The Impact of the Insider Share Pledging Regulation on Stock Trading and Firm Valuation

Abstract

Previous research suggests that insiders' shareholding pledges are associated with agency problems. However, how investors evaluate and react to such behavior is less clear. We investigate the stock market reactions to three insiders' shareholding pledging regulatory events in Taiwan. The first event in 2007 limited the amount of bank loans as a percentage of insiders' stock pledging value (the pledge value rule event). The second event is the first reading of the 2011 Company Act amendment (the first reading event), which was an attempt to improve minority shareholder protection by restricting the voting rights of pledged shares exceeding one-half of the shares held by a director on election. The third event is the passage of the amendment (the passage event). We show that firms with insiders making share pledges experience significantly higher stock returns around events compared to those without such insiders. In addition, the results are more significant for firms with small board of directors' shareholdings, when the agency problem is likely to be more severe. These results are consistent with the alignment hypothesis that firms that are less compliant with the rules benefit more from legislative changes. We also find that institutional investors increased their shareholdings of pledging (less compliant) firms after the passage event, indicating that a reduction in agency problems increases institutions' willingness to hold shares of less compliant firms. Our results have important implications on how ameliorating the legal system can help to improve investor protection.

Keywords: Share pledges, Regulation, Investor protection, Institutional investment
JEL classification: G14, G34, K22

1. Introduction

Lending banks usually require collateral in loan contracts to help mitigate the risk of information asymmetry between the bank and the borrower (Berger et al., 2011). When banks are uncertain of whether borrowers will engage in morally hazardous activities, the collateral serves as an insurance against unfavorable conditions. In line with this argument, previous studies report that collateral is most often related to borrowers with higher default risk (Berger and Udell, 1990; Coco, 2000; Menkhoff et al., 2006). In addition, when the top management of a firm creates a pledge on shareholdings for bank loans, the agency costs of outside investors

case, insiders who intend to tunnel the companies do not pay back the loan and leave "a shell company."[1] Thus, the insiders' share pledging is likely to deteriorate corporate governance and is so costly to minority stockholders that regulators have called for increased regulations (Lee and Yeh, 2004).

To improve the protection of minority shareholders, the Financial Supervisory Commission, the regulatory body of the financial industries in Taiwan, instituted a series of new rules and regulations. It announced in January 2007 a rule which limited the amount of a bank loan backed by insiders' pledged shares of listed firms to 60% or less of the market value of the pledged shares (hereafter, the pledge value rule event).[2] At the end of 2010, regulators advocated for additional rules on directors who pledge stocks (hereafter, the first reading event).[3] After a 10-month debate, the Legislative Yuan amended Article 197–1 of the Company Act on October 25, 2011 (hereafter, the passage event) to prohibit the exercise of voting rights of "excessive pledged shares," defined as pledged shares that exceed one-half of the shares held by a director on election. See the appendix for the full text of Article 197–1.

This study examines whether insider pledging affects investors' evaluation of a firm by examining stock market reactions to insider share pledging regulatory changes. First, based on the argument that firms with directors who pledge shares for bank loans suffer from more agency problems (Lee and Yeh, 2004), we hypothesize that these firms experience higher stock returns after the proposal of regulations against insider share pledges. To test this hypothesis, we examine the market reactions to the three relevant regulatory events. Second, we investigate

[1] Prior studies (e.g., Johnson et al., 2000b) use the term "tunneling" to describe the transfer of assets and profits from firms for the benefit of those who control them. In an emerging market such as Taiwan, which features family-controlled firms and directors participating in management, dominant insiders are more likely to take risks in entities where their cash flow rights are low and then siphon out proceeds to entities where their cash flow rights are high. See Lee and Yeh (2004), who indicate that stock pledge is one of the key characteristics of financially distressed firms in Taiwan.

[2] The insiders herein include directors and supervisors.

[3] "First reading" indicates the first time that proposed bills are listed on the agenda for report in the Legislative Yuan (the equivalent of the Taiwanese Congress).

whether this effect is more pronounced for firms potentially suffer from more agency problems, such as those with a large amount of insider pledges (the pledge value rule event) or with directors who pledge excessive shares for bank loans (the first reading and passage events). The chairperson of the board is one of the most important insiders and oversees the firm's daily operations. Thus, the board chairperson's share pledges may signal a more severe conflict of interests.[4] Thus, we anticipate that firms with a chairperson who excessively pledges shares will experience more significantly positive returns than those without such a chairperson after the first reading and the passage events.

We also use the amount of the board of directors' shareholdings as a proxy for agency problems. When the board of directors' shareholdings are small, directors may not always act in the best interests of outside shareholders. In line with this argument, several studies find that small shareholdings by the board indicate an agency problem and thus result in low firm values (Jensen and Meckling, 1976; Leland and Pyle, 1977; Jensen, 1993). More important, if directors with small shareholdings pledge their shares for bank loans, the agency problem is likely to be even more severe. Thus, our second hypothesis predicts that the regulation changes better align owner–manager interests for firms with small directorship shareholdings, compared to those with large directorship shareholdings.

Finally, institutional investors are attentive to governance practices of listed firms (Ferreira and Matos, 2008). Particularly, prior research shows that foreign institutions are less interested in investing in firms with ownership structures conducive to governance problems (Leuz et al., 2008). Therefore, agency costs resulting from insider ownership can affect the shareholdings of institutional investors. Previous literature suggests that the listed firms' adoption of new legal standards plays an important role in institutional shareholdings (Florou and Pope, 2012). Thus, institutional investors are likely to change their shareholdings

[4] In contrast to the role of a chairperson in many countries, in Taiwan, under the Company Act, a chairperson acts as the legal representative of a company. The chairperson is also the highest authority in a firm and is responsible for its overall operations.

significantly after the adoption of new regulations. Accordingly, we conjecture that before the passage of the 2011 Company Act amendment, institutional investors had little incentive to invest in pledged firms. However, once the act passed, institutional investors are more likely to increase their shareholdings in pledged firms, given the benefits the act provides these firms.

The legislative changes related to insider share pledging in Taiwan provide a good research opportunity to examine how investors evaluate the pledging behavior of insiders for two reasons. First, insider pledging and firm values may be jointly determined and reverse causality is likely. For example, a negative relation between insider pledging and firm value is possible because insiders reduce or cancel pledges in their bank loans when the share prices increase. However, our sample of three regulatory events are exogenous shocks to the pledging decisions of insiders, and endogeneity problems are less of a concern for such quasi-natural

hands. The potential opposition to the bill from some lawmakers can delay the process as political negotiations take place. According to the regulations, once the current meeting period of the Legislative Yuan ends, the entire legal process must be started all over again. Consequently, significant uncertainty exists about whether the new provisions of the act will eventually be implemented.

In addition, the influences of the 2007 pledge value rule and the 2011 voting rights restriction events on insider pledging are different. The pledge value rule constrains the banking industry's ability to make loans to insiders backed by their company's shareholdings, whereas the 2011 new rules do not, per se, prevent directors from pledging shares. Rather, the rules only limits pledged shares that exceed one-half of the shares held by a director on election.[7] Thus, directors who pledge over 50% of their stocks lose some voting power in the general meetings. Hence, these regulations differ in the way they discourage insiders from over pledging stocks ex ante. Thus, the passage of the Company Act amendment is still likely to have a significant impact on stock returns because it contains substantial unexpected information.

Although prior studies provide evidence that investor protection regulations increase shareholder wealth, the consequences of the regulation changes in Taiwan are uncertain. Some research argues that the willingness of a firm to improve investor protection plays an important role in determining whether shareholders bene

may depend on firms' compliance with the regulations. Because the literature provides mixed conclusions, this study examines the importance of the compliance issue.

This study contributes to the literature on regulation and its effects on firm value (Chow, 1983; Johnson et al., 2000a; Bushee and Leuz, 2005; Greenstone et al., 2006; Chhaochharia and Grinstein, 2007; Wintoki, 2007; Hochberg et al., 2009; Berkman et al., 2010; Iliev, 2010; Cai and Walkling, 2011; Larcker et al., 2011; Black et al., 2015). Our results show that firms with insiders who make share pledges for bank loans experience higher stock returns following the pledging-related regulatory events compared with firms without such insiders. The findings are consistent with the alignment hypothesis that regulations benefit firms that previously

Finally, this study contributes to the literature on portfolio allocation preferences with regard to investor protection (La Porta et al., 2000; Aggarwal et al., 2005; Ferreira and Matos, 2008; Leuz et al., 2008; Aggarwal et al., 2011). We show that foreign investors and domestic institutional investors increase their shareholdings following the passage of the 2011 Company Act amendment in firms with directors who make share pledges. The findings provide evidence that governance-sensitive investors become more willing to hold stocks of previously less-compliant firms, given that the adopti

insiders, which mitigates information asymmetry for outside investors on insiders' personally pledged borrowings. Although this regulation improves the transparency of pledged borrowing, the risk of managerial rent extraction remains.

In Taiwan as well as in many other countries, loan contracts with pledged stocks include terms of a collateral maintenance ratio.[9]

find that directors who have financing needs and hold high turnover stocks prefer to pledge their stocks at private banks for loans. Overall, the literature shows that shareholders bear higher risk when insiders pledge stocks for bank loans. Thus, the new regulations of 2007 and 2011, which limit the amount of shares insiders can pledge and the voting rights of pledged

the 2007 Say-on-Pay bill, which gives shareholders the right to vote on executive compensation, and find that stocks of firms with positive abnormal CEO pay and low CEO pay-for-performance sensitivity reacted positively to the passage of the bill. Berkman et al. (2010) study three regulatory changes in the Chinese security market in 2000 and find firms with minority shareholders, who face greater risk of expropriation, benefit from new regulations, especially for private firms relative to state-owned enterprises. These findings are consistent with the notion that laws can help mitigate the expropriation of minority shareholders by insiders and thus lead to higher shareholder values.

Previous research suggests that insider share pledging is associated with higher agency costs and a higher possibility of corporate financial distress. Investors may require a higher rate of returns for holding stocks of the firms with such concerns, and, consequently, the price of these stocks declines. Based on the alignment hypothesis (Chhaochharia and Grinstein, 2007; Berkman et al., 2010; Cai and Walkling, 2011), we expect these firms to benefit more from regulatory changes that lower insiders' incentives to pledge shares. Accordingly, we expect that regulation changes are more effective for firms with insider share pledging and that these firms have higher stock returns than those without insider share pledging.[11] We therefore state our first hypothesis as follows.

H1: *Firms with insider share pledging for bank loans will experience higher stock returns compared with those without such insiders after the share pledging-related regulatory events.*

In addition, the amount of the board of directors'

these directors are more likely to engage in rent-seeking activities and relationship-based transactions. In line with this argument, several studies find that small shareholdings by the board are indicative of agency problems and result in low firm value (Jensen and Meckling, 1976; Leland and Pyle, 1977; Jensen, 1993). More important, if directors with small

Berkman et al., 2010; Cai and Walkling, 2011).

We investigate whether the three sample events affect the value of firms with insider share pledging by using the Fama–French–Carhart four-factor model to examine the abnormal returns around the sample events:

$$R_{p,t} \quad R_{f,t} \quad {}_0 \quad {}_1(R_{m,t} \quad R_{f,t}) \quad {}_2SMB_t \quad {}_3HML_t \quad {}_4UMD_t \quad {}_5D\_EVENT_t \quad {}_6D\_Pledge_t \quad {}_7D\_EVENT_t * D\_Pledge_t \quad {}_t, \tag{1}$$

where $R_{p,t}$ denotes the equally weighted portfolio return at date t, $R_{f,t}$ is the risk-free rate, $R_{m,t}$ is the market return (proxied by the return of stock price index, excluding financial industry), SMB_t represents the differences in returns between portfolios of small and large firms, HML_t represents the differences in returns between portfolios of high and low book-to-market ratios, and UMD_t is the momentum factor. D_EVENT_t is an event dummy variable that equals 1 during the event window, and zero otherwise. D_Pledge_t is a dummy variable that equals 1 if the portfolio consists of pledging firm, and zero otherwise.

We estimate Equation (1) with an estimation period of 250 trading days before the event. The estimation period of the passage event overlaps with the first reading event period, so we exclude observations in the first reading event window (–1, 1) from the passage event estimation period.[13] The coefficient of D_EVENT_t represents daily abnormal returns that capture the average difference in returns before and after the event, and the coefficient of D_Pledge_t*D_EVENT_t is our main interest because it captures the difference in after-minus-before daily abnormal returns between the pledging portfolio (treatment group) and the non-pledging portfolio (control group) in the spirit of the difference-in-difference method (Atanasov et al., 2010). Because the non-share pledging firms are, theoretically, not expected to be affected by the new pledging-related rules, the differences in market reactions between these two groups serves as a placebo test, similar to the analysis in Cohen and Wang

[13] The results are consistent with or without this adjustment.

(2013).[14]

We examine changes in institutional investors' shareholdings around the passage event using the following regression:

$$Holdings_{i,v,t} = \beta_0 + \beta_1 D\_Pledge_{i,t} + \beta_2 post_t + \beta_3 D\_Pledge_{i,t} * post_t + \beta_4 BM_{i,t-1} + \beta_5 \log(MarketCap)_{i,t-1} + \beta_6 Leverage_{i,t-1} + \beta_7 Div\ Sales_{i,t-1} + \varepsilon \quad (2)$$

where $Holdings_{i,v,t}$ denotes the vth institutions' shareholding ratio of the ith firm at time t. $D\_Pledge_{i,t}$ is dummy variable that equals 1 if relevant insiders in firm i have pledged shares, and zero otherwise; $post_t$ is a dummy variable that equals 1 after the event, and zero otherwise. The interaction term $D\_Pledge_{i,t} * post_t$ measures the differences in shareholdings of the type of institution for the pledging firms (D_Pledge) relative to the non-pledging firms before and after the event. We test Equation (2) with two event windows, (−5, −1) versus (0, 4) and (−10, −1) versus (0, 9), to compare the difference in investors' shareholdings before and after the event.

3.2. Sample and data

Our sample firms are listed companies on the Taiwan Stock Exchange (TWSE), excluding foreign firms and financial companies. We require that the companies are listed on the TWSE for at least 250 days before the sample event. We collect the data of insiders' share pledges from two sources. The Company Act requires that listed companies disclose the creation or cancellation of pledges of stocks held by insiders on a monthly basis; therefore, we obtain firm-level insider pledge ratios in the month immediately prior to the event dates from the Taiwan Economic Journal (TEJ) database and then determine whether the firm is a pledging or

[14] Cohen and Wang (2013) examine non-staggered-board firms as the placebo in their study regarding how staggered boards affect shareholder value using a natural experiment involving two Delaware court rulings in 2010.

a non-pledging firm.[15]

In addition, the law requires listed firms to disclose detailed information on ownership structure (including insider-level pledged shares) in annual financial reports, which enables us to collect insider-level share pledges at the end of the year prior to the event. Using this information, we identify whether a director or a chairperson made excessive pledges on his or her shareholdings. Data on stock prices, investor shareholdings, and other firm characteristics also come from the TEJ database.

Panel A of Table 1 presents sample details. As the sample size increases over the years, the number of pledging firms remains stable; however, the number of non-pledging firms increases from 56.82% to 62.91%. This result is possibly due to the announcement of the pledge value rule that signals public opinion is aimed at reducing the incentives of insider pledging. Panel B provides the descriptive statistics of institutional shareholdings and firm characteristics. Foreign investors exhibit similar mean shareholdings, but the shareholdings have higher variation compared with mutual funds. Dealers hold a smaller percentage of shares in listed companies because their trades emanate from their proprietary trading activity and their trade sizes are smaller than those of the other institutions (Barber et al., 2014). Panel C shows that foreign investors hold more shares of pledging firms than those of non-pledging firms. However, pledging firms exhibit larger size scaled by market capitalization and higher leverage compared to non-pledging firms. The differences in firm characteristics may partly explain the higher shareholdings of foreign investors in pledging firms.

[TABLE 1 ABOUT HERE]

4. Empirical results

[15] TEJ is one of the most comprehensive financial data vendor for the Taiwanese financial markets and gathers information directly from the TWSE filings of public companies.

4.1. Insider stock pledging, firm valuation, and stock trading

Table 2 presents the cumulative abnormal returns (CARs) represented by the regression coefficients obtained from Equation (1) around the sample events for three different event windows. During the three events, the abnormal returns of pledging firms are greater than those of non-pledging firms in the majority of the tests. These results, therefore, support our first hypothesis that less compliant firms experience higher stock returns after the pledging-related regulatory events.

[TABLE 2 ABOUT HERE]

Table 3 presents the three-day CARs (–1, +1) based on the types of insider pledging. We again examine the differences in abnormal stock returns under the difference-in-difference framework in Equation (1). Panel A examines the effects of the pledge value rule event on firms with different amounts of pledge value, and Panels B and C examine the effects of the first reading and the passage events on firms with excessive pledges, respectively. To test the effect of the 2007 pledge value rule, we calculate the amount (in NTD) of director share pledges and examine the abnormal returns of firms with pledges values in the top tercile and on the top half. Panel A shows the results. Firms with larger amounts of share pledges experience relatively higher returns after the 2007 pledge value rule. This finding supports the argument that the pledge value rule of 2007 reduced the agency costs of firms with larger amounts of share pledges and thus these firms experience an increase in shareholder wealth.

[TABLE 3 ABOUT HERE]

Next, we examine whether firms with directors who commit excessive shares to pledging experience relatively higher returns after the first reading and the passage events. We

Table 5 presents the estimation results for Hypothesis 3. The main variable of interest is the interaction term *D_Pledge*post*, which shows that the coefficient of the interaction term is significantly positive for the shareholding regressions of foreign investors and dealers. These findings indicate that institutional investors increase their holdings of pledging firms after the passage of the 2011 Company Act amendment,

in the same industry, of the same size ranking (small, medium, and big), and of the same book-to-market ranking (low, medium, and high). We select the firm with the closest book-to-market ratio as the matched firm. Table 6 presents the results. Our previous results still hold: The compounded returns of pledging firms are all higher than those of non-pledging firms, and the BHARs are significant in six of nine tests.

[TABLE 6 ABOUT HERE]

4.2.2. Panel regression analysis of stock returns and pledging

We next conduct a panel regression analysis to examine the relation between stock returns and insider share pledging. We use the Fama–French–Carhart four-factor model to examine the three-day CARs around the three respective events for all sample firms and then run the following regression model:

$$CAR_{i,t} \quad _0 \quad _1 Pledging_{i,t} \quad _2 \log MV_{i,t} \quad _3 BM_{i,t} \quad _4 FCF_{i,t} \quad _5 LEV_{i,t} \quad _{i,t}, \qquad (3)$$

[TABLE 7 ABOUT HERE]

4.2.3 Firm valuation (Tobin's Q) before and after the implementations of new regulations

We also apply the methods in Atanasov et al. (2010) to conduct a valuation analysis for the implementation of new regulations using Tobin's Q. We measure Q as the market value of equity divided by book value of debt plus book value of equity for one and two years before and after the pledge value rule and the passage events, respectively. Q is then regressed on lagged control variables under the difference-in-difference framework. Table 8 shows that changes in firm values are similar to those using stock returns as the firm value proxy. The positive coefficients of *D_Pledge*post* shows that the value of pledging firms, compared to non-pledging firms, increases significantly after the share pledging-related events.

[TABLE 8 ABOUT HERE]

5. Conclusions

Prior research shows that insider share pledging is associated with higher agency costs. However, evidence is limited regarding how investors respond to insiders' share-pledging behavior. Using a quasi-natural experiment in Taiwan, this study empirically shows that firms

Some prior studies find countervailing effects of regulations. They show that governance provisions do not improve firm value, possibly because the observed governance practices are the result of value maximization (e.g., Iliev, 2010; Larcker et al., 2011). Thus, the effect of enforcing investor-protection rules on shareholder wealth is likely to depend on the costs and benefits of new regulations. By contrast, when insiders reduce their share pledges to meet the requirement of Taiwan's new regulations, extra auditing or filing costs are less likely. Therefore, our evidence is consistent with the alignment hypothesis, which suggests that firms that are less compliant with the spirit of the new regulation benefit more from the legislation than firms that are more compliant.

Taiwan's stock traders consider the evident influence of the new regulations on less compliant firms and the resulting improvement in investor protection. Thus, we show that shareholder wealth increases when investor protection is improved by regulating the insider share pledges. Our results have important implications for how the legal environment can alleviate the agency problem and help improve firm valuations.

Appendix. Article 197-1 of the Company Act

Upon creation or cancellation of a pledge on the company's shares held by a shareholder, a notice of such action shall be given to the company, and the company shall, in turn and within 15 days after such pledge creation/ cancellation date, have the change of pledge over such shares reported to the competent authority and declared in a public notice; unless otherwise provided for in any rules or regulations separately prescribed by the authority in charge of securities affairs.

In case a director of a company whose shares are issued to the public that has created pledge on the company’s shares for more than one half of the shares being held by him/her at the time he/she is elected, the portion of excessive voting power shall not be exercised, nor counted in the number of votes of shareholders present at the meeting.

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La Porta, R., Lopez-De-Silane

Table 1. Sample statistics

Panel A. The sample

Events	Total	Pledging firms	Total pledging (%)	Pledge ratio of pledging firms (%)	Non-pledging firms	Total non-pledging

Table 2. Abnormal returns around sample events

	Top quintile of pledging firms (1)	Pledging firms (2)	Non-pledging firms (3)	Difference (1) – (3)	Difference (2) – (3)
Panel A. Pledge value rule event					
$t = 0$	– 0.15	– 0.23	– 0.36	0.22	0.14
	(– 3.81)***	(– 6.81)***	(– 9.66)***	(5.62)***	(4.38)***
$t = (0, +1)$	0.06	– 0.04	– 0.20	0.26	0.16
	(0.44)	(– 0.31)	(– 1.74)*	(6.73)***	(6.53)***
$t = (–1, +1)$	0.13	0.05	– 0.06	0.20	0.11
	(1.19)	(0.43)	(– 0.49)	(3.28)***	(2.67)***
Panel B. First reading event					
$t = 0$	– 0.13	– 0.13	– 0.21	0.08	0.08
	(– 8.30)***	(– 9.03)***	(– 14.49)***	(4.39)***	(5.18)***
$t = (0, +1)$	– 0.11	– 0.12	– 0.25	0.14	0.13
	(– 3.64)***	(– 5.50)***	(– 7.05)***	(2.64)***	(3.06)***
$t = (–1, +1)$	– 0.07	– 0.08	– 0.15	0.08	0.07
	(– 1.64)	(– 2.44)**	(– 1.69)*	(1.34)	(1.07)
Panel C. Passage event					
$t = 0$	0.05	– 0.03	– 0.16	0.21	0.13
	(2.06)**	(– 1.25)	(– 8.24)***	(10.23)***	(7.44)***

t

Table 3. Three-day cumulative abnormal returns (CARs) around sample events based insider pledging type

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Table 4. Three-day cumulative abnormal returns (CARs) around the first reading and passage events based on the amount of director shareholdings

Events	Pledging (1)	Non-pledging (2)	Difference (1) – (3)
Small shareholdings of directors			
First reading	–0.04	–0.20	0.16
	(–0.70)	(–1.66)*	(1.08)
Passage	–0.01	–0.29	0.27
	(–0.20)	(–3.72)***	(10.78)***
Large shareholdings of directors			
First reading	–0.14	–0.10	–0.03
	(–1.72)*	(–1.42)	(–0.41)
Passage	0.10	–0.03	0.12

Table 5. Institutional shareholdings around the passage event

	Foreign Investor		Dealer		Mutual Fund	
Variables	(–6, –1) vs. (0, 4)	(–10, –1) vs. (0, 9)	(–6, –1) vs. (0, 4)	(–10, –1) vs. (0, 9)	(–6, –1) vs. (0, 4)	(–10, –1) vs. (0, 9)
Constant	–85.43	–85.46	–0.74	–0.75	–4.23	–4.25
	(–8.74) ***	(–8.75) ***	(–6.92) ***	(–7.20) ***	(–7.79) ***	(–7.80) ***
D_Pledge	0.04	0.08	0.00	0.001	0.004	0.01
	(7.36) ***	(8.87) ***	(–0.22)	(0.39)	(0.38)	(0.74)
post	–1.08	–1.09	–0.02	–0.03	–0.41	–0.40
	(–1.42)	(–1.44)	(–0.77)	(–0.89)	(–4.09) ***	(–3.96) ***
D_Pledge*post	0.04	0.06	0.01	0.01	0.01	0.01
	(3.94)***	(3.22)***	(4.12)***	(4.76)***	(1.49)†	(1.32)
BM	0.59	0.58	–0.05	–0.05	–0.88	–0.88
	(1.08)	(1.08)	(–4.51)***	(–4.67)***	(–8.54)***	(–8.45)***
log(MarketCap)	5.94	5.95	0.05	0.05	0.37	0.37
	(9.82)***	(9.82)***	(8.29)***	(8.52)***	(11.15)***	(11.16)***
Leverage	0.03	0.03	0.001	0.001	0.005	0.005
	(1.55)	(1.55)	(1.82)*	(1.84)*	(1.39)	(1.35)
Div/Sales	0.03	0.03	0.00	0.00	0.002	0.002
	(0.57)	(0.57)	(0.41)	(0.42)	(0.74)	(0.74)
Adj R^2	0.39	0.39	0.06	0.06	0.08	0.08
N	7,170	14,340	7,170	14,340	7,170	14,340

Notes: This table presents shareholding regressions of foreign investors, dealers, and mutual funds on director pledging around the passage of the 2011 Company Act amendment. *t*-values are in parentheses and standard errors for the ordinary least squares regressions are calculated based on heteroskedasticity-consistent covariance matrix. ***, *, and † denote significance at the 0.01, 0.10, and 0.15 levels, respectively.

Table 6. Buy-and-hold abnormal returns (BHARs) around sample events

	Pledging (1)	Non-pledging (2)	BHARs (1) – (2)	*t*-Statistics	*P*

Table 7. Panel regression analysis of abnormal returns around sample f3pts

Variables	(1)	(2)	(3)	(4)
Pledge ratio	0.003	0.003		
	(4.624) ***	(4.520) ***		
D_Pledge			0.102	0.097
			(3.030) ***	(3.069) ***
logMV	0.030	0.031	0.026	0.027
	(1.365)	(1.484)	(1.142)	(1.274)
BM	0.073	0.068	0.076	0.073
	(1.335)	(1.159)	(1.390)	(1.228)
FCF	0.000	0.000	0.000	0.000
	(0.120)	(0.076)	(0.211)	(0.165)
LEV	0.002	0.001	0.002	0.002
	(1.072)	(1.036)	(1.198)	(1.180)
Constant	–0.691	–0.631	–0.642	–0.590
	(–2.735) **	(–2.001) **	(–2.468) **	(–1.849) *
Adj. R^2	0.006	0.008	0.006	0.007
No. of obs	1,946	1,946	1,946	1,946
Event-fixed effects	No	Yes	No	Yes

Notes: This table presents the panel regression results with the three-day cumulative abnormal returns around the sample events as the dependent variable. D_Pledge is a dummy that equal 1 if insiders pledge shares, and zero otherwise. Pledge ratio the percentage of pledged shares over total shareholdings held by insiders. logMV is

Table 8. Firm valuation (Tobin's Q) before