



THE EFFECT OF INFORMATION TRANSPARENCY ON STOCK PRICES OF FINANCIAL INSTITUTIONS: EVIDENCE FROM TAIWAN

Hueh-Chen Lin

School of Business, Putian University
imhjlin@foxmail.com

Jiang-Chuan Huang*

School of Business, Putian University

*Corresponding author: imjchuang@foxmail.com

Abstract

In this paper, we examine the stock price reactions of financial institutions when their information transparency is announced by the Securities and Futures Institute in Taiwan over the period 2011-2014. Our results indicate that the effect of information transparency has a significant positive stock return on the financial institutions, and this evidence is consistent and robust across all financial industries including financial holding, banking, insurance and security industries. Furthermore, we find that financial institutions with high transparency have a positive stock price reaction, while there is a negative response for the financial institutions with low transparency. The evidence implies that the stock market differentiates between financial institutions with high transparency and those with low transparency. It also suggests that the investors anticipate that financial institutions with lower information transparency will exhibit the effect of more serious information asymmetry on the value of financial institutions.

Key words: Information transparency, financial institution, stock return, information asymmetry, even study.

Introduction

Corporate information transparency has drawn much attention in recent financial studies, especially after the wave of financial scandals of the early 2000s.

The widespread acceptance on the pervasive salience of corporate transparency made Taiwan's regulatory authority establish the Information Disclosure and Transparency Ranking System (IDTRS) in 2003. The purpose of this information disclosure system is to plan and design

evaluation indicators that meet the needs of the IDTRS. The investment publication is expected to be capable of easily determining the degree of corporate information asymmetry by publishing evaluation grades for listed companies annually. The purpose of this paper is to explore whether disclosing information transparency helpfully improves the extent of information asymmetry between investors and the insiders.

While a growing number of studies have investigated the economic consequences of corporate information in Taiwan (e.g., Yeh et al., 2014; Lee and Lee, 2015; Liu et al., 2015; Wang et al., 2016; Yu et al., 2017; Wang et al., 2019), these studies have excluded financial institutions such as firms in the banking, insurance and security industries because their industry characteristics and information disclosure regulations are special and different from other industries. Therefore, little is known about how information transparency provides investors with a decision aid for better adjusting their wealth, in particular, holding shares in financial institutions.

Financial institutions are well recognized as key economic agents. Further, national economic dependence on the financial industry varies drastically. In Taiwan, financial institutions are the dominant providers of capital and are of crucial importance for the Taiwanese stock market (Lee et al., 2014; Huang et al., 2015). Accordingly, Taiwanese investors often have a considerable weighted shares in various financial institutions such as financial holding companies, bank corporations, insurance

companies and security companies. Hence, in this paper, we particularly investigate whether the announcement of information transparency has an economic impact on financial institutions in a financial institution-dominated financial system such as Taiwan's.

Prior research has documented that information transparency significantly improves earnings quality (Yeh et al., 2014; Wang et al., 2016) and investment efficiency (Liang et al., 2012), mitigates owner-manager agency conflicts (Jacoby et al., 2019), affects intra-industry information transfer (Yu et al., 2017) and reduces earnings manipulation by firms (Liu et al., 2015), as well as information asymmetry and moral hazard problems (Lee and Lee, 2015). Furthermore, previous studies suggest that higher information transparency can lower information risk and information asymmetry between firms and investors (Hefiln et al., 2005; Yeh et al., 2014; Lee and Lee, 2015; Yu et al., 2017; Jacoby et al., 2019). Hefiln et al. (2005) found that higher information transparency has relatively higher stock liquidity and prices resulting in smaller stock volatility. Yeh et al. (2014) demonstrated that more-transparent firms indeed convey a higher quality of earning attributes. Lee and Lee (2015) documented that firms with high rankings show a limited reduction in overpricing of accruals and cash flow and lower abnormal returns, relative to firms with low rankings in disclosure transparency. Yu et al. (2017) showed that earnings of companies with higher transparency could better help investors to evaluate non-announcing companies as well. Jacoby et al. (2019)

revealed that the information transparency on stock market reactions to managerial effectiveness could provide management teams and policymakers to better understand how to encourage managers to have better environmental performance. However, while these prior studies recognize the potential effects of the information transparency and disclosure quality, there is little direct evidence on whether the information transparency and the level of transparency influences the stock prices of financial institutions.

In order to extend the existing literature, it is thus worthwhile to examine whether the announcement of information transparency has an effect on stock returns for financial institutions only. Three important findings emerge. First, our results indicate that the announcement of information transparency is received as significant positive news by the shareholders of the financial institutions. The evidence is consistent with the stock price responses of firms in the non-financial industry. Second, we find that information transparency has a significantly positive effect on stock returns of financial institutions, which is consistent and robust across all financial industries. Third, we find that an announcing financial institution with high information transparency has a positive effect on its stock returns; however, the market adversely adjusts the stock prices of financial institutions given the announcement of low information transparency. The results imply that the stock market differentiates between financial institutions with high information transparency

and those with low information transparency.

The remainder of the paper is organized as follows. Section 2 discusses the sample selection and the methodology. Section 3 presents our empirical results. Section 4 is our conclusion.

Data and Methodology

Sample Selection And Data

Since 2005, the Securities and Futures Institute (SFI) has implemented a public IDTRS for listed companies, thereby determining the information transparency level of companies in the Taiwan stock market. Thus, our sample is selected from financial institutions, including financial holding, banking, insurance and security industries that are evaluated for the level of transparency by the IDTRS as announced by the SFI over the period 2011-2014. In addition, the daily stock returns for financial institutions are obtained from the Taiwan Economic Journal (TEJ) database.

Methodology

In this study, we employ a standard event study methodology to measure the stock price reaction of financial institutions around the announcements of disclosed information transparency by the IDTRS. We thus chose three different event windows: 3-, 5- and 11 -days to separately calculate the announcement abnormal returns for financial institutions by using the market model methodology as detailed in Brown and Warner (1985) and Mikkelsen and Partch

(1986). We specify a market model as follows:

$$AR_{jt} = R_{jt} - (\hat{\alpha}_j + \hat{\beta}_j R_{mt})$$

$$CAR_i(t_1, t_2) = \sum_{j=1}^n AR_{jt} \quad (1)$$

$$ACAR = \frac{1}{N} \sum_{t=t_1}^{t_2} CAR_i(t_1, t_2)$$

Where,

AR_{jt} : the abnormal return is computed as the difference between the firm's observed return (R_{jt}) and the estimated return of the market

$$(\hat{\alpha}_j + \hat{\beta}_j R_{mt}) \cdot$$

R_{jt} : the stock returns of individual firms during the event windows.

R_{mt} : the market returns using the Taiwan Stock Exchange (TWSE) Equal-weighted index as the benchmark.

CAR : the sum of abnormal returns for the days in the specified event windows.

$ACAR$: the average cumulative abnormal returns.

In Equation (1), the parameters, α and β , are estimated by regressing the firm's stock returns for 150-30 prior to the event date on the TWSE Equal-weighted Index. The statistical tests of significance are based on the standardized abnormal returns and CARs.

Empirical Results

Table 1 provides the distribution of samples across years and industries. There is a total of 171 financial institutions, of which the distribution from 2011 to 2014 is 40, 43, 45 and 43 firms, respectively. In addition, the largest subsample is the financial holding industry with 59 firms and the insurance industry with 26 firms only, and the distribution percentage across the four industries is 34.5%, 21.05%, 15.20% and 29.23%, respectively.

Table 1. Distribution of samples across years and industries (N =171)

Year	Financial holding industry	Percent (%)	Banking industry	Percent (%)	Insurance Industry	Percent (%)	Security industry	Percent (%)	Subtotal
2011	15	25.42%	8	22.22%	5	19.24%	12	22.45%	40
2012	15	25.42%	8	22.22%	7	26.92%	13	26.53%	43
2013	15	25.42%	10	27.78%	7	26.92%	13	26.53%	45
2014	14	23.74%	10	27.78%	7	26.92%	12	24.49%	43
Total	59	34.50%	36	21.05%	26	15.20%	50	29.23%	171

In order to entirely grasp the impact of announcing information transparency on the stock prices of financial institutions, we adopt three different event windows: 11 days, 5 days and the tradi-

tional 3 days, to separately examine the market reaction to the announcement of information transparency on the stock returns of financial institutions. The results in Table 2 show the average stock

return responses of financial institutions to the announcement of information transparency. For the 3-, 5- and 11-day event windows, the average cumulative abnormal returns (ACAR) amount to 3.06%, 2.74% and 2.63% which are significantly abnormal returns at the one level for financial institutions on the announcement of information transparency, respectively. A nonparametric Wilcoxon

signed-rank test shows similar results. Hence, the announcement of information transparency is received as significantly positive news by the shareholders in financial institutions. The evidence is consistent with the stock price responses of firms in other industries, i.e., non-financial firms (e.g., Lee and Lee, 2015; Yu et al., 2017).

Table 2. ACAR for financial institutions on the announcing of information transparency (N=171)

Event window	ACAR (<i>t</i> -statistic)	Median CAR (Wilcoxon <i>z</i> -statistic)
3-day window [-1, 1]	3.06% (9.58 ^{***})	2.73% (8.75 ^{***})
5-day window [-2, 2]	2.74% (6.64 ^{***})	2.40% (5.68 ^{***})
11-day window [-5, 5]	2.63% (4.46 ^{***})	3.21% (4.04 ^{***})

***Significant at the 1% level

We further divide samples into four industries (i.e., financial holding, banking, insurance and security industries) and repeat the event study to measure the effect of announcing information transparency on the stock prices of firms in these four industries, and the results are presented in Table 3. The results for financial holding industry are shown as Panel A in Table 3, and for all three event windows, the ACAR respectively amounts to 3.23%, 2.83% and 3.07% which are significant at the one level (using both *t*-test and Wilcoxon rank-sum tests). Consistently, in Panels B, C and D of Table 3, the direction and significance of the results for banking, insurance and security industries are similar to the those in the financial holding sample shown in Panel A. Hence, the

news of information transparency as announced by the IDTRS has a positive effect on stock returns across four financial industries including financial holding, banking, insurance and security industries.

Additionally, we examine the effect of information transparency on stock returns of financial institutions grouping by year, and the results are presented in Table 4. In Panels A and B, the ACAR for each event window has a significantly positive effect on the value of financial institutions in the 2011-2012 period. However, in Panel C, the ACAR is not statistically significant across all event windows, and in Panel D the

Table 3. ACAR for financial institutions by industry

Panel A ACAR for financial holding industry (N=59)		
Event window	ACAR (<i>t</i> -statistic)	Median CAR (Wilcoxon <i>z</i> -statistic)
3-day window [-1, 1]	3.23% (5.81 ^{***})	3.01% (5.62 ^{***})
5-day window [-2, 2]	2.83% (3.93 ^{***})	2.56% (3.51 ^{***})
11-day window [-5, 5]	3.07% (2.88 ^{**})	2.82% (2.67 ^{**})
Panel B ACAR for banking industry (N=36)		
Event window	ACAR (<i>t</i> -statistic)	Median CAR (Wilcoxon <i>z</i> -statistic)
3-day window [-1, 1]	3.53% (5.36 ^{***})	3.10% (4.79 ^{***})
5-day window [-2, 2]	4.01% (4.71 ^{***})	3.74% (4.49 ^{***})
11-day window [-5, 5]	3.44% (2.73 ^{**})	3.25% (2.25 [*])
Panel C ACAR for insurance industry (N=26)		
Event window	ACAR (<i>t</i> -statistic)	Median CAR (Wilcoxon <i>z</i> -statistic)
3-day window [-1, 1]	3.01% (3.47 ^{***})	2.85% (3.40 ^{***})
5-day window [-2, 2]	2.22% (2.64 ^{***})	2.04% (2.07 ^{**})
11-day window [-5, 5]	1.98% (2.20 ^{**})	1.80% (1.98 ^{**})
Panel D ACAR for security industry (N=50)		
Event window	ACAR (<i>t</i> -statistic)	Median CAR (Wilcoxon <i>z</i> -statistic)
3-day window [-1, 1]	3.08% (5.03 ^{***})	2.67% (3.89 ^{***})
5-day window [-2, 2]	1.99% (2.62 ^{***})	1.74% (2.43 ^{**})
11-day window [-5, 5]	2.09% (2.96 ^{***})	1.83% (2.49 ^{**})

***Significant at the 1% level **Significant at the 5% level

ACAR for the 11-day event window is not significant at the 10 percent level. Consequently, the effect of information transparency on stock returns of financial institution is not consistent across

the years. This implies that the abnormal returns of financial institutions may not only be affected by the disclosure of information transparency but also the other

Table 4. ACAR for financial institutions by year

Panel A ACAR for year 2011 (N=40)		
Event window	ACAR (<i>t</i> -statistic)	Median CAR (Wilcoxon <i>z</i> -statistic)
3-day window [-1, 1]	4.36% (4.90 ^{***})	4.06% (3.74 ^{***})
5-day window [-2, 2]	4.35% (3.79 ^{***})	4.01% (3.51 ^{***})
11-day window [-5, 5]	5.76% (3.97 ^{***})	5.25% (3.72 ^{***})
Panel B ACAR for year 2012 (N=43)		
Event window	ACAR (<i>t</i> -statistic)	Median CAR (Wilcoxon <i>z</i> -statistic)
3-day window [-1, 1]	6.08% (8.94 ^{***})	5.71% (8.01 ^{***})
5-day window [-2, 2]	4.77% (7.26 ^{***})	4.43% (6.30 ^{***})
11-day window [-5, 5]	5.27% (5.40 ^{***})	4.84% (4.68 ^{***})
Panel C ACAR for year 2013 (N=45)		
Event window	ACAR (<i>t</i> -statistic)	Median CAR (Wilcoxon <i>z</i> -statistic)
3-day window [-1, 1]	0.58% (0.83)	0.44% (0.67)
5-day window [-2, 2]	0.81% (1.02)	0.58% (0.83)
11-day window [-5, 5]	0.56% (0.76)	0.41% (0.51)
Panel D ACAR for year 2014 (N=43)		
Event window	ACAR (<i>t</i> -statistic)	Median CAR (Wilcoxon <i>z</i> -statistic)
3-day window [-1, 1]	2.19% (4.18 ^{***})	1.95% (3.70 ^{***})
5-day window [-2, 2]	2.55% (3.76 ^{***})	2.02% (3.16 ^{***})
11-day window [-5, 5]	1.02% (1.01)	0.84% (0.93)

***Significant at the 1% level **Significant at the 5% level

determinants, such as the deterioration of macro-economics at the specific year.

The SFI launched the IDTRS, which is used to evaluate the level of transparency for all publicly-listed firms

in Taiwan. The SFI evaluated the level of transparency and classified firms into five categories (i.e., A+, A, B, C and C-) beginning in 2005. This gives insight into whether firms with the level of information disclosure contain different

valuable relevancy as well as different stock price reactions. Similar to prior studies (e.g., Liu et al., 2015) we treat firms with A+ and A rankings as high transparency, and the rest (B, C and C-rankings) as low transparency, and we measure the impact of different levels of transparency on stock prices of financial institutions by splitting samples into high and low information transparency groups, and the results are shown in Table 5.

In Panel A of Table 5, for the 3-, 5- and 11-day event windows, the ACAR respectively amounts to 2.19%, 2.63% and 2.73% significant abnormal returns for financial institutions with high rank-

ings on the announcement of information transparency. However, in Panel B, these scenarios change completely for the sample of financial institutions with low rankings, which exhibits the significant negative ACAR of -5.56%, -4.00% and -3.97% around the announcements. This provides evidence that the market adversely adjusts the stock prices of financial institutions with low information transparency, suggesting that the investors anticipate that the financial institutions with lower information transparency will exhibit the effect of more serious information asymmetry on the reputation and value of financial institutions as foreshadowing future bad news.

Table 5. ACAR for financial institutions by ranking grades

Panel A ACAR for higher ranking grade (N=150)		
Event window	ACAR (<i>t</i> -statistic)	Median CAR (Wilcoxon <i>z</i> -statistic)
3-day window [-1, 1]	2.19% (8.71 ^{***})	2.01% (8.02 ^{***})
5-day window [-2, 2]	2.63% (6.10 ^{***})	2.48% (5.25 ^{***})
11-day window [-5, 5]	2.73% (4.26 ^{***})	2.52% (3.23 ^{***})
Panel B ACAR for lower ranking grade (N=21)		
Event window	ACAR (<i>t</i> -statistic)	Median CAR (Wilcoxon <i>z</i> -statistic)
3-day window [-1, 1]	-5.56% (4.90 ^{***})	-4.16% (-4.73 ^{***})
5-day window [-2, 2]	-4.00% (3.89 ^{***})	-3.54% (-3.51 ^{***})
11-day window [-5, 5]	-3.97% (3.77 ^{***})	-3.25% (-3.16 ^{***})

***Significant at the 1% level

Conclusion

Investors demand accurate corporate disclosure in order to comprehend

the governance and performance of a firm, and they also rely on information transparency to assess the value of a firm. While prior studies recognize the poten-

tial economic effect of information transparency, these studies excluded financial institutions such as those firms in the financial holding, banking, insurance and security industries due to the unique nature of their industry characteristics. Hence, relatively few papers have focused on examining the effect of information transparency on stock price responses for only financial institutions, particularly in an emerging market, like Taiwan, where financial institutions are the dominant providers of capital.

To the best of our knowledge, this is the first study that examines the impact of information transparency on stock prices that focus on financial institutions only. Our empirical results can make up for the gap of relevant literature on information transparency, information disclosure and stock market reactions in an emerging market with a financial institution-dominated financial system as in Taiwan. Consequently, we find that information transparency has a significantly positive effect on stock returns of financial institutions, and this evidence is consistent and robust across all financial industries. Further, there is a statistically reliable association between the level of information transparency and the stock price responses, implying that the stock market differentiates between financial institutions with high information transparency and those with low information transparency.

The information exchanged between the investors and the management are always asymmetric in the capital market. The IDTRS launched by SFI can be a reliable outside source to provide

information transparency for maintaining investor confidence in the Taiwanese capital market. It substantially improves the extent of information asymmetry between investors and insiders. Thus, our findings are useful to regulatory authorities, managers and investors.

Acknowledgements

Financial support from Putian University (grant no. 2018078 and 2018079) is gratefully acknowledged.

References

- Brown, S.J. & Warner, J.B. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, 14, 3-31.
- Heflin, F.L., Shaw, K.W., & Wild, J.J. (2005). Disclosure policy and market liquidity: Impact of depth quotes and order sizes. *Contemporary Accounting Research*, 22(4), 829-865.
- Huang, J.C., Huang, C.S., & You, C.F. (2015). Bank relationships and the likelihood of filing for reorganization. *International Review of Economics and Finance*, 35, 278-291.
- Jacoby, G., Liu, M., Wang, Y., Wu, Z., & Zhang, Y. (2019). Corporate governance, external control, and environmental information. *Journal of International Financial Markets, Institutions & Money*, 58, 269-283.

- Lee, H.L. & Lee, H. (2015). Effect of information disclosure and transparency ranking system on mispricing of accruals of Taiwanese firms. *Review of Quantitative Finance and Accounting*, 44, 445-471.
- Lee, C.C., Hsieh, M.F., & Yang, S.J. (2014). The relationship between revenue diversification and bank performance: Do financial structures and financial reforms matter? *Japan and the World Economy*, 29, 18-35.
- Liang, J.W., Lin, M.F., & Chin, C.L. (2012). Does foreign institutional ownership motivate firms in an emerging market to increase voluntary disclosure? Evidence from Taiwan. *Review of Quantitative Finance and Accounting*, 39, 55-76.
- Liu, Y.C. Angela, Hsu, A.C., & Li, Y.Y. (2015). The Effects of the information disclosure and transparency rankings system on earnings management. *Journal of Interdisciplinary Mathematics*, 18(1), 53-87.
- Mikkelsen, W. & Partch, M. (1986). Valuation effects of securities offerings and the issuance process. *Journal of Financial Economics*, 15, 31-60.
- Wang, B., Xu, S., Ho, K.C., Jiang, I.M., & Huang, H.Y. (2019). Information disclosure ranking, industry production market competition, and mispricing: An empirical analysis. *Sustainability*, 11(262), 1-16. (doi:10.3390/su11010262)
- Wang, M.C., Lee, M.H., & Chuang, J.J. (2016). Relations among audit committee establishment, information transparency and earnings quality: Evidence from simultaneous equation models. *Quality & Quantity*, 50(6), 2417-2431.
- Yeh, Y.M.C., Chen, H.W., & Wu, M.C. (2014). Can information transparency improve earnings quality attributes? Evidence from an enhanced disclosure regime in Taiwan. *Emerging Markets Finance & Trade*, 50(4), 237-253.
- Yu, H.Y., Huang, C., Lin, Y.H., & Tsai, C.L. (2017). The impact of information transparency on information transfer. *Emerging Markets Finance & Trade*, 53, 776-785.