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Does violation of regulations hurt firm value enhanced: Evidence from Taiwan banking industry?

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Abstract. This study investigates the impact of penalties, including sanctions, corrections, and fine payments, on firm value within the context of the banking industry on the Taiwan Stock Exchange (TWSE) from 2017 to 2021. Utilizing data from the Financial Supervisory Commission, we employ rigorous statistical methods, such as multiple regression and Petersen regression models, to discern whether these punitive measures affect firm performance. Intriguingly, our findings indicate that firms subject to financial sanctions and penalties in Taiwan experience an improvement in their firm value, challenging the conventional belief that such penalties erode value. We propose that this unexpected outcome may be attributed to the potential gains derived from expanding business activities, even in violation of banking regulations, outweighing the associated regulatory costs. By shedding light on this under-researched aspect of the literature, our study contributes to a broader understanding of how regulatory penalties impact firm value in the banking industry, thereby providing regulatory authorities with practical insights.

Keywords. Regulations violations; Firm value; Sanctions; Banking industry

1. Introduction

Mega International Commercial Bank (MICB) attributed the penalty to the breaches of US money laundering and banking secrecy laws, for which it had paid a fine of USD 180 million in 2016 to the New York State Department of Financial Services. Two years later. The bank sanctioned USD 29 million in fines to US federal financial regulators again for compliance failures at three US branches in 2018. The 2017 revenue of MICB is USD 2.69 billion while 2016 is USD 2.38 billion. The above news arouses our interest for further investigation. In addition, Brown and Caylor (2004) show that measuring governance by using charters and bylaws is highly associated with bad performance; however, Tipton et al. (2009) find that the sanction might not affect the revenue generation next to the regulatory violations. Furthermore, we also find that the legal regulation might not stop some banks from violating the law resulting in sanctions occurring for these banks. Thus, we are interested in exploring whether banks with

regulation violations would affect their firm performance due to the pros and cons that coexisted in the literature.

In other words, our motivation is to explore whether regulation violations resulting in the sanctions occurring would affect firm value. In addition, to our best understanding, we argue that the issue concerning the impact of the regulation violation on firm value seems rarely explored in the relevant literature after surveying the relevant literature, which might contribute to the existing literature.

The framework of this study may be attributed as follows. Tipton et al. (2009) argue that the penalty would damage corporate governance and even deteriorate the firm performance, as revealed that negative abnormal returns appeared after the occurrence of exposed deceptive marketing. However, the penalty might gain better subsequent firm performance. For example, Dharmapala and Khanna (2012) show a substantial positive effect on firm performance after a sequence of reforms resulting from the violation of regulation.

In addition, Armour et al. (2017) argue that the penalty could be considered as part of promotion costs to accelerate the firm performance. As a result, the announcement of a fine for wrongdoing that harms third parties, on the contrary, might not have a negative effect on stock prices. Besides, the lower litigation cost might seduce aggressive gaining revenue without considering litigations. Thus, this situation makes the regulatory violation cost lower than the business gained by aggressive or illegal marketing means, especially for most Asian countries (Gulter & Glaeser, 2021).

As the relevant literature mentioned above, we argue that the penalties for regulatory violations such as sanctions, corrections, and fine payments might be in relation to firm value. As a result, the purpose of this study is to explore whether the firms with a penalty of sanction, correction, or fine payment would weaken or enhance the firm value. Since firm value would be affected by the function of the board structure and the performance shown in the financial statements. We therefore explore the above issue by controlling the relevant variables in terms of board structure and financial performance.

The importance of this study is due to that the study may contribute to the existing literature as follows. First, we investigate whether the firm value of firms that face sanctions, corrections, or fines for regulation violations would be affected. To our best understanding, this issue is rarely considered in the literature after surveying the relevant studies, which might fill the gap in the existing literature. Second, we argue that our revealed results could provide evidence in terms of whether the firms would be better off or worse off after being sanctioned by authorities, which might be better for the authorities to adjust their policies about the violation of banking regulation.

In this study, we reveal several essential findings as follows. First, the results show that firm values are not worse off but even better off for those firms being imposed sanctions, corrections, and fines by authorities. We infer that the results may have been caused by the gain of violating banking regulations exceeding the cost of violating banking regulations. Second, we demonstrate that the fine is not an issue for preventing the occurrence of banking regulation violations, which could occur if the fine amount for the regulation violation is too low or if litigation costs for directors are also too low.

The paper is arranged as follows. Section 2 presents a survey of the pertinent literature and proposed hypotheses. Section 3 introduces the employed data and methodology. The empirical findings and analyses are presented in Section 4. Our remarks conclude in Section 5.

2. Literature review

To familiarize ourselves with pertinent studies for this study, we combed through relevant literature on firm value, regulation violation, and the relationship between firm value and regulation violation. In addition, due to the fact that firm value is influenced by board structure and financial performance, as demonstrated in the relevant literature, we review the relevant studies regarding board structure, financial statements, and firm value in this section.

2.1. Firm value

The assessment of a company's performance by investors heavily relies on firm value, which stands as a critical benchmark. Firm value not only unveils the operational and financial aspects but also underscores the significance of intangible assets. It's worth noting that intangible assets exert a favorable influence on firm value, as highlighted in studies by Gamayuni (2015), Lim et al. (2020), and Ni et al. (2021).

From the perspective of management, board activity has a positive impact on firm value (Bardos et al., 2020; Baker et al., 2020). Pérez-González and Yun (2013) also document that proper risk management would increase firm value as well as reduce cash flow volatility (Kim et al., 2021). In addition, Jiang et al. (2017) find that efficiency is positively related to firm value. Gupta et al. (2018) point out that entrepreneurial orientation enhancement to firm value is economically meaningful. Li et al. (2018) also indicate that improving transparency and accountability would boost firm value.

In terms of agent theory, firms with greater agency and monitoring problems show a negative association between firm value and financial derivative usage (Al-Slehyat et al., 2020; Freund et al., 2023). Lau (2016) also finds that firms employing derivatives for hedging activities are actually effective in mitigating financial risks, thereby enhancing their firm performance.

Concerning stock price performance, Billett et al. (1995) demonstrate that a firm's common stock price tends to fall for the firm issuing new securities, which might decrease firm value. In addition, Nguyen et al. (2016) document a positive relationship between stock liquidity and firm value. Jiao (2010) reveals that stakeholder welfare is positively related to firm value. Konijn et al. (2011) find that there is a negative correlation between Tobin's q and blockholder dispersion. Besides, intangible assets have significantly positive impacts on firm value (Widnyana et al., 2021; Uddin et al., 2022).

2.2 Regulation violations

Marciukaityte et al. (2006) imply that improvements in internal control systems after allegations of fraud aid in repairing a company's reputation and restoring investor confidence. According to Firth et al. (2016), regulatory sanctions discouraged these directors from serving on the boards of high-risk companies. Thus, Jamal Zeidan (2012) argues that regulators and policymakers should tighten up the sanctions and speed up the process. Lee and Lu (2015) also indicate that greater capital regulatory requirements reduce bank fragility. Besides, Hagendorff et al. (2010) explore that strict regulatory environments may promote firm-level governance. However, Chhaochharia and Grinstein (2007) pinpoint that firms that are less compliant with the provisions of the rules would earn positive abnormal returns compared to more compliant firms.

Wu et al. (2016) explore that firms with a large proportion of shares outstanding held by institutional investors would have a higher enforcement action against corporate fraud. Aggarwal et al. (2011) also indicate that firm-level governance is positively associated with

international institutional investments. Furthermore, Khurana and Moser (2012) show that the firm with high long-term institutional shareholders tends to have less tax avoidance, which not only prevents managerial opportunism but also increases the transparency of financial statements. Chung and Zhang (2011) also reveal that the fraction of a company's shares that are held by institutional investors increases with the quality of its governance structure.

2.3 Corporate governance, financial statements, and firm value

Due to firm value affected by corporate governance and financial performance revealed in the relevant literature, we also survey the relevant studies in terms of the impacts of corporate governance and financial statements on firm value in this section.

Ammann et al. (2011) find that corporate governance has a profound influence on firm value revealing that there is a strongly positive relation between firm-level corporate governance and firm value. Black et al. (2015) find that better corporate governance increases firm profitability due to less tunneling. In addition, firms with better corporate governance could constrain unnecessary investments, which might be beneficial for the firm to maximize shareholders' wealth, thereby enhancing firm value (Jiang & Kim, 2020; Khuong & Anh, 2023). In addition, Claessens et al. (2002) show that controlling shareholders holding a high percentage of shares outstanding is consistent with corporate interests. Bauguess et al. (2009) indicate that firm performance would be enhanced for the firms whose directors with a higher shareholding ratio are in charge of business affairs. This literature is consistent with that better corporate governance is associated with greater firm value (Hsu & Yang, 2022; Seth & Mahenthiran, 2022). Ni and Huang (2015) also reveal that corporate governance is worse in firms that issued convertible bonds, as revealed by the decline in the directors' shareholding ratio.

Liu et al. (2015) find that independent directors have an overall positive effect on firm performance. Huang et al. (2020) show that a firm with better corporate governance, such as a higher directors' holding ratio, higher institutional holding ratio, and small board size has better stock price performance and firm value. Furthermore, Upadhyay et al. (2014) suggest that board size is negatively related to Tobin's q. Fauver et al. (2017) also reveal that firm value enhancement is associated with the improvement of board independence, audit committee, and CEO duality. In addition, Tui et al. (2017) find that firm size and firm profitability have a positive and significant effect on firm value. Moreover, Chi et al. (2016) reveal that industry effects have important influences on firm performance.

2.4. Firm values and regulation violations

Karpoff et al. (2005) discovered that the firms violating laws would suffer significant losses in their market value. Ball et al. (2003) argue that shareholder litigation is an important mechanism for enforcing high-quality financial reporting. Armour et al. (2017) find that the share prices impacted by reputational sanctions are significantly greater than those impacted by monetary penalties, indicating that regulation violations could result in huge losses for businesses.

However, Koster and Pelster (2016) demonstrate that the financial penalties imposed may be less than the accrued economic gains from the banks' misbehavior, as court-imposed sanctions frequently represent only a tiny portion of the damage caused by fraud. Sharma and Sharma (2018) argue that the fraud prevention cost is much lower than the failure cost for banks. In addition, Karpoff, Lott, and Wehrly (1993) conclude that penalties for corporate fraud require firms to expect penalties equal to the total social costs of the offense. Koster and Pelster (2017) also demonstrate that banks are permitted to deduct certain monetary penalties from their

taxable income. As a consequence, these studies indicate that the cost of regulation violation may not be greater than the benefit of violation.

As disclosed in the aforementioned literature, the pros and cons coexist after reviewing the relevant literature. In addition, the relationship between regulation violations and firm value appears to be infrequently and briefly examined in relevant studies. In this study, we are interested in determining whether firms that violate bank regulations have a negative impact on their firm value, and we propose the hypotheses listed below.

Hypothesis 1: Firm value would be negatively affected by the firm with the record of financial sanctions.

Hypothesis 2: Firm value would be negatively affected by the firm with the record of corrections.

Hypothesis 3: Firm value would be negatively affected by the firms with fine payments.

3. Data and Models

3.1. Data

In this study, we explore whether firm value would be affected by the financial firms with the record of sanctions, corrections, and fine payments after controlling the variables in terms of corporate governance, financial statements, and others. We then employ the firms falling into the financial industry listed on the Taiwan Stock Exchange (TWSE) as our samples and collect these firms with the records of sanctions, corrections, and fine payments over the period 2017-2021 from the Financial Supervisory Commission. Besides, we also collect the variables in terms of corporate governance, financial statements, and others from the Taiwan Economic Journal (TEJ).

Tobin's *q*, the proxy of firm value, is employed as the dependent variable in this study. The independent variables are classified as regulation violation variables, board structure variables, and financial and other controlling variables. The regulation violation variables include sanctions, corrections, and fine payments. The board structure category includes directors' shareholding ratio, blockholders' shareholding ratio, managers' shareholding ratio, directors' pledge ratio, blockholders' pledge ratio, board size, and independent directors. The financial and other controlling variables include net profit ratio, equity asset ratio, industry dummy (DM), and firm size. The definitions of these variables employed in this study are introduced in Table 1.

Table 1 Definitions of the variables employed

Dependent variable	
Firm value	$(\text{book value of debt} + \text{market value of equity}) / \text{book value of assets}$
Regulation violation variables	
Financial sanction DM	Set to 1 if a firm is regulated as a financial sanction due to regulation violation; otherwise, set to 0.
Correction DM	Set to 1 if a firm is regulated as correct due to regulation violation; otherwise, set to 0.
Fine payment	The fine amount for a firm violating regulations

Board structure variables	
Directors' shareholding ratio	Total directors' shareholdings over total shares outstanding
Blockholders' shareholding	Total blockholders' shareholdings over total shares outstanding
Managers' shareholding ratio	Total Managers' shareholdings over total shares outstanding
Directors' pledge ratio	Directors' pledged shares over total directors'
Blockholders' pledge ratio	Blockholders' pledged shares over total directors'
Board size	Total directors on the board
Independent directors	Total independent directors on the board
Financial and other	
Net profit ratio	Net profit over net sales
Equity asset ratio	Total equity over total assets
Industry DM	Set to 1 if a firm falls into the banking industry;
Firm size	ln (MV)

3.2. Models

The model shown below is to examine whether firm value would be affected by diverse regulation violations after controlling corporate governance, financial statements, and other variables.

Tobin's $Q_{i,t} = \beta_0 + \beta_j X_{j i,t} + \beta_4$ Director's shareholding ratio + β_5 Blockholders' shareholding ratio + β_6 Manager's shareholding ratio + β_7 Director's pledge ratio + β_8 Blockholders' pledge ratio + β_9 Board size + β_{10} Independent directors + β_{11} Net profit ratio + β_{12} Equity asset ratio + β_{13} Industry DM + β_{14} Firm size + $\varepsilon_{i,t}$ for $j=1$ to 3 ... (1) – (3),

where $X_{j i,t}$ is financial sanction dummy as $j=1$ for Model 1, $X_{j i,t}$ is correction dummy as $j=2$ for Model 2, and $X_{j i,t}$ is fine amount as $j=3$ for Model 3.

We then explore whether firm value would be affected by the firms with the record of sanctions, corrections, or fine payment after controlling the variables in terms of corporate governance, financial performance, and others.

Before processing our models, we employ the variance inflation factor (VIF) test to check whether multicollinearity problems exist among these independent variables. The VIF values shown for these independent variables are all less than 2.5, indicating that multicollinearity problems might not be an issue for this study. It seems appropriate to adopt panel data models due to firm-year observations employed in this study; however, we employ the model proposed by (Petersen, 2009) for grasping the relative accuracy by taking data structure into account due to the defects of the panel data models mentioned by Petersen.

4. Empirical findings and analyses

4.1. Descriptive statistics

The descriptive statistics includes the number of observations, means, medians, standard deviations, minima, and maxima for the variables employed in this study. Table 2 shows the average of Tobin's q is 1.00607, indicating that the market value of assets is slightly higher than the book value of assets. However, we reveal that the range of Tobin's q is rather broad, as revealed that the minimum value is 0.7 and the maximum value is 2.0.

Regarding regulation violation variables, the mean of firms with a record of sanctions is 18.6%, but the mean of firms with a record of corrections is only 5%. Besides, the fine amount could be as high as 13 million while the mean is 0.98 million.

As for board structure variables, Table 2 shows the minimum and maximum values of the directors' shareholding ratio are 1% and 68% respectively, indicating that the directors' shareholding ratio of these firms is rather board. Aside from the minimum value of directors' holding ratio being 1%, the minimum value of managers' shareholding ratio is 0%, the maximum directors' pledge ratio is 96.6%, and the maximum blockholders' pledge ratio is as high as 100%. These statistics indicate that some firms might have corporate governance issues.

Concerning financial statement variables, Table 2 reveals that the minimum and maximum values of the net profit ratio are -56.98% and 70.29%, respectively, indicating that the performance in profitability is rather different among these firms, indicating that some firms have superior performance, but other firms might suffer losses.

Table 2 Descriptive statistics

This table reports the means, medians, standard deviations, minima, and maxima of the dependent and independent variables. The dependent variable employed includes Tobin's Q defined as the sum of market value of equities and book value of liabilities over book value of assets. The independent variables are classified into several categories as follows: Regulation violation category includes financial sanctions DM by setting to 1 if a firm is regulated as financial sanctions otherwise, set to 0, correction DM by setting to 1 if a firm is regulated as a correction; otherwise, set to 0, and fine payment is the fine amount for a firm violating regulation. The board structure category includes directors' shareholding ratio defined as total directors' shareholdings over total shares outstanding, blockholders' shareholding ratio defined as total blockholders' shareholdings over total shares outstanding, managers' shareholding ratio defined as total managers' shareholdings over total shares outstanding, directors' pledge ratio defined as directors' pledged shares over total directors' shareholdings, blockholders' pledge ratio defined as blockholders' pledged shares over total directors' shareholdings, board size defined as total directors on the board, and independent directors defined as total independent directors on the board. Financial and other categories include net profit ratio defined as net profit over net sales, banking industry DM by setting to 1 if a firm falls into the banking industry; otherwise, set to 0, and firm size is measured as the logarithm of the market value.

	Obs.	Mean	Median	Std.	Min	Max
Tobin's Q	172	1.01	.99	.14	.71	2.01
Financial sanctions DM	172	.18	0	.39	0	1
Corrections DM	172	.05	0	.22	0	1
Fine amount (thousand)	172	98	0	2530	0	13000
Directors' shareholding ratio (%)	172	21.57	20.41	17.92	.99	68.65
Blockholders' shareholding ratio (%)	172	4.36	0	10.40	0	38.67
Managers' shareholding ratio (%)	172	.28	.14	.35	0	2.11

Directors' pledging ratio (%)	172	12.78	0	24.24	0	96.61
Blockholders' pledging ratio (%)	172	4.56	0	17.62	0	100
Board size	172	11.07	11	3.33	4	20
Independent directors	172	2.92	3	.63	0	4
Net profit ratio (%)	172	24.24	26.19	17.47	-56.98	70.29
Equity/ Asset ratio	172	19.59	10.97	19.18	3.05	83.77
Industry DM	172	.75	1	.42	0	1
Firm size	172	17.18	17.04	1.61	13.31	20.22

4.2. Empirical Results

In this study, we examine whether firm value would be affected by the firms with records of financial sanctions, corrections, or the payment of fine amounts after controlling the variables in terms of board structure, financial statements, and others. The results are shown in Table 5.

Table 5 The Results of Multiple Regression Models and Petersen Models.

Tobin's $Q_{i,t} = \beta_0 + \beta_j X_{j i,t} + \beta_4$ Director's shareholding ratio + β_5 Blockholders' shareholding ratio + β_6 Manager's shareholding ratio + β_7 Director's pledge ratio + β_8 Blockholders' pledge ratio + β_9 Board size + β_{10} Independent directors + β_{11} Net profit ratio + β_{12} Equity asset ratio + β_{13} Industry DM + β_{14} Firm size + $\varepsilon_{i,t}$ for $j=1$ to 3

..... (1) – (3),

where $X_{j i,t}$ is financial sanctions dummy as $j=1$ for Model 1, $X_{j i,t}$ is correct dummy as $j=2$ for Model 2, and $X_{j i,t}$ is fine amount as $j=3$ for Model 3.

Aside from exploring whether regulation violation variables include financial sanctions DM, correction DM, and fine amount would affect firm value, respectively. We also employ board structure variables, financial statements, and others as controlling variables. The board structure variables include the directors' holding ratio defined as total directors' shareholding over total shares outstanding, the blockholders' shareholding ratio defined as total blockholders' shareholding over total shares outstanding, managers' holding ratio defined as total managers' shareholdings over total shares outstanding, directors' pledge ratio defined as director's shares pledged over total directors' shareholding, the blockholders' pledge ratio defined as the blockholders' shares pledged over total directors' shareholding, board size defined as the total directors on the board, and independent directors defined as total independent directors on the board. Financial statements and other controlling variables include the net profit ratio defined as net profit over total sales and the equity asset ratio defined as total equity over total assets, industry DM is set to 1 if a firm falls into the banking industry; otherwise, set to 0, and firm size measured as taking the logarithm of the market value. In addition, the estimated coefficients whose standard errors are reported in parentheses below these estimated coefficients. Besides, T-statistics are based on the standard errors either adjusted by heteroskedasticity (white (1980)) in Columns (1a)-(3a) or adjusted

by the two-way clusters that existed in firm and year (Petersen (2009)) in Columns (1b)-(3b). Statistical significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

Dependent variables	Tobin's Q					
	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
Financial sanctions	.029651* (.01524)	.02951* (.01687)				
Corrections			.01100 (.00497)	.01100** (.00497)		
Fine amount					3.27e-09 (2.20e-)	3.27e-09 (2.20e-)
Net profit ratio	.00120** (.00053)	.00120* (.00067)	.00119* (.00052)	.00119* (.00068)	.00121** (.00051)	.00121** (.00051)
Equity asset ratio	.00544*** (.00207)	.00544 (.00336)	.00539* (.00207)	.00539 (.00335)	.00535** (.00206)	.00535** (.00206)
Directors' shareholding ratio	.00170*** (.00058)	.00170* (.00095)	.00166* (.00057)	.00166* (.00095)	.00165** (.00057)	.00165** (.00057)
Blockholders' shareholding ratio	-.00249 (.00221)	-.00249 (.00255)	-.00246 (.00219)	-.00246 (.00256)	-.00246 (.00219)	-.00246 (.00219)
Managers' shareholding ratio	.02718 (.01866)	.02718 (.02116)	.02299 (.01844)	.02299 (.02163)	.02483 (.01844)	.02483 (.01844)
Directors' pledging ratio	-.00049 (.00040)	-.00049 (.00042)	-.00042 (.00040)	-.00042 (.00042)	-.00044 (.00039)	-.00044 (.00039)
Blockholders' pledging ratio	.00159 (.00102)	.00159 (.00133)	.00160 (.00103)	.00160 (.00133)	.00161 (.00102)	.00161 (.00102)
Board size	-.00237 (.00247)	-.00237 (.00299)	-.00247 (.00246)	-.00247 (.00302)	-.00246 (.00246)	-.00246 (.00246)
Independent directors	.03156* (.01813)	.03156 (.02556)	.03171* (.01809)	.03171 (.02601)	.03117* (.01807)	.03117* (.01807)
Industry DM	.16098*** (.04326)	.16098** (.06963)	.16230* (.04379)	.16230** (.07072)	.16199** (.04361)	.16199** (.04361)
Firm size	.00120 (.00635)	.00120 (.00798)	.00279 (.00657)	.00279 (.00817)	.00075 (.00657)	.00075 (.00657)
Constant	.62080*** (.16277)	.62080** (.24249)	.60044* (.16934)	.60044** (.25391)	.63462** (.16496)	.63462** (.16496)
Adj R ²	0.3783	0.3783	0.3739	0.3739	0.3761	0.3761
Coefficient estimates	OLS	Petersen	OLS	Petersen	OLS	Petersen
Standard errors	White	CL – F&T	White	CL - F&T	White	CL -

Table 5 shows financial sanctions have significantly positive impacts on firm value, which might not support Hypothesis 1. In addition, similar results are shown for the firm with the record of corrections. That is corrections significantly and positively affect firm value,

which might not support Hypothesis 2 as well. However, fine payment is insignificantly but positively affects firm value as well.

These results indicate that the firms with a record of either financial sanctions or correction would enhance instead of weaken firm value. We infer that the results might be due to that the gain from expanding their business by banking regulations exceeds the cost of violating banking regulations.

As for the effect of corporate governance variables on firm value, we reveal that directors' shareholding ratios have significantly positive impacts on firm value, implying that the firm with a higher directors' shareholding ratio would have better firm performance even if firm value consistent with our cognitions.

In addition, independent directors are significantly and positively related to firm value, indicating that the firms recruiting independent directors on the board would enhance firm value. Besides, we also reveal that banking firms would have higher firm value as compared with insurance firms, as reveal that industry DM has a significantly positive impact on firm value.

As for financial statement variables, the net profit ratio has a significant and positive effect on Tobin's q, indicating that the firms with higher net profit ratios would enhance firm value. The equity asset ratios are significantly positive to Tobin's q, implying that the higher debt ratio (i.e., the lower equity asset ratio) would weaken the firm value. These revealed results are also consistent with our cognitions.

5. Conclusions

By observing that legal regulation might not stop some firms from falling into the financial industry to violate the law resulting in financial sanction, corrections, or fine payments for these firms, these phenomena indeed arouse our interest to explore the above issue. Thus, the purpose of this study is to explore whether regulatory violations resulting in the sanctions, corrections, or fine payments that occurred would indeed affect firm value after controlling the variables in terms of board structure, financial statements, and others, and reveal the following important findings.

First, the result shows that firm value would be enhanced instead of weakened for the firms being imposed financial sanctions, corrections, or fine payments by authorities. Second, we deduce that the results may result from the gain from expanding their business due to banking regulations exceeding the cost of violating banking regulations. Third, we disclose that these penalties including financial sanctions, corrections, or fine payments seem not an issue to prevent the occurrence of banking regulation violations, which might be caused by that paying fine amount for the banking regulation violation being too low or directors' litigation costs are too low as well.

In addition, we argue that this study may contribute to the existing literature as follows. First, we explore whether the penalties for regulation violations including sanctions, corrections, or fines would influence the firm value. To our best understanding, this issue is rarely considered in the literature after surveying the relevant studies, which might fill the gap in the existing literature. Second, we argue that our revealed results could provide evidence in terms of whether the firms would be better off or worse off after being sanctioned by authorities, which might be better for the authorities to adjust their policies related to banking regulation violations.

Moreover, this study has two valuable implications. First, we reveal that the firms with a record of financial sanctions, corrections, or fine payments would have a positive impact on

firm value. This revealed result might indicate that the firms violating the laws would not be regarded as a negative signal, implying that the fine amount for the banking regulation violation is too low or directors' litigation costs are too low as well. Second, we argue that the authorities might raise the fine payments for the firm violating regulation resulting in financial sanctions or corrections; otherwise, if the gain from expanding their business due to banking regulations violation exceeds the cost of violating banking regulations, more and more firms might not prohibit the firm violating financial regulations or laws. Third, the financial sector might be the most heavily regulated compared with other nonfinancial sectors (Flannery, 1998). Thus, authorities might reconsider the cost-benefit analysis for the penalties of regulation violations; otherwise, regulatory violations would not be stopped since cost-benefit concerns instead of moral concerns might be sophisticatedly measured by the bankers.

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