the number of shares pledged at the individual level as a proportion of the number of shares owned by the pledger, and the total number of shares pledged at the firm level as a proportion of the total shares outstanding in the firm. Even though the previous results indicate that pledging is less prevalent in Controlled Firms, the results here suggest that its magnitude is much higher.

Panel B reports summary statistics for our sample firm characteristics. The table also reports the results from basic univariate comparisons between firms with and without pledging. All financial variables are winsorized at the 1% and 99% level. The results in Panel B suggest that pledging firms tend to be larger (as reflected in total assets and market capitalization) and older. Since more established firms tend to have more stable valuations, these stocks should represent safer collateral for banks making personal loans. Consequently shareholders in larger, more established firms will find it easier to pledge. Thus, the differences in characteristics between firms with and without pledging are consistent with the presence of pledging decreasing as the risk of the stock rises. Consequently shareholders in these firms will find it easier to pledge. In addition, pledging firms tend to have larger boards. This difference is unsurprising, given that the probability of having any pledging naturally increases with the number of board members. Lastly, consistent with our expectation, pledging firms

have lower operating profitability, measured by ROA, and lower firm valuation, measured by Tobin’s Q.

3 Empirical Results

3.1 Announcement Returns to Pledging.

To examine whether pledging impacts firm value, we conduct a series of investigations. We first consider the average shareholder reaction to announcements of pledging. Firms in Taiwan are required to make announcements to the market within a few days after their managers, board members, and blockholders pledge shares as collaterals or change the proportion of shares pledged. This unique disclosure requirement enables us to conduct an event study to examine how firm share prices respond to these announcements. Because the announcements detail the pledger’s identity and the number of shares being pledged, we also investigate whether the shareholder reaction depends on certain pledging characteristics such as the influence the pledger has in the firm and the magnitude of the pledge.

The results are reported in Table 2. We calculate CARs using the Fama-French Three-Factor Model with an estimation window of $[-210, -11]$ and an event window of $[-1, 1]$. In Panel A we partition these announcements based on whether they refer to an increase or a decrease in pledging. To ensure our results are robust to the calculation of CARs, we also report the results where we calculate CARs based on the Market Adjusted Model over the same event window. Among the pledging announcements, we exclude observations where we cannot obtain sufficient stock price data to compute CARs. To reduce the extent to which the pledging is “unsurprising” to shareholders, we only keep an announcement if it is not preceded or followed by another pledging announcement in the same firm within 30 days. This restriction reduces our sample by approximately 50%. Our final sample includes 1,816 pledging increase announcements and 1,752 pledging decrease announcements.

Overall, the results in Panel A clearly show that announcements of an increase in pledging

trigger a significantly negative share price reaction. On average such an announcement reduces the share price by 0.4%. Both the mean and the median value appear statistically significant. On the other hand, the shareholder reactions to announcements of decreased pledging are mixed and generally insignificant. One possible explanation for this different effect is that once an individual has already pledged his/her shares, a subsequent decrease in pledging is more or less expected. If this is the case, then the degree of surprise in a decrease in pledging announcement would be reduced.

Having shown that shareholders in general view pledging increases as value-reducing, we next explore whether the wealth impact of pledging announcements depends on certain characteristics of the pledging announcement and the pledger. Because the ownership structure is largely different between Controlled Firms and Widely Held Firms, the impact of pledging can also be different for these two types of firms. Hence, we separately examine CARs for Controlled Firms and Widely Held Firms.

Panel B reports the mean values of CARs obtained from various sub-samples. Because results in Panel A suggest that announcements of a decrease in pledging do not carry as much new information, in this panel we only focus on increasing pledging announcements. Within each sample, we first split the announcements based on whether the pledger is a major decision maker in the firm. If pledging shares can lead to incentive misalignment, such situations should be most critical when the pledging is made by those with the largest influence on firm policies. Therefore we expect the shareholder reaction to be even more negative when the announcements indicate that major decision makers in the firm are pledging.

The results support this conjecture. Specifically, in Panel B, the CARs are significantly negative for announcements related to decision makers. For announcements related to non-decision-makers, the CARs are still negative, but are less significant and have a smaller magnitude. We also expect the shareholder reaction to be affected by the size of the pledge. To measure size we employ two measures. The first one is the number of shares being pledged scaled by the total number of shares the pledger owns; while the second one is the number

of shares being pledged scaled by the total number of shares outstanding in the firm. Once we split the announcements into large (i.e., above median) and small (i.e., below median) pledging, the results indicate that those announcements of large pledging always trigger a significantly negative reaction, while small pledging announcements trigger only a marginally significant negative reaction.

Lastly, we partition the announcements based on whether the pledger has already pledged stocks prior to the announced pledging. As mentioned previously, pledging can occur in response to a margin call where the pledger has to pledge additional shares to meet the margin call. For these pledging announcements, it is unclear whether the negative reaction is really driven by pledging per se. To deal with this concern, we examine first-time announcements which should not be driven by margin calls. According to the results, the CARs of these announcements are also significantly negative in the Widely-Held Firms sample.

3.2 Tobin’s Q analysis.

Our second avenue of investigation examines the impact of pledging on firm value in the long term. For this purpose, we regress the natural log of Tobin’s Q, a commonly used measure for firm value, on a measure of insider pledging, along with control variables. We employ two measures for pledging. The first measure is an indicator variable that equals one if pledging is present in the firm, and zero otherwise. The second measure is a continuous variable which scales the number of shares pledged by the total number of shares outstanding in the firm. Because our financial variables are on an annual basis, we reduce our pledging and holding data from firm-month level to firm-year level. In doing so, for each firm-year we take the average value of the twelve firm-month observations.

For the whole (“All Firms”) sample, we measure pledging at the aggregate level. That is, the indicator variable equals one as long as any manager, board member or blockholder in the firm pledges; while the numerator of the continuous variable equals the total number of shares pledged by all managers, board members and blockholders. Meanwhile, to allow

for the possibility that pledging is only value-reducing when it is being done by a major decision maker in the firm, we measure pledging separately for decision makers and non-decision-makers in both the Controlled and Widely Held sub-samples.

Table 3 reports the results. In Panel A, we estimate a panel regressions with industry fixed effects interacted with year fixed effects to control for time varying heteroscedasticity. Industry is defined based on the Fama-French 48-Industry Classification. We control for firm size (measured by the log transformation of market capitalization), sales growth, cash holding, leverage, R&D, 36-month stock return volatility, firm age, board size, the fraction of independent directors (referred to as “supervisors” in Taiwan), and the ownership by the decision maker in the firm. Robust standard errors are clustered at firm level.

Overall results in Panel A suggest that pledging appears to have a significantly negative impact on Tobin’s Q. This negative relation confirms our hypothesis that pledging reduces firm value. Further, in Columns 3-6 we find that this negative relation only exists when pledging comes from the decision makers in the firm. This result is consistent with the conjecture that pledging is problematic because it can lead to incentive misalignment between shareholders and firm decision makers.

The results in Panel A only address unobservable factors at industry-year level. To further minimize the impact of firm-level unobservable factors on our results, in Panel B of Table 3 we estimate the same regressions with firm-fixed effects and year-fixed effects. These results are even stronger than those in Panel A, suggesting that by eliminating the unobservable firm-level differences, the negative impact of pledging on firm value becomes more severe.

4 Quasi-Natural Experiment

4.1 Background.

The results presented so far do not prove a causal relation between pledging and firm value. It is possible that the results can be explained by a reverse causality argument: firms with low valuations somehow facilitate or motivate more pledging by their board members and shareholders. To make stronger inferences on the causal relationship between pledging and firm value, in this section we conduct a quasi-natural experiment made possible by an amendment to the Taiwan Corporations Law that was implemented in 2011.

In 2011, seeing the potential drawbacks associated with pledging, the legislature in Taiwan initiated a discussion on whether a restriction should be in place for certain types of pledging. Specifically, it was proposed that if the number of shares pledged by a manager or director exceeds 50% of the number of shares he/she was holding upon election, then the shares exceeding 50% would no longer carry voting rights.

In Taiwan, a proposal needs to be discussed and passed three times by the legislature to become law. According to local media coverage, prior to the first discussion of this proposal, the public was in general expecting it to be rejected.⁵ Nevertheless, on 08 June 2011, the proposal received its first passage. The proposal then received a majority vote on the second discussion. On 25 October 2011, the date of the final discussion, it was announced that the proposal was passed for the third time, indicating that it will become an official amendment with certainty.

4.2 Shareholder Reaction to Legislative Change.

To determine the extent to which this legislative change influences the market, we investigate the shareholder reactions to the two key event dates discussed above. The first passage

⁵Anni Lin & Yi Yang, “Board member power to shrink for excessive pledging” *Economic Daily*, June 09 2011. <http://www.jihyoung.com/news/100/06/1000609-2>

surprised the market, while the final passage provided certainty for the first time that the proposal will be implemented. Thus, it is possible for both events to be priced by the market. Since the proposal aims to reduce pledging, a significant increase in shareholder wealth upon these two announcements would indicate that pledging is viewed as value-reducing. Also, because these two announcements are fairly exogenous, they help to address the concern that the previously observed negative relation between pledging and firm value is driven by the reverse causality or some other endogenous cause.

Treating 08 June 2011 (“Event 1”) and 25 October 2011 (“Event 2”) as the two event dates, we calculate the CARs for all listed firms in Taiwan over the event window $[-1, 1]$ using the Fama-French 3-factor model with an estimation window of $[-210, -11]$. We then test whether the shareholder reaction on these two dates is significantly different from zero. The results are in Table 4. We report the CARs for the two events separately, as well as taking the sum of the two CARs for each firm. Once again we split the sample into Controlled Firms and Widely Held Firms.

As Table 4 shows, for both Controlled and Widely Held Firms, there is a significantly positive shareholder reaction upon the first passage of the proposal. The mean value of CARs for Event 1 is 1.2% for Controlled Firms and 0.9% for Widely Held Firms, suggesting that the market in general views the proposal as value-enhancing. On the other hand, the shareholder reaction on Event 2 is mostly insignificantly different from zero. Since the proposal already received two majority votes, the insignificance can be because the final passage does not come as a surprise to the market. Lastly, once we calculate the sum of the two CARs for each firm, our results remain positive and significant at the 1% level.

The above results are based on samples that include both firms with and without insider pledging. If shareholders view pledging as problematic, then an amendment that reduces pledging should be good news for all firms. Even for firms without pledging, such an amendment reduces the likelihood that these firms will have insider pledging in the future. Nevertheless, the magnitude of the shareholder wealth increase should be greater in

firms where substantial pledging already exists. Because the amendment only affects large pledging, it should have a stronger impact on firms where an insider is pledging over 50% of his/her shares. Also, because the amendment only places restrictions on voting rights, it should largely impact insider pledgers who highly value their votes. Therefore we expect the shareholder reaction to be the largest when there is a controlling shareholder in the firm, and the controlling shareholder is pledging over 50% of his/her shares.

To examine whether this prediction is true, within the subsample of Controlled Firms, we define treatment firms as those in which the proportion of shares pledged by the controlling shareholder exceeds 50% at the end of May 2011. Firms where no managers, board members or large shareholders are pledging at the end of May 2011 are potential control firms. We select control firm from this subsample based on a propensity score matching (PSM) procedure. Specifically, in the first stage probit regression, the dependent variable is an indicator variable that equals one for treatment firms and zero for control firms. We regress this indicator variable on factors that can affect whether a firm has any pledging including firm size (measured by the log transformation of market capitalization), firm age, sales growth, the ownership by the decision maker, stock return volatility in the past 36 months and monthly trading volume over the past 12 months. After obtaining the propensity scores, we match each of the treatment firms to all control firms that (1) are in the same industry and (2) have propensity scores that differ from the treatment firm's propensity score by no more than 15%.

We repeat the above process to identify treatment and control firms for the Widely Held Firms sample. However, since the decision maker (i.e., managers) in these firms is likely to view voting as unimportant, it is unclear whether the new law can lead to a significant reduction in pledging in these firms.⁶ According to the results in Table 4, both treatment and control firms tend to experience significant positive shareholder reactions following Event 1 and for the combined CARs of Events 1 and 2. Also, consistent with our conjecture, the

⁶In Section 4.3.1, we examine and find that the actual reduction in pledging is much smaller in Widely Held Firms.

results suggest that stock market price reactions tend to be larger for treatment relative to control firms.

To further examine whether the difference in shareholder reactions in treatment versus control firms is statistically and economically significant, we subsequently regress the CAR of each firm on an indicator variable indicating whether the firm is a treatment or a control firm. The regressions also control for other factors that can affect CARs including equity market capitalization, leverage, stock return volatility, firm age, Tobin's Q, board size and board independence. All the regressions include industry-fixed effects and the standard errors are clustered at industry level.

The results are reported in Table 5. Consistent with the findings in Table 4 that the Event 2 announcement does not surprise the market, the *Treat* indicator variable is insignificant in Column 2. In contrast, it is significant at the 10% level in Event 1 (Column 1) and at the 1% level in the combined CARs (Column 3) for the Controlled Firms, suggesting that within the Controlled Firm subsample, firms where the controlling shareholder has substantial pledging before the announcements experience significantly larger CARs than firms that have no pledging at all. On the other hand, for Widely Held Firms, the indicator variable *Treat* is always insignificant. As explained previously, this insignificance is expected since losing some voting rights is not a serious concern for managers in these firms. Consequently this new statute is unlikely to bring about a significant reduction in pledging at these firms.

Overall the results presented in Tables 4 and 5 suggest that shareholders generally view pledging as a value-reducing action. As a result, they tend to assign a relatively higher value to a firm following a signal that the level of pledging in the firm is likely to fall.

4.3 Difference-in-Difference Analysis.

Our next investigation utilizes this quasi-natural experiment in a difference-in-difference (DiD) framework. Specifically, rather than looking at shareholder reactions in an event study, we examine how much firm value changes for pledging firms from before until after

the new statute and compare this valuation change to the change experienced by firms where this new statute has no real impact (i.e., the non-pledging firms).

4.3.1 Changes in pledging before and after the shock.

Before employing a DiD approach, one critical feature of the experiment must be validated. Specifically, we need to ensure that the variable of interest (i.e., pledging) undergoes a substantial change following the exogenous shock to the treatment firms, while it exhibits no measurable change for the benchmark firms. To verify whether our treatment firms have really experienced a significant drop in pledging, in Table 6 we summarize how pledging has changed within the 12 months from the end of October 2011, the last month before the new law becomes official, to the end of September 2012.

According to Table 6, we do not find a dramatic reduction in pledging when our focus is any insider with any pledging. However, as we gradually narrow down our focus to firms that have an insider with large pledging (defined as 30% or 50%), the magnitude of the reduction becomes greater. When we only focus on firms where the controlling shareholder is pledging over 50%, we find that the proportion of such firms drops from 25.13% to 20.48%, representing an 18.5% reduction. This drop suggests that controlling shareholders value their votes and thus, choose to reduce their pledging to prevent a loss of voting rights. In contrast, among Widely Held Firms, the proportion of firms where at least one manager pledges over 50% of his/her shares drops by only 9.8% (from 34.93% to 31.49%), suggesting once again that managers in Widely Held Firms do not value voting rights very highly.

The focus of the above analysis may still be too broad in the sense that among all firms where the controlling shareholder pledges over 50% of his or her shares, their later need to cut pledging may not all be the same. For firms in which there is a large gap between the ownership level of the largest and second largest shareholders, it is possible that reducing pledging is not as critical to the largest shareholder. Similarly, even for widely held firms where the decision makers presumably do not value their votes as highly, it is still possible

that a manager who is the largest shareholder might want to reduce pledged shares, if not doing so results in him/her being out voted by the next largest holder.

To allow for this possibility, we subsequently test whether the largest shareholder in a firm can have strong incentives to reduce pledging based on his/her ownership level, his/her pledging level, and the second largest shareholder's ownership level. For this analysis, we first calculate the controlling shareholder's voting power if his/her pledging is not reduced (and thus where he/she loses the voting rights on shares above the 50% pledging cut-off level). If the second largest shareholder's ownership exceeds 50% of this "pseudo ownership", then we designate this largest shareholder a "threatened" decision maker. If the largest shareholder does not have pledging and the second largest shareholder's ownership still exceeds 50%, then the largest shareholder is also considered as threatened. Among controlled firms with a threatened decision maker as of October 2011, the decision maker is pledging above the 50% cut-off in 31.83% of these firms. After implementation of the new law, this proportion falls by 55.4% to 14.19% within 12 months. Even for widely held firms where voting rights are relatively less important, this proportion drops by 15.8%.

After we find that the proportion of firms with large pledging by the firm's controlling shareholder has substantially declined, the last three rows of Table 6 focus on the amount of shares being pledged before and after the shock. To do this, we define *Votes at Risk* as the number of shares pledged over 50% by each pledger. These are the votes that will be lost if the pledger does not reduce pledging. We find that Votes at Risk, as a proportion of the total number of shares outstanding in the firm, exhibit a modest decline when we focus on all large pledgers. However, once we focus on threatened decision makers, the decline in pledging is much more dramatic, from 3.20% to 1.72% for Controlled Firms and from 1.81% to 1.11% for Widely Held Firms. Overall, the results in Table 6 show that the new law leads to a substantial reduction in pledging by decision makers for whom the loss of voting rights is likely to be important.

4.3.2 Difference-in-Difference evidence.

Having shown that the pledging level of firms with substantial insider pledging has changed dramatically following the exogenous legislative shock, we next examine whether the value of these firms improves significantly after the shock, relative to comparable firms that are not impacted by the shock. We first include all treated firms as long as their decision makers are pledging over 50% of their shares prior to the new law. The benchmark firms are selected using the same propensity score matching model as before. Because the change in the law is officially implemented at the end of 2011, we treat 2011 as the pre-shock year and 2012 as the post-shock year. The dependent variable in our regressions is once again the natural log of Tobin's Q. We regress this variable on an indicator variable *Treat* which equals one for treatment firms and zero for benchmark firms, an indicator variable *Post* that equals one for the treatment year 2012 and zero for 2011, and an interaction of these two variables (the difference-in-difference variable).

Table 7 reports the results. We include the same set of control variables as in Table 3 as well as industry indicators. According to Columns (1) and (3), the treatment firms in the Controlled Firm sample experience a significant improvement in firm value, while the treatment firms in Widely Held Firm subsample experience no significant improvements. This is consistent with the evidence in Table 6, which suggests that controlling shareholders in general reduce their pledging after the shock, while managers in Widely Held Firms do not exhibit such a reduction.

In Columns (2) and (4), we restrict the sample to only include treatment firms that are also threatened and their corresponding benchmark firms. As shown in Table 6, the threatened firms in both the Controlled and Widely Held Firm samples exhibit a larger decline in pledging. Consistent with this finding, the coefficient of the interaction term in Column (2) is significantly positive and is much higher than that in Column (1). In the Widely Held Firm sample, the coefficient of the interaction terms is also much higher, and is statistically significant.

The above results indicate that firms in which the pledging level has substantially declined after the new law experience a significantly larger improvement in firm value compared to comparable firms with no pledging. The evidence strongly supports the argument that pledging reduces firm value, rather than the argument that changes in pledging are merely correlated with changes in firm valuation.

5 Sources of Value Reduction

5.1 Stock returns during the Global Financial Crisis.

Having identified a causal relation between pledging and firm value, we next identify the specific channels through which pledging can be detrimental to firm value. As discussed previously, perhaps the most obvious channel is that pledging, especially when substantial, can increase the downside risk of a firm's stock. Following a non-trivial stock price decline, the pledger might have to pledge/sell additional shares to meet the margin call and, upon default, a forced sale of these shares by the lender can lead to a severe price decline. Worse still, such a decline is not necessarily driven by the sale of pledger shares per se. Since the market is aware of the insider's substantial pledging level, conditional on a price fall, investors know that the pledging activity has the potential to severely damage the firm's share price if the margin call for additional collateral cannot be met. If investors largely sell their shares in anticipation of this additional risk, the share price can be further pushed downwards prior to the fire sale of pledger's shares.

In this sub-section we first test whether, following a non-trivial stock price decline, large pledgers are more likely to reduce their shareholdings. Such a decline in shareholdings can be either a result of the pledgers selling shares to meet their margin calls, or a result of the forced sales when they fail to meet the margin calls. The endogenous relation among stock price, pledging and shareholdings makes these tests difficult. Ideally, our first-stage stock price decline is one that is unlikely to be driven by pledging. Such a decline is difficult to

identify, because we argue that pledging influences stock prices.

To deal with this concern, we utilize the Global Financial Crisis (GFC) as an exogenous shock to stock prices in general. It is obvious that the GFC is not driven by pledging. In Taiwan, the GFC hit the stock market mainly during mid to late 2008. To maintain the exogenous nature of the crisis, we focus on the initial three months from June 2008 to August 2008. Specifically, for each manager, board member, and blockholder who holds shares at the end of May 2008, we calculate the proportion of their shares that are pledged and use this proportion as our key independent variable. In addition, because the median proportion of shares pledged among all pledgers is slightly above 45%, we also use an indicator variable that takes the value of one if the pledging is above the threshold.

The results are shown in Panel A of Table 8. In this analysis, we do not split the sample based on whether the firm has a controlling shareholder because the two major types of firms should not differ in terms of the threat of margin calls and forced shares sales. Our dependent variable is the percentage change of shareholdings for each individual from the end of May 2008 to the end of August 2008. In Columns 1 and 2, we estimate OLS regressions with industry indicator variables and control for certain firm-level characteristics. The coefficients of the key explanatory variables associated with pledging are significantly negative, indicating that level of shareholdings of each insider during the GFC decreases with the magnitude of their pledging.

The firm-level control variables in Columns 1 and 2 are based on data at the end of 2007. To allow for the possibility that some firm characteristics have changed dramatically during the GFC and these changes might also lead to changes in shareholdings, in Columns 3 and 4 we replace the firm-level control variables with their percentage changes from 2007 to 2008. The results in Columns 3 and 4 remain significant. Lastly, in Columns 5 and 6 we drop all the control variables and include firm indicators in place of industry indicators. By only examining the within-firm variation, we minimize the impact of unobservable firm level factors. Our results in these two columns remain significant. Overall the evidence in Panel

A suggests that insider shareholding declines can be attributed to their pledging.

Subsequently, we examine whether pledging puts further downward pressure on stock prices during the GFC. To do this, we measure stock returns during the GFC using Fama-French 3-factor adjusted returns from the beginning of June 2008 to the end of August 2008 and use this variable as the dependent variable. Our first measure of pledging is the total number of shares pledged by all managers, board members and blockholders in the firm divided by the firm's total shares outstanding. As shown in Column 1 of Panel B, the coefficient of this variable is negative and marginally significant. Given that the impact of pledging on stock prices may only be severe if the pledging is large, in Column 2 we only consider the number of shares pledged by the 3 largest pledgers in the firm. The coefficient of this variable is negative and significant at the 5% level, suggesting that the presence of a large pledger can significantly damage a firm's stock performance during this financial crisis.

In addition, the impact of pledging can also be affected by the ownership of the pledger. Even if a pledger is forced to sell shares, the effect on the stock price might not be significant if the pledger only holds a small proportion of shares. Thus, in Column 3, we construct an indicator variable that equals one if the firm has at least one individual who holds more than 3% of shares and pledges more than 45% of his/her shareholdings.⁷ The coefficient of this variable is negative and significant at the 10% level. Lastly, in Column 4, we increase the pledging threshold from 45% to 75%. The coefficient is now significant at the 5% level. Overall, the results in this sub-section are consistent with the argument that large pledging significantly increases the downside risk for the firm's stock due to the threat of margin calls and forced sales of stocks upon defaults.

5.2 Risk-taking Incentives.

Apart from a higher downside risk, another potential source of value destruction is due to incentive misalignment. Once the decision maker in a firm starts to pledge, his/her risk

⁷We obtain similar results when we increase the ownership threshold from 3% to 5%.

aversion is likely to increase. Even though the decision maker’s share ownership remains unchanged, meaning that he/she still enjoys the benefits from any increase in firm value, the consequence of any value decrease is now much more severe. If the stock price drops by a certain magnitude, the decision maker faces the risk of having to make a margin call. Failure to meet these margin calls can lead to serious negative outcomes such as loss of the shares. Therefore, it is possible that firms exhibit a reduction in their risk-taking behavior once their decision makers start to pledge. In a recent study, Phan (2014) tests a similar hypothesis and shows that corporate risk taking is negatively affected by CEO inside debt holdings. In this section, we examine whether this relation also holds in the context of pledging.

Table 9 reports the results. We first follow Barger, Lehn, and Zutter (2010) and Coles, Daniel, and Naveen (2006) and use CAPEX and R&D (both scaled by assets) in the next year to measure a firm’s risk-taking propensity. Our hypothesis predicts a negative relation between pledging and these two variables. As a third measure of firm risk, we also calculate each firm’s stock return volatility, and decompose the total risk into systematic and idiosyncratic risk. Our results in the previous section indicate that pledging makes the firm’s stock performance more sensitive to current market conditions. Consequently we expect the systematic risk to increase for pledging firms. On the other hand, because pledgers are less inclined to take risks, we expect pledging firms to have a lower level of idiosyncratic risk.

Stock return volatility is calculated as the annualized standard deviation of the daily stock returns over the next 12 months. We estimate a firm’s systematic risk from a Fama-French 3-factor model based on daily stock returns over the next 12 months. A firm’s systematic risk is estimated from the coefficient of the market return. A firm’s idiosyncratic risk is measured by the volatility of the market model residuals. In Table 9 Panel A and Panel B report results for controlled firms and widely held firms, respectively. All regressions include firm-fixed effects and year-fixed effects. For ease of interpretation, all dependent variables are multiplied by 100. Overall, the results show that both a firm’s CAPEX and R&D are negatively affected by the controlling shareholder’s level of pledging. There is also suggestive

evidence that pledging firms have a lower idiosyncratic risk level. Also, consistent with the results in the previous section, pledging leads to a significant increase in systematic risk.

5.3 Payout Policies.

In the last section of this study, we consider whether pledging can affect a firm’s payout policies. The two main channels through which firms distribute cash to shareholders are cash dividends and share repurchases. As mentioned previously, compared to non-pledgers, pledgers have higher incentives to avoid stock price reductions. Cash dividends usually lead to a decrease in stock price, while share repurchases tend to cause a stock price increase by sending a positive signal to the market as well as absorbing a part of any existing sell-side pressure. Therefore, it is possible that firms in which decision makers pledge are more likely to shift from distributing cash dividends to repurchasing shares.

Our data on dividends payments and share repurchases are from TEJ. Within our 8,003 firm-year observations from 2003 to 2013, there are 5,549 firm-year observations (from 718 unique firms) in which the firm pays cash dividends; and there are 1,777 share repurchase announcements from 1,204 firm-year observations (431 unique firms). To test whether a relation exists between pledging and payout policies, we construct two indicator variables that equal to one if the firm pays a cash dividend or buys back its stocks in the next year, respectively. We then regress these variables on the magnitude of pledging by the decision maker in the firm.

The results are presented in Table 10. We estimate logit regressions with industry and year fixed effects and OLS regressions with firm and year fixed effects. For logit regressions, the dependent variables are indicator variables indicating whether the firm has paid a cash dividend or initiated a stock repurchase program respectively. For OLS regressions, the dependent variable is the amount of cash distributed via dividends/repurchases as a proportion of the market capitalization. Overall, our results suggest that the level of pledging by the decision maker significantly reduces the firm’s incentive to pay cash dividends. Also,

consistent with the findings in Chan, Chen, Hu, and Liu (2013), firms in which the decision makers are pledging are more likely to initiate share repurchases. Overall the evidence here shows that the proportion of shares pledged by the decision maker can influence a firm's choice between cash dividends and share repurchases.

6 Conclusion

Many firms around the world permit their insiders to pledge their personal company stock as collateral for bank loans. While allowing pledging alleviates insiders' potential liquidity concerns, this practice can also have potentially adverse consequences for shareholder wealth. We show that initial pledging announcements trigger a significantly negative average market reaction. Firms in which insiders are pledging also tend to have lower valuation as measured by Tobin's Q. Our analysis using a quasi-natural experiment suggests that a reduction in pledging leads to an increase in firm value.

We next explore the potential sources of this observed value reduction surrounding pledging. We find that firms in which large insider pledging activity occurs suffered greater stock price declines during the 2008 Global Financial Crisis. This is consistent with the hypothesis that pledging increases the down-side risk associated with the firm's stock. In addition, consistent with the hypothesis that pledging increases manager risk aversion, we find that firms in which managers pledge their shares undertake less risky but potentially profitable investment projects, reflected in a lower CAPEX and R&D expenditures. Although widely discussed, to our knowledge there is no empirical evidence on whether firms should allow insiders to pledge their stockholdings in the firm. Our findings suggest that insider pledging is detrimental to firm value and should therefore be banned or at least seriously restricted.

References

- Bargeron, Leonce L, Kenneth M Lehn, and Chad J Zutter, 2010, Sarbanes-oxley and corporate risk-taking, *Journal of Accounting and Economics* 49, 34–52.
- Bettis, J Carr, John M Bizjak, and Michael L Lemmon, 2001, Managerial ownership, incentive contracting, and the use of zero-cost collars and equity swaps by corporate insiders, *Journal of Financial and Quantitative Analysis* 36, 345–370.
- Chan, Konan, Hung-Kun Chen, Shing-yang Hu, and Yu-Jane Liu, 2013, Shares pledged and corporate repurchase, *Working paper*.
- Chen, Anlin, and Lanfeng Kao, 2011, Effect of collateral characteristics on bank performance: Evidence from collateralized stocks in taiwan, *Journal of Banking & Finance* 35, 300–309.
- Claessens, Stijn, Simeon Djankov, and Larry HP Lang, 2000, The separation of ownership and control in east asian corporations, *Journal of Financial Economics* 58, 81–112.
- Coles, J., N. Daniel, and L. Naveen, 2006, Managerial incentives and risk-taking, *Journal of Financial Economics* 79, 431–468.
- Finnerty, Joseph E, 1976, Insiders’ activity and inside information: a multivariate analysis, *Journal of Financial and Quantitative Analysis* 11, 205–215.
- Givoly, Dan, and Dan Palmon, 1985, Insider trading and the exploitation of inside information: Some empirical evidence, *Journal of business* pp. 69–87.
- Jaffe, Jeffrey F, 1974, The effect of regulation changes on insider trading, *The Bell Journal of Economics and Management Science* pp. 93–121.
- Jagolinzer, Alan D, Steven R Matsunaga, and P Yeung, 2007, An analysis of insiders’ use of prepaid variable forward transactions, *Journal of Accounting Research* 45, 1055–1079.
- LaPorta, Rafael, Florencio Lopez-de Silanes, and Andrei Shleifer, 1999, Corporate ownership around the world, *The Journal of Finance* 54, 471–517.
- Larcker, David F, and Brian Tayan, 2010, Pledge (and hedge) allegiance to the company, *Rock Center for Corporate Governance at Stanford University Closer Look Series: Topics, Issues and Controversies in Corporate Governance No. CGRP-11*.
- Masulis, R. W., P. K. Pham, and J. Zein, 2011, Family business groups around the world: Financing advantages, control motivations, and organizational choices, *Review of Financial Studies* 24, 3556–3600.
- Phan, Hieu V., 2014, Inside debt and mergers and acquisitions, *Journal of Financial and Quantitative Analysis* 49, 1365–1401.
- Seyhun, H Nejat, 1986, Insiders’ profits, costs of trading, and market efficiency, *Journal of Financial Economics* 16, 189–212.

Yeh, Yin-Hua, 2005, Do controlling shareholders enhance corporate value?, *Corporate Governance: An International Review* 13, 313–325.

Yeh, Yin-hua, Tsun-siou Lee, and Tracie Woidtke, 2001, Family control and corporate governance: Evidence from taiwan, *International Review of Finance* 2, 21–48.

Table 1: Summary Statistics

This table reports basic summary statistics. Panel A summarizes stock ownership and pledging information for all firms, as well as for the sub-samples with a controlling shareholder (Controlled Firms) and without a controlling shareholder (Widely Held Firms). Decision Maker refers to the controlling shareholder in Controlled Firms and managers in Widely Held Firms. Panel B provides descriptive statistics for firm level variables. Board Ownership refers to the total ownership by all managers and board members. *, **, and *** indicate significance at 10%, 5% and 1% level respectively.

Panel A - Ownership & Pledging										
	All Firms			Controlled Firms			Widely Held Firms			
Total firm-year observations	8,003			5,400			2,603			
Proportion with pledging	50.21%			47.57%			55.67%			
Proportion with pledging by Decision Maker				32.67%			52.94%			
Proportion with a larger pledger (>50%)	37.26%			34.50%			42.99%			
Proportion with a large pledging Decision Maker (>50%)				18.67%			40.36%			
Proportion with more than 5% total shares pledged	19.32%			20.94%			15.94%			
Shares pledged / Shares owned (Full Sample)	10.49%			10.37%			10.73%			
Shares pledged / Shares owned (Pledging Sample)	20.89%			21.81%			19.27%			
Shares pledged / Total shares outstanding (Full Sample)	3.10%			3.34%			2.62%			
Shares pledged / Total shares outstanding (Pledging Sample)	6.18%			7.02%			4.70%			

Panel B - Firm Level Characteristics										
	Mean	Median	SE	25%	75%	Firm Pledge Yes	Firm Pledge No	Diff in Mean	Diff in Median	
Assets	291.345	56.042	1465.118	26.936	128.64	346.708	243.595	103.113***	35.414***	
Market Cap	216.89	44.547	903.246	19.339	111.25	302.723	138.839	163.884***	21.933***	
Sales Growth	0.046	0.044	0.304	-0.092	0.182	0.037	0.054	-0.017**	-0.016	
Leverage	0.182	0.158	0.162	0.034	0.287	0.208	0.159	0.049***	0.076***	
Age	10.265	10	6.377	5	15	12.232	8.57	3.661***	4.000***	
ROA	0.076	0.061	0.064	0.03	0.106	0.069	0.083	-0.015***	-0.011***	
Q	1.313	1.118	0.666	0.895	1.49	1.234	1.383	-0.150***	-0.089***	
Board Size	17.436	15	8.439	12	20	18.6	16.451	2.149***	2.000***	
Board Independence	0.274	0.25	0.121	0.182	0.357	0.249	0.295	-0.046***	-0.049***	
Board Ownership	0.353	0.314	0.199	0.204	0.464	0.321	0.381	-0.060***	-0.059***	

Table 2: Shareholder reaction to pledging announcements

This table reports Cumulative Abnormal Returns upon announcements of changes in pledging. Panel A examines announcements of both increases and decreases of pledging, while providing t-tests, signed-rank tests, and plain sign tests on whether the reaction is significantly different from zero. Panel B includes only announcements of increases in pledging, and partitions the sample based on various characteristics. Reported in Panel B include the number of announcements in the sample (N), the percentage of the announcements with negative CARs (% Negative), and the mean value of the CARs (Mean). Controlled Firms (Widely Held Firms) refer to firms that have (do not have) a controlling shareholder. Decision Maker refers to the controlling shareholder in Controlled Firms and managers in Widely Held Firms. First-Time Pledging refers to when the shareholder has no existing pledging prior to the announced pledging. *, **, and *** indicate significance at 10%, 5% and 1% level respectively.

Panel A: Nature of Announcements									
	N	% Negative	Mean	t-Statistics	Median	Signed-Rank Z-Score	Sign Test P-Value		
FF 3-factor [-1,1]	Pledging Up	1816	55.3	-0.331%	-3.678	-0.362%	-4.757	0	
	Pledging Down	1752	53.9	0.105%	1.055	-0.167%	-1.084	0.01	
Market Adjusted [-1,1]	Pledging Up	1816	56.3	-0.465%	-4.218	-0.552%	-5.391	0	
	Pledging Down	1752	52.6	0.095%	0.888	-0.211%	-1.075	0.033	
Panel B: Characteristics of Pledging Increase Announcements									
	Controlled Firms				Widely Held Firms				
	N	% Negative	Mean		N	% Negative	Mean		
Decision Maker Pledging	539	57.0	-0.434%***		710	53.9	-0.347%**		
Non-Decision-Maker Pledging	475	52.0	-0.232%		92	51.1	-0.125%		
Large Pledging (Pledged/Holding > Median)	507	56.8	-0.533%***		401	56.9	-0.550%**		
Small Pledging (Pledged/Holding <= Median)	507	52.5	-0.145%		401	50.4	-0.092%		
Large Pledging (Pledged/Total Outstanding > Median)	507	55.8	-0.488%***		401	58.1	-0.504%**		
Small Pledging (Pledged/Total Outstanding <= Median)	507	53.5	-0.191%		401	49.1	-0.138%		
First-Time Pledging	261	51.0	-0.115%		228	48.7	-0.415%**		
Non-First-Time Pledging	753	55.9	-0.417%***		574	55.6	-0.284%**		
Decision Maker & Large (Pledged/Holding > Median)	333	58.3	-0.641%***		368	57.1	-0.579%**		
Decision Maker & Large (Pledged/Total Outstanding > Median)	379	57.0	-0.534%***		373	58.2	-0.540%**		
Decision Maker & First-Time	96	55.2	-0.198%*		197	50.8	-0.502%**		

Table 3: Effects of pledging on firm value

This table reports results of OLS regressions where the dependent variable is the natural log of Tobin's Q. Regressions in Panel A include industry*year fixed effects while regressions in Panel B include firm-fixed effects and year-fixed effects. Industry is defined based on the Fama-French 48-Industry Classification. Controlled Firms (Widely Held Firms) refer to firms that have (do not have) a controlling shareholder. Decision Maker refers to the controlling shareholder in Controlled Firms and managers in Widely Held Firms. For All Firms, the dummy variable Any Pledging [1,0] equals one as long as any manager, board member, or large shareholder has pledged, while the continuous variable Any Pledging [%] refers to all shares pledged by managers, board members, and blockholders divided by total shares outstanding in the firm. Decision Maker Pledging [%] refers to all shares pledged by the decision maker divided by the total shares outstanding in the firm. Beneath each coefficient is the associated p-value. *, **, and *** indicate significance at 10%, 5% and 1% level respectively.

Panel A: Industry + Year FE						
	All Firms		Controlled Firms		Widely Held Firms	
	(1)	(2)	(3)	(4)	(5)	(6)
Any Pledging [1,0]	-0.044** (0.019)					
Any Pledging [%]		-0.192 (0.213)				
Decision Maker Pledging [1,0]			-0.053** (0.027)		-0.006 (0.832)	
Non-Decision Maker Pledging [1,0]			0.006 (0.792)		0.015 (0.735)	
Decision Maker Pledging [%]				-0.405** (0.028)		-0.598** (0.030)
Non-Decision Maker Pledging [%]				0.647 (0.257)		-0.065 (0.891)
Ln(Market Cap)	0.105*** (0.000)	0.102*** (0.000)	0.103*** (0.000)	0.102*** (0.000)	0.100*** (0.000)	0.098*** (0.000)
Sales Growth	0.141*** (0.000)	0.141*** (0.000)	0.125*** (0.000)	0.126*** (0.000)	0.162*** (0.000)	0.157*** (0.000)
Cash/Assets	0.447*** (0.000)	0.454*** (0.000)	0.474*** (0.000)	0.482*** (0.000)	0.305* (0.064)	0.332** (0.023)
Leverage	-0.047 (0.383)	-0.058 (0.277)	-0.011 (0.855)	-0.020 (0.733)	-0.153 (0.118)	-0.178** (0.035)
R&D/Assets	3.090*** (0.000)	3.084*** (0.000)	2.992*** (0.000)	3.013*** (0.000)	2.974*** (0.000)	2.902*** (0.000)
36-Month Volatility	-0.029 (0.579)	-0.026 (0.622)	-0.029 (0.633)	-0.020 (0.734)	-0.047 (0.591)	-0.030 (0.704)
Firm Age	-0.014*** (0.000)	-0.014*** (0.000)	-0.013*** (0.000)	-0.014*** (0.000)	-0.018*** (0.000)	-0.019*** (0.000)
Board Size	-0.005*** (0.004)	-0.005*** (0.003)	-0.007*** (0.000)	-0.007*** (0.000)	-0.001 (0.709)	-0.002 (0.426)
Board Independence	0.202** (0.020)	0.218** (0.011)	0.193** (0.050)	0.207** (0.034)	0.159 (0.240)	0.152 (0.154)
Decision Maker Ownership	0.191*** (0.003)	0.215*** (0.001)	0.181** (0.017)	0.205*** (0.008)	0.134 (0.326)	0.186 (0.130)
Industry*Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,372	6,372	4,268	4,268	2,104	2,104
Adjusted R-squared	0.421	0.419	0.430	0.430	0.409	0.491

Panel B: Firm FE & Year FE						
	All Firms		Controlled Firms		Widely Held Firms	
	(1)	(2)	(3)	(4)	(5)	(6)
Any Pledging [1,0]	-0.065*** (0.001)					
Any Pledging [%]		-0.613*** (0.006)				
Decision Maker Pledging [1,0]			-0.066** (0.032)		-0.043** (0.044)	
Non-Decision Maker Pledging [1,0]			-0.009 (0.649)		-0.014 (0.622)	
Decision Maker Pledging [%]				-0.784** (0.016)		-0.425** (0.041)
Non-Decision Maker Pledging [%]				-0.233 (0.668)		0.323 (0.299)
Ln(Market Cap)	0.065*** (0.000)	0.063*** (0.000)	0.069*** (0.000)	0.071*** (0.000)	0.068*** (0.000)	0.063*** (0.000)
Sales Growth	0.079*** (0.000)	0.079*** (0.000)	0.069*** (0.000)	0.068*** (0.000)	0.053** (0.022)	0.051** (0.017)
Cash/Assets	0.210** (0.025)	0.209** (0.026)	0.206* (0.094)	0.203* (0.095)	0.219 (0.157)	0.218 (0.143)
Leverage	-0.140** (0.025)	-0.127** (0.040)	-0.175** (0.031)	-0.167** (0.034)	-0.020 (0.833)	-0.014 (0.867)
R&D/Assets	0.470 (0.467)	0.447 (0.491)	1.497* (0.052)	1.420* (0.065)	-1.443 (0.168)	-1.645* (0.086)
36-Month Volatility	0.175*** (0.000)	0.166*** (0.001)	0.125** (0.032)	0.122** (0.029)	0.260*** (0.001)	0.280*** (0.000)
Board Size	-0.003** (0.029)	-0.003** (0.025)	-0.002 (0.101)	-0.003* (0.094)	-0.001 (0.702)	-0.001 (0.578)
Board Independence	0.173** (0.019)	0.176** (0.017)	0.191** (0.042)	0.199** (0.034)	0.177 (0.182)	0.186 (0.123)
Decision Maker Ownership	0.378*** (0.000)	0.404*** (0.000)	0.458*** (0.000)	0.502*** (0.000)	0.311* (0.097)	0.595*** (0.001)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,372	6,372	4,268	4,268	2,104	2,104
Adjusted R-squared	0.704	0.704	0.709	0.711	0.762	0.794

Table 4: Shareholder reaction to the law amendment - univariate analysis

This table reports the announcements returns of the passage of the law amendment. CAR is measured using the Fama-French 3-factor model over the event window $[-1,1]$. Event 1 refers to the passage of the proposal during the initial discussion on June 08 2011; while Event 2 refers to the passage of the proposal during the final discussion on October 25 2011. Sum of CARs is the sample where the two CARs for each firm are summed up. In each sample, Treatment refers to firms where the Decision Maker already pledges over 50% of his/her shares. Control refers to firms identified using the Propensity Score Matching method and has no pledging at all. Controlled Firms (Widely Held Firms) refer to firms that have (do not have) a controlling shareholder. Decision Maker refers to the controlling shareholder in Controlled Firms and managers in Widely Held Firms. *, **, and *** indicate significance at 10%, 5% and 1% level respectively.

		N	% Positive	Mean			Median		
				All	Treatment	Control	All	Treatment	Control
Event 1	Controlled Firms	439	59.9	1.223***	1.188**	1.238***	0.524***	0.310***	0.349***
	Widely-Held Firm	307	59.3	0.899***	1.044***	0.439	0.570***	0.698***	0.373***
Event 2	Controlled Firms	435	57.5	0.603***	0.782	0.566	0.273	0.937	0.329
	Widely-Held Firm	305	59	0.330	0.557	0.045	0.345	0.574	-0.072***
Sum of CARs	Controlled Firms	439	65.4	1.814***	2.467***	1.382**	1.284***	1.826***	1.471***
	Widely-Held Firms	307	61.6	1.236***	1.682***	0.339	1.263***	1.326***	0.284***

Table 5: Shareholder reaction to the law amendment - multivariate analysis

This table reports results of the regressions where the dependent variable is the CAR for each firm measured using the Fama-French 3-factor model over the event window [-1,1]. Event 1 refers to the passage of the proposal during the initial discussion on June 08 2011; while Event 2 refers to the passage of the proposal during the final discussion on October 25 2011. Pooled is the sample where the two CARs for each firm are summed up. In all regressions, Treat equals one for firms where the Decision Maker already pledges over 50% of his/her shares, and zero for control firms identified using the Propensity Score Matching method and have no pledging at all. Controlled Firms (Widely Held Firms) refer to firms that have (do not have) a controlling shareholder. Decision Maker refers to the controlling shareholder in Controlled Firms and managers in Widely Held Firms. Industry is defined based on the Fama-French 48-Industry Classification. Beneath each coefficient is the associated p-value. *, **, and *** indicate significance at 10%, 5% and 1% level respectively.

	Controlled Firms			Widely Held Firms		
	Event 1	Event 2	Pooled	Event 1	Event 2	Pooled
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	0.665*	0.028	3.043***	0.035	0.307	0.310
	(0.066)	(0.957)	(0.002)	(0.913)	(0.615)	(0.498)
Ln(Market Cap)	-0.373	-0.288	-0.522	-0.693**	-0.825*	-1.443**
	(0.236)	(0.408)	(0.108)	(0.034)	(0.077)	(0.019)
Sales Growth	-2.589***	0.582	-2.917***	1.042	0.266	1.720
	(0.000)	(0.443)	(0.004)	(0.507)	(0.904)	(0.582)
Cash/Assets	0.238	-3.699	-6.966**	-2.349	-0.274	1.229
	(0.915)	(0.463)	(0.024)	(0.495)	(0.934)	(0.821)
Leverage	-2.252	0.648	-5.134	-2.378	-2.985	-4.953
	(0.330)	(0.839)	(0.390)	(0.337)	(0.281)	(0.137)
R&D/Assets	-24.303***	-7.257	-27.749**	-4.245	-30.241***	-35.452***
	(0.000)	(0.394)	(0.029)	(0.549)	(0.000)	(0.004)
36-Month Volatility	-5.007	-8.029*	-13.795***	-3.237	-2.988	-5.081
	(0.256)	(0.054)	(0.006)	(0.254)	(0.615)	(0.216)
Firm Age	-0.015	0.229*	0.165***	0.037	0.015	0.065
	(0.586)	(0.097)	(0.003)	(0.353)	(0.833)	(0.367)
Ln(Q)	-2.593**	1.100	-1.022	-1.302	3.447**	1.691
	(0.013)	(0.270)	(0.212)	(0.134)	(0.018)	(0.266)
Board Size	1.131	8.573	9.490	8.451	7.335	12.159
	(0.854)	(0.340)	(0.474)	(0.201)	(0.138)	(0.221)
Board Independence	1.650	1.349	7.160***	-1.753**	-0.418	-2.217
	(0.247)	(0.213)	(0.003)	(0.014)	(0.671)	(0.118)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	146	150	160	182	179	194
Adjusted R-squared	0.111	0.063	0.076	0.083	0.083	0.041

Table 6: Changes in pledging before and after the law amendment

This table shows the changes in pledging around the passage of the law amendment. Pre-event pledging summary is based on the pledging data in October 2011; while post-event pledging summary is based on the pledging data in September 2012. The first five rows are at firm level, while the last three rows are at individual level. Votes at Risk is the total number of shares pledged over 50% by the pledger. Controlled Firms (Widely Held Firms) refer to firms that have (do not have) a controlling shareholder. Decision Maker refers to the controlling shareholder in Controlled Firms and managers in Widely Held Firms. Threatened refers to when, assuming the largest shareholder does not reduce pledging and hence loses all the votes exceeding 50%, the second largest shareholder's ownership exceeds 50% of the largest shareholder's remaining ownership.

Pre: Oct 2011. Post: Sep 2012	Controlled Firms		Widely Held Firms	
	Pre	Post	Pre	Post
Proportion of firms with pledging	39.58%	39.25%	49.20%	49.71%
Proportion of firms with 30% pledging	33.28%	31.05%	46.02%	44.60%
Proportion of firms with 50% pledging	26.89%	22.60%	38.17%	35.75%
Proportion of firms with 50% pledging by Decision Maker	25.13%	20.48%	34.93%	31.49%
Proportion of firms with a Threatened Decision Maker that is pledging over 50%	31.83%	14.19%	12.75%	10.74%
Votes at Risk / Shares Outstanding (All Pledgers with 50% Pledging)	1.66%	1.38%	1.26%	1.03%
Votes at Risk / Shares Outstanding (Decision Makers with 50% Pledging)	2.70%	1.99%	1.46%	1.55%
Votes at Risk / Shares Outstanding (Threatened Decision Makers with 50% Pledging)	3.20%	1.72%	1.81%	1.11%

Table 7: Diff-in-Diff analysis on firm value

This table reports results of Difference-in-Difference tests. For all columns, the dependent variable is Tobin's Q. The sample includes observations in 2011 and 2012. Controlled Firms (Widely Held Firms) refer to firms that have (do not have) a controlling shareholder. Decision Maker refers to the controlling shareholder in Controlled Firms and managers in Widely Held Firms. Treat equals one for firms where the Decision Maker already pledges over 50% of his/her shares, and zero for control firms identified using the Propensity Score Matching method and have no pledging at all. Post equals one for observations in 2012 and zero for observations in 2011. Columns 1 and 3 are based on all treatment and comparable firms, while Columns 2 and 4 are based on Threatened treatment firms and their corresponding comparable firms only. Threatened refers to when, assuming the largest shareholder does not reduce pledging and hence loses all the votes exceeding 50%, the second largest shareholder's ownership exceeds 50% of the largest shareholder's remaining ownership. Industry is defined based on the Fama-French 48-Industry Classification. Beneath each coefficient is the associated p-value. *, **, and *** indicate significance at 10%, 5% and 1% level respectively.

	Controlled Firms		Widely Held Firms	
	Full	Threatened	Full	Threatened
	(1)	(2)	(3)	(4)
Treat	-0.133*** (0.009)	-0.106 (0.195)	0.069 (0.237)	0.059 (0.391)
Post	0.055* (0.085)	0.093* (0.067)	0.125*** (0.000)	0.124*** (0.006)
Treat*Post	0.090** (0.032)	0.200** (0.013)	-0.049 (0.263)	0.116* (0.073)
Ln(Market Cap)	-0.009 (0.773)	0.034 (0.515)	0.046 (0.166)	0.066 (0.231)
Sales Growth	0.122* (0.089)	0.238* (0.057)	0.167*** (0.001)	0.129* (0.083)
Cash/Assets	0.623* (0.094)	0.965** (0.013)	-0.115 (0.644)	-0.538* (0.062)
Leverage	0.057 (0.705)	-0.271 (0.279)	-0.342 (0.144)	-0.505 (0.126)
R&D/Assets	1.564 (0.149)	1.810 (0.180)	2.452* (0.054)	2.750** (0.042)
36-Month Volatility	-0.184 (0.469)	0.202 (0.558)	-0.030 (0.898)	0.112 (0.756)
Firm Age	-0.011* (0.065)	-0.013 (0.255)	-0.019*** (0.003)	-0.013 (0.150)
Board Size	-0.003 (0.478)	-0.000 (0.982)	-0.006 (0.291)	-0.002 (0.808)
Board Independence	-0.056 (0.864)	0.676 (0.169)	-0.158 (0.526)	0.300 (0.375)
Decision Maker Ownership	-0.088 (0.793)	0.044 (0.948)	-0.139 (0.674)	-0.207 (0.617)
Industry FE	Yes	Yes	Yes	Yes
Observations	276	139	277	174
Adjusted R-squared	0.185	0.286	0.191	0.197

Table 8: Shareholding and stock prices during the GFC

This table reports analyses of the impact of pledging on firms' performance during the Global Financial Crisis. In Panel A, the dependent variable for all columns is the percentage change in ownership from June 2008 to August 2008 for each manager, board member, and blockholder. The independent variable Pledging>45% equals one if the individual pledges more than 45% of his/her shares and zero otherwise. In Panel B, the dependent variable for all columns is the Fama-French 3-factor adjusted stock return from June 2008 to August 2008. Total Pledging [%] is the total number of shares pledging by all managers, board members and blockholders in the firm divided by the total number of shares outstanding; while Top 3 Pledging [%] refers to the total shares pledged by the largest three pledgers in the firm ranked by the proportion of shares pledged, divided by the total shares outstanding in the firm. Ownership>3% & Pledging>45% (75%) are indicator variables that equal to one if the firm has at least one individual who owns more than 3% of the shares and has pledged more than 45% (75%) of his/her shares. All explanatory variables related to pledging are based on data at the end of May 2008; all other explanatory variables are based on data at the end of December 2007. Beneath each coefficient is the associated p-value. Standard errors are clustered at industry level. *, **, and *** indicate significance at 10%, 5% and 1% level respectively.

Panel A: Changes in Holding						
	(1)	(2)	(3)	(4)	(5)	(6)
Pledging>45% [0,1]	-0.567* (0.092)		-0.389*** (0.000)		-0.420** (0.014)	
Pledging/Holding		-0.782* (0.078)		-0.569*** (0.000)		-0.578** (0.015)
Ln(Market Cap)	0.201 (0.257)	0.202 (0.256)	4.488* (0.063)	4.501* (0.063)		
Sales Growth	-1.146 (0.415)	-1.144 (0.416)	-0.000 (0.294)	-0.000 (0.295)		
Cash/Assets	-0.810 (0.465)	-0.822 (0.460)	-0.008 (0.778)	-0.008 (0.777)		
Leverage	-0.913 (0.344)	-0.906 (0.347)	-0.000** (0.048)	-0.000** (0.047)		
R&D/Assets	-9.886** (0.043)	-9.865** (0.043)	0.079 (0.722)	0.080 (0.721)		
36-Month Volatility	3.740 (0.143)	3.746 (0.142)				
Firm Age	-0.006 (0.893)	-0.006 (0.902)				
Board Size	0.004 (0.752)	0.003 (0.768)	-0.506 (0.196)	-0.500 (0.199)		
Board Independence	1.666 (0.339)	1.652 (0.341)	0.214 (0.790)	0.220 (0.784)		
Industry indicators	Yes	Yes	Yes	Yes	No	No
Firm indicators	No	No	No	No	Yes	Yes
Observations	8,942	8,942	5,376	5,376	9,757	9,757
Adjusted R-squared	-0.003	-0.003	-0.001	-0.001	0.023	0.023

Panel B: Changes in Stock Return				
	(1)	(2)	(3)	(4)
Total Pledging [%]	-0.201* (0.093)			
Top 3 Pledging [%]		-0.265** (0.032)		
Ownership>3% & Pledging>45% [1,0]			-0.025* (0.080)	
Ownership>3% & Pledging>75% [1,0]				-0.048** (0.014)
Ln(Market Cap)	0.002 (0.673)	0.002 (0.695)	0.002 (0.682)	0.001 (0.796)
Sales Growth	0.003 (0.916)	0.003 (0.909)	0.004 (0.896)	0.010 (0.737)
Cash/Assets	-0.088 (0.204)	-0.090 (0.197)	-0.057 (0.429)	-0.059 (0.382)
Leverage	-0.143*** (0.006)	-0.142*** (0.007)	-0.135** (0.010)	-0.132** (0.011)
R&D/Assets	0.305 (0.323)	0.320 (0.299)	0.366 (0.254)	0.248 (0.421)
36-Month Volatility	-0.088 (0.137)	-0.088 (0.139)	-0.091 (0.122)	-0.089 (0.129)
Firm Age	-0.000 (0.788)	-0.000 (0.817)	-0.001 (0.697)	-0.000 (0.977)
Board Size	0.001 (0.437)	0.001 (0.410)	0.001 (0.445)	0.001 (0.348)
Board Independence	-0.015 (0.806)	-0.015 (0.812)	-0.011 (0.869)	-0.013 (0.837)
Board Ownership	0.107** (0.032)	0.110** (0.028)	0.102** (0.041)	0.084* (0.078)
Industry indicators	Yes	Yes	Yes	Yes
Observations	629	629	637	637
Adjusted R-squared	0.084	0.086	0.081	0.089

Table 9: Effects of pledging on risk-taking

This table shows the analyses of the relation between pledging by the decision maker and the level of risk-taking by the firm. Panel A and B report results for Controlled Firms and Widely Held Firms respectively. CAPEX and R&D are both lagged and scaled by total assets. Stock Volatility is based on the daily stock returns over the 12 months following the end of the current year. Systematic Risk is the beta estimated from the Fama-French 3-Factor model based on daily stock returns over the 12 months following the end of the current year. Idiosyncratic Risk is the volatility of the residuals in this model. All dependent variables are multiplied by 100. Controlled Firms (Widely Held Firms) refer to firms that have (do not have) a controlling shareholder. Decision Maker refers to the controlling shareholder in Controlled Firms and managers in Widely Held Firms. Decision Maker Pledging [%] refers to all shares pledged by the decision maker divided by the total shares outstanding in the firm. Beneath each coefficient is the associated p-value. Standard errors are clustered at firm level. *, **, and *** indicate significance at 10%, 5% and 1% level respectively.

Panel A: Controlled Firms					
	CAPEX	R&D	Stock Volatility	Systematic Risk	Idiosyncratic Risk
	(1)	(2)	(3)	(4)	(5)
Decision Maker Pledging [%]	-6.847*** (0.000)	-1.970** (0.026)	-0.624 (0.576)	9.496** (0.038)	-0.089* (0.053)
Ln(Market Cap)	0.237 (0.139)	-0.069 (0.213)	0.265** (0.021)	0.962** (0.020)	0.001 (0.851)
Sales Growth	0.495** (0.023)	-0.080 (0.181)	0.606*** (0.000)	-2.945*** (0.000)	-0.016*** (0.008)
Cash/Assets	3.122** (0.019)	-0.137 (0.784)	-0.341 (0.586)	-1.032 (0.712)	-0.029 (0.420)
Leverage	-2.646*** (0.003)	-0.096 (0.719)	1.549*** (0.009)	-0.694 (0.798)	-0.019 (0.445)
Board Size	-0.039 (0.133)	0.006 (0.335)	-0.027 (0.208)	0.082 (0.166)	0.001 (0.438)
Board Independence	-1.014 (0.370)	-0.225 (0.483)	-1.438* (0.076)	5.709* (0.082)	0.039 (0.346)
Decision Maker Ownership	3.871** (0.012)	-0.043 (0.893)	0.038 (0.975)	-2.138 (0.730)	0.079 (0.477)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	4,408	4,397	4,408	4,408	4,408
Adjusted R-squared	0.539	0.923	0.571	0.661	0.640

Panel B: Widely Held Firms					
	CAPEX	R&D	Stock Volatility	Systematic Risk	Idiosyncratic Risk
	(1)	(2)	(3)	(4)	(5)
Decision Maker Pledging [%]	-8.305* (0.066)	-0.385 (0.581)	-1.239 (0.511)	16.509* (0.090)	0.039 (0.683)
Ln(Market Cap)	0.340 (0.180)	-0.067 (0.499)	0.120 (0.490)	1.233** (0.047)	-0.002 (0.731)
Sales Growth	0.669** (0.047)	-0.028 (0.685)	0.448* (0.066)	-1.248 (0.101)	-0.007 (0.253)
Cash/Assets	5.894*** (0.007)	-0.603 (0.391)	0.398 (0.674)	1.916 (0.708)	-0.031 (0.636)
Leverage	-3.463** (0.017)	0.244 (0.629)	0.639 (0.519)	-2.755 (0.479)	0.038 (0.288)
Board Size	-0.023 (0.472)	-0.006 (0.474)	-0.017 (0.256)	0.070 (0.371)	0.000 (0.630)
Board Independence	0.131 (0.940)	-0.550 (0.403)	-0.731 (0.488)	-0.994 (0.878)	-0.020 (0.808)
Decision Maker Ownership	5.823 (0.179)	0.695 (0.342)	-2.258* (0.073)	12.314 (0.173)	0.110 (0.111)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	2,164	2,164	2,162	2,162	2,162
Adjusted R-squared	0.517	0.926	0.626	0.637	0.864

Table 10: Effects of pledging on payout policies

This table shows analyses of the relation between pledging and firms' choice of payout methods. Columns 1, 3, 5, and 7 are logit regressions while Columns 2, 4, 6, and 8 are OLS regressions. The dependent variables for logit regressions are dummy variables that equal to one if the firm has paid a cash dividend (as in Columns 1 and 5) or initiated a stock repurchase program (as in Columns 3, and 7) in the following year. The dependent variables for the OLS regressions are the actual amount of dividends or repurchases divided by the book value of equity. Controlled Firms (Widely Held Firms) refer to firms that have (do not have) a controlling shareholder. Decision Maker refers to the controlling shareholder in Controlled Firms and managers in Widely Held Firms. Decision Maker Pledging [%] refers to all shares pledged by the decision maker divided by the total shares outstanding in the firm. Beneath each coefficient is the associated p-value. Standard errors are clustered at firm level. *, **, and *** indicate significance at 10%, 5% and 1% level respectively.

	Controlled Firms				Widely Held Firms			
	Dividends		Repurchases		Dividends		Repurchases	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Market Cap)	(0.017) 0.503*** (0.000)	(0.053) 0.318 (0.132)	(0.000) 0.033 (0.515)	(0.663) 0.112* (0.055)	(0.025) 0.472*** (0.000)	(0.445) -0.151 (0.571)	(0.032) -0.095 (0.138)	(0.037) 0.123 (0.180)
Sales Growth	1.374*** (0.000)	1.714*** (0.000)	-0.371** (0.021)	-0.095 (0.220)	1.839*** (0.000)	2.309*** (0.000)	-0.326 (0.161)	0.076 (0.697)
Cash/Assets	0.684 (0.376)	4.032** (0.023)	0.234 (0.697)	0.279 (0.652)	1.482 (0.168)	4.996 (0.145)	0.423 (0.627)	1.994** (0.035)
Leverage	-4.336*** (0.000)	-5.670*** (0.000)	-0.439 (0.317)	-0.458 (0.269)	-5.154*** (0.000)	-1.423 (0.442)	-0.926 (0.144)	-0.492 (0.375)
Firm Age	-0.089*** (0.000)		-0.006 (0.713)		-0.064** (0.014)		-0.006 (0.769)	
Board Size	0.010 (0.426)	-0.025 (0.373)	0.001 (0.902)	0.015* (0.085)	-0.017 (0.317)	-0.067 (0.190)	0.008 (0.558)	-0.004 (0.873)
Board Independence	-0.307 (0.647)	-0.265 (0.867)	-0.592 (0.324)	0.170 (0.763)	-1.379 (0.170)	-0.353 (0.880)	-1.341* (0.097)	-0.001 (0.999)
Decision Maker Ownership	0.259 (0.667)	4.922*** (0.008)	-2.499*** (0.000)	0.350 (0.541)	1.652 (0.166)	-0.890 (0.850)	-2.958*** (0.006)	-2.085 (0.222)
Industry Fixed Effects	Yes	No	Yes	No	Yes	No	Yes	No
Firm Fixed Effects	No	Yes	No	Yes	No	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,335	4,371	4,279	4,391	2,126	2,157	2,068	2,161
Pseudo R-squared	0.198		0.136		0.224		0.129	
Adjusted R-squared		0.708		0.154		0.693		0.186