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Accounting Enforcement Actions and Financing Decisions^{*}

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—〈Abstract〉—

The study investigates whether the firms subject to the enforcement actions (GAAP violators) change their debt-equity financing policies, debt financing sources, and debt maturity after their violations of are made public by accounting enforcement actions. In addition, this study incorporates the possibility that the characteristics of GAAP violations and resulting market reactions are different across GAAP violators' listing status (KSE-listed, KSQ-listed, and unlisted firms). The empirical findings show that the enforcement actions affect GAAP violators' choice of external financing sources. GAAP violators are more likely to issue equity as opposed to debt after they are detected by the FSS. The decrease in debt financing is attributable to private debt (ex. Bank loan) rather than public debt (ex. Bond issuance).

However, I fail to find the difference in debt maturity and change in financing from banks and non-bank private loan. In contrast, the subsample analyses show that the effect of enforcement actions on financing decisions is different across listing status of firm. For the firms listed in Korea Stock Exchange (KSE), I find a increase in debt financing and a decrease in equity financing after enforcement actions.

These results are opposite to the findings in total sample analyses. I also find a significant increase in bond and bank loan after enforcement actions. For the firms listed in Korea Securities Dealers Automated Quotation (KSQ), I find that GAAP violators increase equity financing and reduce debt financing. The decrease in debt financing is due to private debt. These results are similar to findings in total sample analyses.

For unlisted firms, I do not find any evidence on change in financing policies after enforcement actions. These results hold even after controlling for conventional leverage factors (size, tangibility, growth, profitability). Overall, the evidence suggests that accounting enforcement

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actions are effective and capital market participants react to the enforcement actions. However, the reactions to enforcement actions are different across capital markets.

<Key words> GAAP violation, accounting enforcement actions, economic consequences, financing decisions, listing status

I . Introduction

The purpose of this paper is to investigate the effect of accounting enforcement actions against the firms that violate General Accepted Accounting Principle (GAAP) on the corporate financing activities. In recent years, a number of accounting scandals including restatements and financing reporting fraud (e.g., Enron) have been announced (Cheng and Farber 2008 ; Wilson 2008 ; Ball 2009). In response to the increase in accounting scandals, regulators have expressed concerns about the effect of GAAP violations on investor confidence in financial reporting system and have attempted to reduce the number of misreporting. Consequently, the regulatory response to these accounting scandals leads to a number of changes in accounting and auditing systems (e.g., the Sarbanes—Oxley Act of 2002). Capital market participants (e.g., analysts) also have demonstrated concern about the impact of misreporting on the market's assessment of the quality of financial reporting of firms that have issued financial misreporting (Wilson 2008).

With respect to the effect of financial misreporting, empirical studies have shown that the disclosure of GAAP violation increases the uncertainty about the quality of reported financial information and decreases the credibility of financial reporting system (Dechow et al. 1996 ; Farber 2005 ; Wilson 2008). For example, Dechow et al. (1996) find that stock prices decline 9% on the day of announcement of enforcement action by the Securities and Exchange Commission (SEC). Palmrose et al. (2004) document a -9.2% abnormal stock returns over a 2-day event window around restatement announcements. Hribar and Jenkins (2004) document that the relative percentage increases in the cost of capital following restatement are substantial, ranging between 7% and 19% depending on the model used. In sum, prior studies indicate that the announcement of GAAP violation (e.g., accounting enforcement action and restatement) leads to significant loss in shareholder value and an increase in the cost of equity capital.

The theoretical literature has long recognized that the asymmetry of available information between companies and outside investors can affect companies' financing choices. For example, Myers and Majluf (1984) explain how adverse selection can lead companies to refuse issue equity

and forgo profitable projects. A company's financial statements play a critical role in reducing this asymmetry and their integrity is essential to well-functioning capital markets. However, extant literature almost exclusively focuses on equity market even though debt financing is a predominant source of external financing (Bhojraj and Sengupta 2003 ; Ball et al. 2008). Empirical evidence regarding the reactions of debt market to the announcement of GAAP violation is limited. As primary users of reported financial information, debt providers evaluate quality of financial reporting. Therefore, the cost of debt capital is closely related to earnings attributes and auditing issues (Francis et al. 2005 ; Mansi et al. 2004 ; Pittman and Fortin 2004). In addition, debt providers also respond to revelation of misreporting through increases in the cost of capital or changes in contract terms (Graham et al. 2008). Graham et al. (2008) provide evidence on how debt market responds to financial misreporting by focusing on the changes in contract terms of bank loan. They find that compared to loans initiated before the disclosure of corporate misreporting, loans initiated after restatement have significantly higher loan spread, shorter maturities, higher likelihood of being secured, and more covenant restrictions. While prior literature investigating debt market provides evidence consistent with debt providers responding to financial reporting quality and misreporting, they do not address the question of the relative extent of debt market responses compared to equity market.

In this study, I seek to fill this gap by investigating the association between the revelation of GAAP violation and subsequent change in the financing decisions.¹⁾ Looking at debt-equity choices essentially allows me to consider the cost of equity relative to the cost of debt instead of evaluating the absolute cost of equity. In addition, I examine various debt financing sources such as private debt (short-term and long-term loan, banks and non-bank private loan) and public debt (bond). Furthermore, I separate the sample into three groups based on exchange listing because both firm characteristics (e.g., size, profitability, accounting quality) and capital market characteristics (e.g., ownership structure, information environment) are supposed to be different across three groups : the firms listed in the Korea Stock Exchange (KSE), the firms listed in the Korean Securities Dealers Automated Quotations (KSQ), and unlisted firms.²⁾ According to prior

1) In this paper, the term "change in financing decisions" means change in equilibrium between capital suppliers and capital demanders.

2) First, the listing requirements related to size and profitability are more generous for KSQ relative to for KSE because KSQ is made for small and medium firms including venture companies. Second, the ownership structure is different between KSE-listed and KSQ-listed firms. For example, individuals are major shareholders for KSQ-listed firms while the proportions of institutional and foreign investors are high for KSE-listed firms. Furthermore, the importance of KSQ-listed firms in capital markets are

studies, those firm and market characteristics are related to motivations for GAAP violation and earnings quality (Dechow et al. 1996 ; Yoon 2001 ; Ball and Shivakumar 2005). Therefore, the characteristics of GAAP violations and resulting market reactions might be different across GAAP violators'listing status. To test this possibility, I separately test predictions in each subsample.

The results of this paper can be summarized as follows. First, I find that firms simultaneously utilize various financing sources to finance financing deficit. Second, I find that firms change their debt-equity financing policies after their GAAP violations are made public. However, the results are different across listing status. For KSE-listed firms, they reduce equity financing and increase debt financing. However, they do not change financing policies related to debt maturity. For KSQ-listed firms, they increase equity financing and reduce private debt financing. These results are opposite to those of KSE-listed firms. For unlisted firms, they do not change financing policies even after enforcement actions. These results are robust to controlling for conventional leverage factors.³⁾

The remainder of the paper is organized as follows. In Section II, I provide a brief review of the related literature and develop the research hypotheses. Section III describes the research design and variable definitions. Section IV contains a description of the sample. Section V contains validity test of research design and empirical results. I summarize and conclude in Section VI.

II. Related Literature and Hypotheses

1. Accounting quality, information asymmetry, and cost of capital

Prior studies document that accounting quality is related to the cost of debt and equity capital by using a variety of proxies for accounting quality. For example, Sengupta (1998) and Botosan and Plumlee (2002) show that high disclosure quality rating from financial analysts lowers cost of issuing debt and cost of equity capital, respectively. Pittman and Fortin (2004) and Beatty (1989) find that the firms audited by high quality auditor enjoy a lower cost of debt and equity

increasing.

- 3) Rajan and Zingales (1995) review prior studies investigating the determinants of corporate leverage and suggest four factors supposed to significantly influence corporate leverage such as size, tangibility, profitability, and market-to-book assets ratio. Because leverage is a cumulative result of external financing, I use change in these factors as control variables to control for potentially omitted factors affecting financing decisions.

in initial public offering, respectively. A recent study by Francis et al. (2005) provides evidence on the impact of accruals quality on the interest cost of debt, debt ratings, and cost of equity capital. They argue that accruals quality proxies for information risk, a risk factor that cannot be diversified away in equilibrium (Easley and O'Hara 2004 ; Leuz and Verrecchia 2005). Bharath et al. (2008) documents that accounting quality affects the borrower's choice of private versus public debt market and the designs of debt contracts vary with accounting quality in the two markets.

Earnings management and GAAP violation are closely related to low accounting quality.⁴⁾ In particular, highly managed earnings and GAAP violations mean low quality of financial reporting while the lack of earnings management is not sufficient to guarantee high quality accounting (Lo 2008). The purpose of earnings management is to either mislead some stakeholders about underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen 1999). In more detail, Dechow et al. (1996) document that an important motivation for GAAP violation is the desire to attract external financing at low cost and to avoid debt covenant restriction.

Regardless of motivations for GAAP violation, investors and debt providers will be disappointed and revise their beliefs about the firm's expected future cash flows and/or the uncertainty about the firm's financial information when GAAP violations are revealed. Consistent with this conjecture, prior research consistently provides evidence that when GAAP violations are made public, the GAAP violators experience a significant decrease in stock price or increase in their cost of equity capital (e.g., Dechow et al. 1996 ; Palmrose et al. 2004 ; Hribar and Jenkins 2004). However, there is little research on the response of debt capital market to the detection of GAAP violation.⁵⁾ Graham et al. (2008) show that compared to loans initiated before the disclosure of corporate misreporting, bank loans initiated after restatement have significantly higher loan spread, shorter maturities, higher likelihood of being secured, and more covenant restrictions.

In summary, while prior studies investigate the relation between accounting quality and cost of

4) According to Dechow et al. (1996), "earnings management" is restricted to reporting practices within the bounds of GAAP. They define "earnings manipulation" to include both within and outside the bounds of GAAP. Therefore, in this study, I use the term, "GAAP violation", to define misreporting outside the bounds of GAAP, which include both management of earnings and omission of other requirements of GAAP not affecting earnings itself.

5) The only empirical study I am aware of that looks at debt market is Graham et al. (2008), but they use only bank loan data.

capital based on the information perspective, their focus is on equity capital market. In addition, they do not address the effect of increased cost of capital on financing choices.

2. Theories on financing

An important question facing companies in need of new financing is whether to raise debt or equity. The modern corporate finance literature focuses on two competing models to explain the debt and equity financing decisions of firms : tradeoff and pecking order hypothesis.⁶⁾

Myers (1984) advocates an alternative hypothesis, the pecking order model. It is based on the argument in Myers and Majluf (1984) that asymmetric information problems drive the capital structure of firms. Myers (1984) argues that if managers know more than the rest of the market about their firm's value (information asymmetry), the market penalizes the issuance of securities (like equity) whose expected payoffs are crucially related to the assessment of such a value. Therefore, the pecking order hypothesis predicts that firms finance new investments first with retained earnings, then with safe debt, then risky debt, and finally, but only under duress, with outside equity.

In this paper, I partially follow pecking order hypothesis to predict the change in financing decisions after enforcement action because the pecking order hypothesis considers the effect of information asymmetry problem on financing decisions.

3. Debt and equity financing

The announcement of GAAP violation increases the information asymmetry between capital markets participants (e.g., investors and lenders) and the firms. Thus, both the cost of equity and debt increase after the disclosure of GAAP violation. However, of the two cost of capitals, which increases more than the other has not been investigated so far.

In general, cost of debt is lower than cost of equity because creditors claims are paid before stockholders claim. In addition, according to pecking order hypothesis, firms prefer debt financing over equity financing due to lower information costs associated with debt financing (Myers 1984). In addition, Bharath et al. (2009) document that the pecking order hypothesis explains the expected relation between financing deficit and debt financing better as information asymmetry increases. While these explanations come from static models, they help to predict change in

6) In the tradeoff model, firms identify optimal leverage by weighting the costs and benefit of an additional amount of debt.

financing decisions when adverse selection problem increases. Thus, I expect that GAAP violators are more likely to issue debt as opposed equity after their GAAP violations are announced to the markets. This prediction is based on general perspective. While I consider the difference in capital market characteristics across exchange listing in subsample analyses, I do not make hypotheses for each case because I can't predict the ex ante effects of market characteristics on financing decisions of firms.

The first hypothesis, stated in alternative form, is as follows :

H1 : *GAAP violators are more likely to issue debt as opposed to equity after their GAAP violations are made public.*

4. Private and public debt financing

Private lenders such as banks and non-bank private lenders are supposed to be more efficient and effective monitors than are “arm's length” investors because they have better access to a borrower firm's private information relative to public bond holders (Leland and Pyle 1977 ; Diamond 1991a). Bhattacharya and Chisea (1995) argue that borrowers are willing to reveal proprietary information to the lead bank of a loan syndicate or a small group of private lenders rather than to a diffuse group of public lenders. Hence, firms with a higher degree of information asymmetry are likely to borrow privately from banks or non-banking sources, while firms with lower information asymmetry are likely to issue public debt such as bond. Myers (1977) suggests that maintaining a “continuous, intimate and flexible relationship” with lender is important. It is more likely that a firm can achieve such a relationship with banks and other private lenders than with public debt holders because private debt holders are much more concentrated and face fewer free-rider problems than public debt holders. This suggests that firms with higher future growth opportunities will prefer bank and other private debt to public debt. Bharath et al. (2008) also find that accounting quality affects the borrower's choice of private versus public debt market and the designs of debt contracts vary with accounting quality in the two market. They find that borrowers with poorer accounting quality prefer private debt (i.e., bank loans) to public debt.

Diamond (1991a) and Rajan (1992) predict a non-monotonic relation between firm quality and debt source. They predict the highest-quality firms will issue public debt, while medium-quality firms will borrow from banks. They also argue that for lower quality firms, the costs of bank monitoring may outweigh the benefits. In this case, the firms issue public debt.

Therefore, the second hypothesis, stated in alternative form, is :

H2 : *GAAP violators are more likely to issue private debt as opposed to public debt after their GAAP violations are made public.*

5. Bank and non-bank private debt financing

There is little theory and evidence on the difference between bank debt and non-bank private debt. Denis and Mihov (2003) document that bank debt and non-bank private debt differ in terms of regulatory requirements, maturity, placement structure, and the concentration and identity of debt holders. They also argue that non-bank private debt plays a unique role in accommodating the financing needs of firms with low credit quality. Carey et al. (1998) speculate that bank regulators discourage banks from making loans to firms with low credit quality by requiring large loan loss reserves for these loans.

In addition, Diamond (1991a) and Rajan (1992) predict that the costs of bank monitoring outweigh the benefits for lower quality firms. For example, if firms have valuable R&D projects but they do not have sufficiently tangible and liquid assets for collateral, then these firms may be screened out by banks. Of course, riskier firms with the lowest credit quality might not be candidates for debt financing at all.

Based on these arguments, I hypothesize that firms are less likely candidates for bank loan after GAAP violation because they have limited access to bank due to increased credit risks and the higher probability of default risk after enforcement actions.

The third hypothesis, stated in alternative form, is :

H3 : *GAAP violators are more likely to issue non-bank private debt as opposed to bank debt after their GAAP violations are made public.*

6. Short-term and long-term debt financing

Short-term debt matures before the cash flows arrive from a firm's investments and must be refinanced at terms that depend on its future credit rating. In contrast, long-term debt has maturity matching the timing of cash flows. At maturity, the firm must pay the full outstanding principal and not simply current interest. If the firm wants to roll over its debt principal at maturity, it must obtain the obligation of lenders, who can and will impose more stringent credit terms if operating performance has deteriorated. Hence, shorter debt maturities imply more frequent oversight by suppliers of debt capital. Therefore, short maturity debt creates liquidity risk

because sometimes the borrower is unable to refinance.

Diamond (1991b) explains the choice of debt maturity from the perspective of borrower. He argues that firms with high credit rating issue short-term debt directly to investors and firms with lower credit ratings issue long-term bonds or borrow through financial intermediaries such as banks. In contrast, DeAngelo et al. (2002) explains the disciplinary role of short-term debt from the perspective of capital supplier. They suggest that debt contracts with shorter maturities give managers less scope to buy time by using liquid assets to meet interest payments, thereby satisfying their current debt obligation without improving operations.

Pecking order hypothesis also makes predictions about the maturity structure of debt (Frank and Goyal 2003). According to pecking order theory, securities with the lowest information costs should be issued first, before the firm issues securities with higher information costs. Therefore, it predicts that short-term debt be exhausted before the firms issue long-term debt.

In this study, I expect that GAAP violators are more likely to issue short-term debt rather than long-term debt because the firms are expected to weak bargaining power in debt contracting process.

Therefore, the fourth hypothesis, stated in alternative form, is :

H4 : *GAAP violators are more likely to issue short-term debt as opposed to long-term debt after their GAAP violations are made public.*

III. Research design and variables

1. Financing sources and financing deficit

The pecking order theory of capital structure of Myers (1984) and Myers and Majluf (1984) predicts that firms prefer debt over equity because information asymmetry between well-informed managers and less-informed investors. When investment needs exceed internal funds, they are met primarily with debt, while equity is used as a residual source of financing. To test for the pecking order hypothesis, Shyam-Sunder and Myers (1999) suggest to regress net long-term debt issuance (ΔD_{it}) on the financing deficit (Def_{it}) as follows :

$$\Delta D_{it} = \alpha + \beta Def_{it} + \epsilon_{it} \quad (1)$$

where ΔD_{it} is long-term debt issuance minus long-term debt reduction, while Def_{it} is given

by the accounting cash flow identity.

$$Def_{it} = Div_{it} + CAPEX_{it} + Ch_Wc_{it} - OCF_{it} \quad (2)$$

in which, Div_{it} is dividend payment, $CAPEX_{it}$ is capital expenditure, Ch_Wc_{it} is the net change in working capital, and OCF_{it} is operating cash flow after interest and taxes.

The underlying assumption of this model is that debt is a predominant financing source and equity is used only as a last resort. However, Fama and French (2005) document that, in fact, most firms issue, repurchase, or do both every year. Chirinko and Singha (2000) point out that if equity is not a last resort but a common financing source, Eq.(1) have serious problems with the validity of inferences.

Based on prior theoretical and empirical findings, I modify Eq. (1) as follows :

$$\Delta FS_{it} = \alpha + \beta Def_{it} + \epsilon_{it} \quad (3)$$

where ΔFS_{it} is the net amount of financing from various sources such as equity, bond, and private loan. After conducting each regression which has different funding source as a different dependent variable, then I compare the coefficients on Def and estimate statistical significance by using stack-up methodology.

To test the effects of accounting enforcement actions on the change in financing policies, I interact dummy variable (Post) with financing deficit (Defit). The augmented version of Eq. (3) is as follows :

$$\Delta FS_{it} = \alpha_1 + \alpha_2 Post_{it} + \beta_1 Def_{it} + \beta_2 Def_{it} \cdot Post_{it} + \epsilon_{it} \quad (4)$$

To test pecking order model's prediction about capital structure, Bharath et al. (2009) augment Rajan and Zingales' (1995) model by including their firm-level information asymmetry index and analyze both level and change models. Following Bharath et al.'s (2009) approach, I also augment Eq. (4) by including Rajan and Zingales' (1995) conventional leverage factors such as size, tangibility, profitability, and growth.⁷⁾ In addition, I modify their change model by using net amount of financing from various sources as dependent variable. Instead of change in leverage, I use the amount of financing from various sources as in Eq.(3) and (4) because debt ratio is cumulative results of external financing. Therefore, I consider conventional leverage factors as control variables affecting firms' financing decisions. The augmented version of Eq.(4) is as

7) As a growth opportunity measure, I replace market-to-book asset ratio with total asset growth due to unlisted firms.

follows :

$$\begin{aligned}
 \Delta FS_{it} = & \alpha_1 + \alpha_2 Def_{it} + \alpha_3 Ch_Tangibility_{it} + \alpha_4 Ch_Tagrowth_{it} \\
 & + \alpha_5 Ch_Logsales_{it} + \alpha_6 Ch_Profitability_{it} + \beta_1 Post_{it} \\
 & + \beta_2 Post_{it} \cdot Def_{it} + \beta_3 Post_{it} \cdot Ch_Tangibility_{it} \\
 & + \beta_4 Post_{it} \cdot Ch_Tagrowth_{it} + \beta_5 Post_{it} \cdot Ch_Logsales_{it} \\
 & + \beta_6 Post_{it} \cdot Ch_Profitability_{it} + \epsilon_{it}
 \end{aligned} \tag{5}$$

I define variables as follows : All variables are scaled by total assets, as in prior studies.

- ΔFS_{it} : Net financing amount issued in year t. I use 7 different financing sources.
- $Stloan_{it}$: Short-term loan issuance minus short-term loan reduction.
- $Ltloan_{it}$: Long-term loan issuance minus long-term loan reduction.
- $Bond_{it}$: Long-term bond issuance minus long-term bond reduction.
- $Debt_{it}$: Net debt issuance in year t. $Debt_{it} = Stloan_{it} + Ltloan_{it} + Bond_{it}$.
- $Equity_{it}$: Net equity issuance in year t. This variable includes the issue of stock warrants and sales of treasury stocks as well as sale of common stock.
- $Bank_{it}$: Bank loan issuance minus bank loan reduction.
- Nbp_{it} : Loan issuance from non-bank private institution minus reduction of loan from non-bank private institutions.
- Def_{it} : $Div_{it} + Invest_{it} + Ch_Wc_{it} - Cf_{it} + R_{it}$.⁸⁾
- $Post_{it}$: Dummy variable. $Post=1$ if fiscal year is equal to or greater than detection year, otherwise $Post=0$.

2. Financing deficit definitions

To test firm's external financing decision, it is important to measure firm's financing deficit because the needs for external financing arise only when their internal cash flows are inadequate for real investment, dividend commitments and debt repayment. In this paper, I derive financing deficit (Def_{it}) from cash flow statement equation as in Frank and Goyal (2003). I define variables used to measure financing deficit (Def_{it}) as follows :

$$Def_{it} = Div_{it} + Invest_{it} + Ch_Wc_{it} + R_{it} - Cf_{it}$$

- Div_{it} : cash dividends and repurchase of treasury stock in year t ;
- $Invest_{it}$: net investment in year t (i.e., the investment section of statement of cash flow) ;
- Ch_Wc_{it} : change in working capital in year t (i.e., Net changes in operating assets and liabilities plus change in cash and cash equivalents) ;
- R_{it} : current portion of the long-term debt in year t ;

8) Please refer to Appendix I for detailed definitions of other variables.

Cf_{it} : Net income plus expenses not involving cash outflows minus income not involving cash inflows in year t.

3. Stack-up method⁹⁾

To compare the coefficients and estimate statistical significance, I use stack-up methodology. In other words, I stack up datasets used in each regression. For example, when I compare debt and equity financing, I stack up two set of observations which are used in debt and equity financing regressions, respectively. To explain such tests, partition the $\mathbf{X}$ matrices as

$$\mathbf{X}_1 = [\mathbf{i}_1 \quad \mathbf{X}_1^*] \quad \mathbf{X}_2 = [\mathbf{i}_2 \quad \mathbf{X}_2^*]$$

Where $\mathbf{i}_1, \mathbf{i}_2$ are n_1 and n_2 vectors of ones, and the $\mathbf{X}_i^*$ are matrices of the $k-1$ regressor variables.

The conformable partitioning of the β vectors is

$$\beta_1' = [\alpha_1 \quad \beta_1^{*'}] \quad \beta_2' = [\alpha_2 \quad \beta_2^{*'}]$$

The unrestricted model is

$$\begin{bmatrix} \mathbf{y}_1 \\ \mathbf{y}_2 \end{bmatrix} = \begin{bmatrix} \mathbf{i}_1 & 0 & \mathbf{X}_1^* & 0 \\ 0 & \mathbf{i}_2 & 0 & \mathbf{X}_2^* \end{bmatrix} \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \beta_1^* \\ \beta_2^* \end{bmatrix} + \mathbf{u}$$

where, $\mathbf{y}_1$ =The amount of one funding source ;

$\mathbf{y}_2$ =The amount of another funding source ;

$\mathbf{i}_1$ =Vector of ones for one funding source equation ;

$\mathbf{i}_2$ =Vector of ones for another funding source equation ;

$\mathbf{X}_1^*$ =Matrix of independent variables used in one funding source equation ;

$\mathbf{X}_2^*$ =Matrix of independent variables used in another funding source equation.

The test of the null can be based on the RSS (Residual Sum of Square) from these two regressions.

$$H_0 : \beta_1^* = \beta_2^*$$

9) "stack-up" is not a formal name of this method. This method is just an application of so called, "Chow test," Refer to "Econometric method"(4th edition) by Johnston and DiNardo. pp.126-130.

IV. Data

〈Table 1〉 Sample selection

Panel A : Sample selection procedure		
Total post-audit reviews issued from December 11, 2001 through December 10, 2008 attributable to GAAP violations		360
Less :		
Firms not listed on KIS-Value II database		(37)
Firms with quarterly and/or consolidate reports		(38)
Multiple releases involving the same firms		(16)
Financial firms		(35)
Firms changing industry and/or merged		(8)
Final sample		226
Panel B : Sample composition		
KSE-listed firms	62	(27%)
KSQ-listed firms	76	(34%)
Unlisted firms	88	(39%)
Total firms	226	(100%)

The sample selection procedure used to obtain GAAP violating firms for empirical tests is summarized in Panel A of Table 1. I collect a total sample of 360 reports of enforcement actions issued for the period 2001 through 2008 from the FSS' website.¹⁰⁾ This sample consists of KSE-listed, KSQ-listed, and unlisted firms. First, I exclude 37 firms (most firms are unlisted) because financial statements data are not available for these firms on KIS-Value database.¹¹⁾ Second, 38 cases where enforcement actions are issued against quarterly report are eliminated because their

10) The FSS has been disclosing the results of post-audit reviews on web site since 2001. Furthermore, they must disclose the reports immediately after they determine the degree of penalty if there are serious cases. Refer to article 59 (publication of violation) of Amended Regulation on External Audit and Accounting (on October 17, 2001).

11) I first search all the company names FSS discloses in KIS-value database to match KIS company-code. This procedure is inevitable to use unlisted firms' financial statements data. When there is no matched name in KIS, I use DART (Data Analysis, Retrieval and Transfer) System because DART provides the track of change in company name. In fact, 69 firms change their names after detection.

financial statements are not audited. Third, I additionally exclude 16 cases where firms are detected several times to control for multiple detection effect. Finally, 35 financial firms and 8 firms changing industry after detection are eliminated to increase comparability in analysis. This procedure results in a final sample of 226 firms. Panel B presents the composition of final sample. Sixty-two firms (27%) are listed in KSE, 76 firms (34%) are listed in KSQ, and 88 firms (39%) are unlisted companies.

V. Empirical results

1. Descriptive statistics

Table 2 presents the descriptive statistics of variables.¹²⁾ The summary statistics reported in Panel A indicate that, on average, GAAP violators rely more on debt financing than equity financing when firms need external financing. The mean (median) debt financing (*Debt*) is 0.069 (0.047) and the mean (median) equity financing (*Equity*) is 0.051 (0.00). Panel A also shows that firms heavily rely on public debt market for debt financing. The debt financing from bond market (*Bond*) is a mean of 0.033, which is about 50% of total debt financing (*Debt*). On the other hand, Panel A documents that bank (*Bank*) and non-bank private (*Nbp*) financing, which are financing from private debt market, are seemingly not significant. The mean (median) values of *Bank* and *Nbp* are 0.004 (0) and -0.005 (0), respectively. The results for bank and non-bank private markets are likely to be affected by selection biases. Note that these financing data rely on annual reports.¹³⁾

Panel A of Table 2 also reports the summary statistics of various determinants of financing deficit. It shows that long-term investment (*Invest*) is an important determinant of financing deficit. The mean (median) value of *Invest* is 0.093 (0.065), which is about 80% of total financing deficit (*Def*). In addition, change in working capital (*Ch_Wc*) which is closely related to short-term investment is also an important determinant of financing deficit.

12) Observations that fall below the bottom 1 percent or above the top 1 percent of the distribution of each variable are deleted before computing the descriptive statistics.

13) Unlisted firms are not regulated to file and submit their annual report to Financial Service Commission (FSC) and Stock Exchange. Therefore, the bank and non-bank private loan data are not sufficient for unlisted firms while unlisted firms are more likely to borrow a larger portion of their funding needs from private debt market such as bank and non-bank private than public market.

〈Table 2〉 Descriptive statistics

Panel A. Summary statistics of the variables								
Variable	<i>N</i>	<i>Mean</i>	<i>Std.Dev</i>	<i>Min</i>	<i>Q1</i>	<i>Median</i>	<i>Q3</i>	<i>Max</i>
<i>Logta</i>	2,366	24.823	2.076	16.806	23.46	24.405	25.852	30.861
<i>Stloan</i>	2,025	0.016	0.089	−0.335	−0.022	0.005	0.056	0.367
<i>Ltloan</i>	2,025	0.020	0.052	−0.141	0.000	0.000	0.029	0.316
<i>Bond</i>	2,025	0.033	0.073	−0.143	0.000	0.000	0.044	0.434
<i>Debt</i>	2,025	0.069	0.124	−0.441	−0.002	0.047	0.139	0.653
<i>Equity</i>	2,025	0.051	0.130	0.000	0.000	0.000	0.019	0.881
<i>Bank</i>	960	0.004	0.092	−0.339	−0.043	0.000	0.045	0.324
<i>Nbp</i>	960	−0.005	0.034	−0.204	−0.007	0.000	0.000	0.143
<i>Div</i>	2,025	0.005	0.012	0.000	0.000	0.000	0.005	0.102
<i>Invest</i>	2,025	0.093	0.151	−0.346	0.007	0.065	0.146	0.882
<i>Ch_Wc</i>	2,025	0.052	0.124	−0.33	−0.016	0.036	0.103	0.621
<i>Cf</i>	2,025	0.063	0.095	−0.295	0.019	0.062	0.116	0.348
<i>R</i>	2,025	0.036	0.047	0.000	0.000	0.014	0.057	0.261
<i>Def</i>	2,025	0.123	0.179	−0.322	0.004	0.080	0.196	1.120
<i>Ch_Tangibility</i>	2,178	−0.001	0.085	−0.757	−0.035	−0.004	0.025	0.516
<i>Ch_Tagrowth</i>	2,024	−0.074	2.013	−60.17	−0.195	−0.010	0.151	5.687
<i>Ch_Logsales</i>	2,162	0.096	0.504	−3.654	−0.054	0.089	0.245	4.218
<i>Ch_Profitability</i>	2,035	−0.014	0.161	−2.078	−0.044	−0.004	0.024	2.297
Panel B. Difference between before and after enforcement								
Variable	Before Enforcement		After Enforcement		t-test		Wilcoxon test ¹⁾	
	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Diff</i>	<i>Pr > t </i>	<i>Pr > Z </i>	
<i>Logta</i>	24.61	24.243	25.253	24.62	−0.643	(0.00)	(0.00)	
<i>Stloan</i>	0.021	0.012	0.007	0.000	0.015	(0.00)	(0.00)	
<i>Ltloan</i>	0.024	0.002	0.013	0.000	0.011	(0.00)	(0.00)	
<i>Bond</i>	0.038	0.000	0.025	0.000	0.012	(0.00)	(0.00)	
<i>Debt</i>	0.083	0.066	0.045	0.024	0.038	(0.00)	(0.00)	
<i>Equity</i>	0.054	0.000	0.047	0.000	0.007	(0.23)	(0.00)	
<i>Bank</i>	0.004	0.000	0.004	0.000	0.000	(0.99)	(0.42)	
<i>Nbp</i>	−0.008	0.000	−0.003	0.000	−0.004	(0.04)	(0.00)	
<i>Div</i>	0.005	0.000	0.006	0.000	−0.001	(0.02)	(0.41)	
<i>Invest</i>	0.107	0.078	0.069	0.052	0.037	(0.00)	(0.00)	
<i>Ch_Wc</i>	0.063	0.046	0.034	0.023	0.029	(0.00)	(0.00)	
<i>Cf</i>	0.071	0.069	0.05	0.049	0.021	(0.00)	(0.00)	
<i>R</i>	0.038	0.019	0.032	0.009	0.006	(0.01)	(0.00)	
<i>Def</i>	0.141	0.100	0.091	0.046	0.050	(0.00)	(0.00)	
<i>Ch_Tangibility</i>	−0.002	−0.006	0.000	−0.003	−0.002	(0.25)	(0.01)	
<i>Ch_Tagrowth</i>	−0.103	−0.024	−0.021	0.007	−0.082	(0.00)	(0.00)	
<i>Ch_Logsales</i>	0.144	0.120	0.003	0.045	0.141	(0.57)	(0.20)	
<i>Ch_Profitability</i>	−0.014	−0.003	−0.013	−0.007	−0.001	(0.88)	(0.92)	

1) Wilcoxon–Mann–Whitney test (a non–parametric analog to the independent samples t–test)

The mean (median) value of *Ch_Wc* is 0.052 (0.036). Repayment to matured long-term debt (*R*) is also significant factor for external financing while dividend (*Div*) is negligible.

Panel B of Table 2 presents the univariate comparisons of these variables between before and after enforcement actions. It shows that debt financing significantly declines after enforcement actions. The mean (median) net debt issuance (*Debt*) decreases from 0.083 (0.066) before enforcement actions to 0.045 (0.024) after enforcement actions. This decrease in debt financing is also observed in all debt financing sources such as short-term loan (*Stloan*), long-term loan (*Ltloan*) and bond issuance (*Bond*). For example, short-term loan (*Stloan*) falls from a mean of 0.021 before enforcement actions to 0.007 after enforcement actions. Long-term loan (*Ltloan*) and financing from bond market (*Bond*) decrease in a similar manner. On the other hand, equity financing (*Equity*) shows different trend. It does not significantly decrease from the parametric point view (*t-test*) while significant decrease is found in non-parametric test (*Wilcoxon test*). Although equity financing (*Equity*) declines after enforcement actions and the decline is partially significant, the magnitude of the decrease is relatively small compared to that of debt financing (*Debt*). For bank loans (*Bank*), there is no economical and statistical difference between before and after enforcement action. In contrast, non-bank private (*Nbp*) increases after enforcement actions are made public. Panel B also shows that financing deficit (*Def*) declines after firms are subject to enforcement actions. Financing deficits (*Def*) significantly decreases from 0.141 before enforcement to 0.091 after enforcement. This decrease in financing deficit reflects the drop in the scale of investment after GAAP violations are made public. Both long-term investment (*Invest*) and short-term investment (*Ch_Wc*) drop by half. *Invest* (*Ch_Wc*) decrease from 0.107 (0.063) before enforcement actions to 0.069 (0.034) after enforcement actions. However, dividends (*Div*) and repayment to matured long-term debt (*R*) are not so much influenced by enforcement actions compared to other determinants of financing deficit. Note that cash flows (*Cf*) also significantly decline from 0.071 before enforcement actions to 0.05 after enforcement actions.

Table 3 shows the Pearson correlation matrix. Short-term loan (*Stloan*) is positively related to bank and non-bank private loan (0.71, 0.26, respectively). Long-term loan (*Ltloan*) is also positively correlated with both private market financing (0.29, 0.05, respectively). However, the magnitude of coefficients is much smaller than those of short-term loan. These findings indicate that financing from private market are likely to be short-term. While the correlations between private loans (*Stloan* and *Ltloan*) and equity financing (*Equity*) are significantly negative, the magnitudes of coefficients are small. Bond financing (*Bond*) is positively correlated with equity financing (*Equity*). Financing deficit (*Def*) is statistically and positively correlated with all

financing sources ($Stloan=0.40$, $Ltloan=0.26$, $Bond=0.41$, $Equity=0.68$, $Bank=0.25$, $Nbp=0.09$, respectively). The magnitudes of coefficients are large and statistically significant. Equity financing ($Equity$) is closely correlated with financing deficit (Def). These findings indicate that firms finance from various sources, which are not consistent with the pecking order hypothesis. The close correlation between equity financing ($Equity$) and financing deficit (Def) is mainly due to investment ($Invest=0.45$).¹⁴⁾

2. Empirical tests for hypotheses

A. Total sample analyses

Table 4 presents the results of the main regression equation (4) for total sample firms. To test for hypothesis 1, I compare equity financing ($Equity$) with two debt financing sources such as total debt financing ($Debt$) and debt financing from public market ($Bond$). First, column (7) shows that the coefficient on financing deficit (Def) is positive (0.45) and significant ($t=13.46$). This finding implies that equity financing is important to GAAP violators during the periods of GAAP violation.

The coefficient of $Post \cdot Def$ capturing the effect of enforcement actions on the GAAP violators' equity financing, is 0.14 ($t=2.57$). This evidence indicates that, on average, GAAP violators more rely on equity market to finance their financing deficit after enforcement actions. Second, column (6) shows that the coefficient on Def is positive (0.48) and significant ($t=14.85$) when dependent variable is $Debt$, which is similar to equity financing case reported in column (7). This evidence implies that GAAP violators rely on both equity and debt financing to a similar extent before enforcement actions. However, in contrast to equity financing, the coefficient of $Post \cdot Def$ is negative (-0.12) and statistically significant ($t=-2.39$). This finding indicates that debt financing declines after enforcement actions.

When public debt financing ($Bond$) is used as a proxy for debt financing, column (3) shows that the coefficient on Def is positive (0.16) and significant ($t=8.90$). However, the coefficient on interaction term ($Post \cdot Def$) is positive (0.02) but insignificant ($t=0.69$). This finding implies that bond financing does not change after enforcement actions.

14) I report the result of difference test on each variable before and after enforcement actions in Appendix II.

〈Table 3〉 Correlation matrix

	Lloan	Bond	Equity	Bank	Nbp	Div	Invest	Ch_Wc	Cf	R	Def	Ch_Tangibilit	Ch_Tagrowth	Ch_Logsales	Ch_Profitability
<i>Sloan</i>	0.04 (0.10)	-0.07 (0.00)	-0.09 (0.00)	0.71 (0.00)	0.26 (0.00)	0.02 (0.42)	0.25 (0.00)	0.30 (0.00)	0.04 (0.06)	0.00 (0.84)	0.40 (0.00)	-0.06 (0.00)	0.02 (0.49)	0.09 (0.00)	-0.09 (0.00)
<i>Lloan</i>	1	0.00 (0.93)	-0.08 (0.00)	0.29 (0.00)	0.05 (0.11)	-0.01 (0.67)	0.27 (0.00)	0.08 (0.00)	0.10 (0.00)	0.08 (0.00)	0.26 (0.00)	0.11 (0.00)	-0.05 (0.03)	0.06 (0.01)	-0.01 (0.65)
<i>Bond</i>		1	0.07 (0.00)	-0.02 (0.57)	-0.09 (0.00)	0.02 (0.47)	0.21 (0.00)	0.16 (0.00)	-0.10 (0.00)	0.26 (0.00)	0.41 (0.00)	0.00 (0.88)	0.04 (0.07)	0.02 (0.27)	-0.06 (0.01)
<i>Equity</i>			1	-0.13 (0.00)	-0.01 (0.80)	-0.01 (0.76)	0.45 (0.00)	0.33 (0.00)	-0.17 (0.00)	-0.10 (0.00)	0.68 (0.00)	-0.14 (0.00)	0.03 (0.13)	0.08 (0.00)	0.01 (0.55)
<i>Bank</i>				1	0.07 (0.04)	0.10 (0.00)	0.26 (0.00)	0.19 (0.00)	0.13 (0.00)	-0.09 (0.00)	0.25 (0.00)	0.02 (0.48)	0.00 (0.99)	0.16 (0.00)	-0.09 (0.01)
<i>Nbp</i>					1	0.05 (0.12)	0.05 (0.10)	0.08 (0.01)	0.00 (0.92)	-0.06 (0.06)	0.09 (0.01)	-0.05 (0.12)	-0.04 (0.24)	0.02 (0.57)	-0.04 (0.18)
<i>Div</i>						1	0.04 (0.05)	0.01 (0.52)	0.15 (0.00)	-0.07 (0.00)	0.01 (0.52)	0.03 (0.16)	0.01 (0.82)	0.02 (0.33)	-0.04 (0.07)
<i>Invest</i>							1	0.00 (0.96)	0.26 (0.00)	-0.14 (0.00)	0.68 (0.00)	0.05 (0.01)	-0.04 (0.05)	0.22 (0.00)	0.00 (0.95)
<i>Ch_Wc</i>								1	0.29 (0.00)	-0.13 (0.00)	0.51 (0.00)	-0.27 (0.00)	0.09 (0.00)	0.18 (0.00)	0.10 (0.00)
<i>Cf</i>									1	-0.02 (0.42)	-0.11 (0.00)	-0.10 (0.00)	0.03 (0.22)	0.32 (0.00)	0.27 (0.00)
<i>R</i>										1	0.06 (0.01)	0.01 (0.55)	0.04 (0.10)	-0.03 (0.17)	0.02 (0.33)
<i>Def</i>											1	-0.09 (0.00)	0.02 (0.31)	0.14 (0.00)	-0.07 (0.00)
<i>Ch_Tangibility</i>												1	-0.13 (0.00)	-0.18 (0.00)	-0.18 (0.00)
<i>Ch_Tagrowth</i>													1	0.10 (0.00)	0.26 (0.00)
<i>Ch_Logsales</i>														1	0.26 (0.00)

p-values for two-tailed tests are provided in parentheses. All variables are scaled by average total assets. See Appendix I for details of the measurement of the variables. Observations that fall below the bottom 1 percent or above the top 1 percent of the distribution of variables are truncated. In unreported Spearman correlation table, the matrix shows the similar results.

Table 4> Tests of changes in financing policies in total sample

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)–(2)	(2)–(3)	(4)–(5)	(3)–(7)	(6)–(7)
	<i>Sloan</i>	<i>Ltloan</i>	<i>Bond</i>	<i>Bank</i>	<i>Nbp</i>	<i>Debt</i>	<i>Equity</i>	<i>Diff</i>	<i>Diff</i>	<i>Diff</i>	<i>Diff</i>	<i>Diff</i>
<i>Constant</i>	–0.011*** (–3.779)	0.011*** (6.684)	0.015*** (5.915)	–0.019*** (–4.597)	–0.010*** (–4.652)	0.016*** (5.139)	–0.010*** (–3.398)					
<i>Def</i>	0.226*** (10.497)	0.089*** (7.456)	0.161*** (8.904)	0.146*** (4.980)	0.018** (2.415)	0.476*** (14.850)	0.454*** (13.456)	0.137*** (6.60)	–0.072*** (–3.28)	0.128** (4.26)	–0.293*** (–6.67)	0.022 (0.35)
<i>Post</i>	0.004 (1.170)	–0.002 (–0.701)	–0.006** (–2.116)	0.013** (2.187)	0.006** (2.119)	–0.003 (–0.772)	0.003 (0.683)					
<i>Post · Def</i>	–0.084** (–2.398)	–0.054*** (–3.244)	0.019 (0.687)	–0.067 (–1.413)	–0.005 (–0.549)	–0.118** (–2.394)	0.139** (2.574)	–0.030 (–0.89)	–0.073** (–2.10)	–0.062 (–1.31)	–0.120* (–1.70)	–0.257** (–2.56)
R^2	0.168	0.076	0.170	0.067	0.010	0.415	0.472					
<i>N</i>	2,025	2,025	2,025	960	960	2,025	2,025					

*, **, *** significant at 10 percent, 5 percent, and 1 percent level, respectively.

Refer to Appendix 1 for definition of variables.

t–values in parentheses are computed based on clustered (based on firm code as a single cluster) method which is robust to the correlation of disturbances within groups and to not identically distributed disturbances.

The statistical differences between coefficients are tested by stacking up the observations used in each regression model.

$$\Delta FS_{it} = \alpha_1 + \alpha_2 Post_{it} + \beta_1 Def_{it} + \beta_2 Post_{it} \cdot Def_{it} + \epsilon_{it}$$

Eq. (4)

As a dependent variable, ΔFS is one of financing sources such as *Sloan*, *Ltloan*, *Bond*, *Bank*, *Nbp*, *Debt* and *Equity*.

$$Def_{it} = Div_{it} + Invest_{it} + Ch_W_{it} + R_{it} - Cf_{it}$$

To test for hypothesis 2, I compare long-term loan (*Ltloan*) and Bond. I use long-term loan as a proxy for private debt to control for debt maturity because, in general, bond financing is long-term. Column (2) shows that the coefficient on *Post* · *Def* is -0.05 ($t=-3.24$), indicating a significant decrease in private long-term financing after enforcement actions. In contrast, public long-term financing does not change even after enforcement as shown in column (3). The column ((2)-(3)) confirms the difference in the interaction term is significant at 5% level ($t=-2.10$)

For hypothesis 3, I use bank and non-bank private loan data reported in annual report. Because unlisted firms are not forced to submit annual report, the sample size is different from other cases based on cash flows statement. The results in column (4) and (5) show that the coefficients on *Def* are 0.14 ($t=4.98$) and 0.02 ($t=2.41$), respectively. These results indicate that GAAP violators borrow from both private lenders and that they rely more on banks than non-bank private lenders before enforcement actions. The column (4) and (5) also show that change in financing from both private lenders. The coefficients on *Post* · *Def* are negative (-0.067 , -0.005) but statistically insignificant. These results imply that there are no changes in financing policies within the private debt markets even after enforcement actions. Although I do not test the difference in total financing level enforcement actions, it seems that firms still rely more on bank loan than non-bank private even after enforcement.

For hypothesis 4, the results in column (1) and (2) show that the coefficients on *Def* are positive and significant, 0.226 ($t=10.49$) in column (1) and 0.089 ($t=7.45$) in column (2), respectively. These findings indicate that the amount of fund raised from short-term debt is much greater than that of long-term debt before enforcement actions. In contrast, the coefficients on *Post* · *Def* are significantly negative, -0.084 ($t=-2.39$) in column (1), -0.054 ($t=-3.24$), respectively. In addition, the magnitudes of coefficients on interaction terms are not significantly different as shown in column ((1)-(2)). These findings imply that GAAP violators reduce both short-term and long-term loan significantly after enforcement actions. More importantly, these findings are interpreted as a significant change in financing policies regarding term-structure in financing policy because the extent of financing from bank is much larger than financing from non-bank private lenders before enforcement actions. That is, when the magnitudes of coefficients on *Post* · *Def* are compared with those of coefficients on *Def*, the portion of decrease in short-term financing is 37% ($=0.084/0.226$), that of long-term financing is 60% ($=0.054/0.089$). In summary, GAAP violators more significantly reduce their long-term debt financing relative to short-term financing after enforcement actions.

B. Subsample analyses

Prior studies provide evidence that financing structure is different among firms with different characteristics such as size, age, and growth (Frank and Goyal 2003 ; Fama and French 2005).¹⁵⁾ Following prior research, I divide the sample into three groups based on the criterion used in post-audit review report : KSE-listed, KSQ-listed, and unlisted firms. However, this method of division is somewhat different from prior studies. While prior research focuses on finding firms that are commonly thought to be particularly subject to adverse selection in one capital market, however, the focus of this paper is on different market environment related to information asymmetry.

(1) KSE-listed firms

Panel A of Table 5 presents the results of regression analyses using only KSE firms. The results seem different from those shown in Table 4. First, KSE-listed firms significantly reduce their equity financing after enforcement. In column (7), the coefficient on $Post \cdot Def$ is -0.20 ($t=-2.57$). In contrast to equity financing, KSE-listed firms weakly increase their debt financing (total debt and bond) after enforcement actions. In column (6) and (3), the coefficients are 0.16 ($Debt$) and 0.10 ($Bond$), respectively. Frank and Goyal (2003) find that the pecking order hypothesis performs much better when applied to large firms. In general, KSE-listed firms are larger than KSQ-listed firms. Therefore, the results of KSE-listed firm support Hypothesis 1.

For the comparison between public and private debt (H2), column (2) shows insignificant decrease in long-term loan while column (3) shows weak increase in bond after enforcement actions. These results are not consistent with hypothesis 2.

For hypothesis 3, column (4) and (5) of Panel A show that KSE-listed firms more prefer bank to non-bank private financing. The coefficient on interaction term ($Post \cdot Def$) of bank regression is 0.24 ($t=2.93$), which is greater than pre-enforcement coefficient, 0.11 while non-bank private financing increase insignificantly. For term structure, there is no significant change.

In summary, KSE-listed firms reduce their equity financing and replace it with public debt (Bond) financing after enforcement. For private debt, there is not significant change. The result of comparison with bank and non-bank private financing should be interpreted with caution. In

15) However, those findings are not explained by pecking order theory in which the main driving force of the capital structure is adverse selection. For example, Frank and Goyal (2003) find that small high-growth firms do not behave according to the pecking order theory while small high-growth firms are often thought of as firms with large information asymmetries. They suggest the pecking order works best in samples of large firms.

principle, the sum of financing from bank and non-bank private lenders should be equal to the sum of short-term and long-term financing. However, in my review, I find many cases where the matching is impossible. In addition, some firms did not submit their annual report to regulator (FSC), leading to reduced sample of KSE-listed firms.

(2) KSQ-listed firms

Panel B of Table 5 documents the results for KSQ-listed firms. The results are overall different from those of KSE-listed firm and consistent with Table 4. In other words, KSQ-listed firms are critical for the general findings in Table 4. After enforcement actions, KSQ-listed firms issue equity stocks and reduce the debt financing. The coefficient of financing deficit is 0.19 ($t=3.25$) for equity financing and -0.141 ($t=2.45$) for debt financing. On the other hand, financing from public market (Bond) does not change. This is inconsistent with Hypothesis 1 but consistent with Frank and Goyal's (2003) findings that small and growth firms do not generally follow the pecking order hypothesis.¹⁶⁾

For hypothesis 2, long-term loan decreases in significant manner (column 2) while bond does not change after enforcement action. This result is also not consistent with hypothesis 2.

For hypothesis 3, column (4) and (5) of Panel B show that KSQ-listed firms reduce bank loan more significantly than non-bank private. While both financing sources decrease, bank loan (Bank) shows the significance. The coefficients on $Post \cdot Def$ are -0.12 ($t=-2.27$) for Bank and -0.00 ($t=-0.36$) for Nbp.

For hypothesis 4, column (1) and (2) of Panel B of Table 5 show both private loans (short-term and long-term loan) significantly decrease and the magnitudes of incremental change on financing deficit are large. The coefficients on $Post \cdot Def$ are -0.11 ($t=-2.87$) for short-term and -0.05 ($t=-2.86$) for long-term.

In summary, KSQ-listed firms increase their equity financing and reduce their private debt financing (both short-term and long-term loan) while they do not change public debt financing after enforcement action. The decrease in private debt financing is due to both short-term and long-term loan.

16) KSQ-listed firms are relatively smaller than KSE-listed and even unlisted firms. In addition, they are more likely to be higher growth firms than other firms. Unreported result shows that they also invest a larger sum of money compared to other firms.

Table 5 Tests of changes in financing policies in subsample

Panel A : KSE-listed firms													
Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)–(2)	(2)–(3)	(4)–(5)	(3)–(7)	(6)–(7)	
Constant	–0.016 (–2.881)	0.006 (2.004)	0.028 (6.073)	–0.025 (–4.715)	–0.015 (–4.740)	0.017 (2.928)	–0.008 (–1.435)						
Def	0.246 (5.082)	0.122 (4.133)	0.268 (7.978)	0.108 (1.943)	0.037 (2.007)	0.636 (8.999)	0.295 (4.169)	0.124 (2.79)	–0.146 (–3.00)	0.071 (1.35)	–0.027 (–0.33)	0.341 (2.47)	
Post	0.008 (1.003)	–0.004 (–1.001)	–0.012 (–2.208)	0.012 (1.560)	0.005 (1.227)	–0.009 (–1.205)	0.013 (1.965)						
Post · Def	0.086 (1.182)	–0.026 (–0.672)	0.102 (1.699)	0.237 (2.931)	0.022 (0.793)	0.162 (1.876)	–0.203 (–2.569)	0.112 (1.45)	–0.128 (–1.64)	0.215 (2.74)	0.305 (2.92)	0.365 (2.33)	
R ²	0.217	0.150	0.302	0.166	0.023	0.656	0.261						
N	677	677	677	447	447	677	677						
Panel B : KSQ-listed firms													
Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)–(2)	(2)–(3)	(4)–(5)	(3)–(7)	(6)–(7)	
Constant	–0.006 (–1.028)	0.015 (3.888)	0.002 (0.495)	–0.015 (–2.217)	–0.005 (–1.518)	0.011 (1.568)	–0.006 (–0.793)						
Def	0.163 (6.204)	0.048 (3.029)	0.147 (5.792)	0.153 (4.381)	0.004 (0.384)	0.358 (9.404)	0.574 (12.924)	0.115 (4.17)	–0.099 (–3.16)	0.149 (4.06)	–0.427 (–7.16)	–0.216 (–2.77)	
Post	–0.004 (–0.486)	–0.005 (–0.991)	0.006 (1.002)	0.001 (0.049)	0.004 (1.153)	–0.003 (–0.291)	0.001 (0.127)						
Post · Def	–0.112 (–2.873)	–0.053 (–2.859)	0.023 (0.606)	–0.116 (–2.270)	–0.004 (–0.359)	–0.141 (–2.448)	0.196 (3.248)	–0.059 (–1.45)	–0.076 (–1.64)	–0.112 (–2.15)	–0.173 (1.94)	–0.337 (–2.96)	
R ²	0.111	0.036	0.155	0.082	–0.002	0.268	0.588						
N	607	607	607	420	420	607	607						

〈Table 5〉 Tests of changes in financing policies in subsample (continued)

Panel C : Unlisted firms												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)–(2)	(2)–(3)	(4)–(5)	(3)–(7)	(6)–(7)
Dependent variable	Siloan	Lloan	Bond	Bank	Nbp	Debt	Equity	Diff	Diff	Diff	Diff	Diff
Constant	−0.013*** (−3.150)	0.010*** (4.015)	0.006*** (2.075)	0.024 (1.263)	−0.003 (−0.273)	0.003 (0.638)	−0.000 (−0.112)					
Def	0.387*** (7.413)	0.166*** (6.468)	0.128*** (3.670)	−0.052 (−0.350)	0.047 (0.809)	0.681*** (9.741)	0.237*** (3.396)	0.221*** (4.58)	0.038 (0.88)	−0.099 (−0.64)	−0.109 (−1.26)	0.444*** (3.25)
Post	0.001 (0.154)	0.000 (0.109)	−0.003 (−1.213)	−0.028 (−1.398)	0.001 (0.107)	−0.002 (−0.415)	0.004 (0.893)					
Post · Def	0.009 (0.111)	−0.011 (−0.208)	−0.054 (−1.355)	0.257 (1.550)	−0.052 (−0.863)	−0.056 (−0.567)	−0.011 (−0.118)	0.02 (0.22)	0.043 (0.62)	0.309* (1.77)	−0.043 (−0.39)	−0.045 (−0.24)
R ²	0.353	0.168	0.119	0.026	−0.012	0.648	0.221					
N	741	741	741	93	93	741	741					

*, **, *** significant at 10 percent, 5 percent, and 1 percent level, respectively.

Refer to Appendix I for definition of variables.

t-values in parentheses are computed based on clustered (based on firm code as a single cluster) method which is robust to the correlation of disturbances within groups and to not identically distributed disturbances.

The statistical differences between coefficients are tested by stacking up the observations used in each regression model.

$$\Delta FS_{it} = \alpha_1 + \alpha_2 Post_{it} + \beta_1 Def_{it} + \beta_2 Post_{it} \cdot Def_{it} + \epsilon_{it}$$

Eq. (4)

As a dependent variable, ΔFS is one of financing sources such as *Siloan*, *Lloan*, *Bond*, *Bank*, *Nbp*, *Debt* and *Equity*.

$$Def_{it} = Div_{it} + Invest_{it} + Ch_WC_{it} + R_{it} - CF_{it}$$

(3) Unlisted firms

Unlisted firms are, by definition, not publicly traded in the secondary market. Therefore, their financing decision is expected to be different from listed firms. For example, their equity financing is supposed to be less sensitive to market expectations. In addition, they are less regulated and their post-audit reviews are made by audit firms not by FSS. Therefore, the capital market such as bank and bond market may not consider their GAAP violations seriously. However, there is no study examining the effect of enforcement actions on their financing.

The second row of Panel C of Table 5 shows unlisted firms' general financing structure before enforcement actions. It shows that unlisted firms also use equity financing considerably (column 7). They raise 24% of financing deficit from shareholders and this is similar to KSE-listed firms (0.29). Therefore, it seems that equity financing is also an important issue to unlisted firms. For debt financing, although the proportion of debt to equity of KSE-listed firms is similar to that of unlisted firms, the composition of debt is different. Unlisted firms primarily raise funds from the private market, specifically in short-term (39%) while KSE-listed firms depend on the bond market for 27% of their debt financing.

As shown in Panel C of Table 5, I fail to find any significant changes in financing decisions of unlisted firms. This is because their GAAP violation is not so serious to impact on the capital market.

C. Additional tests¹⁷⁾

Prior studies testing for pecking order theory develop the extended conventional leverage model which has financing deficit as an additional explanatory variable. To provide a suitable structure to test both theory variables, the regressions are run in first differences.

In this paper, I follow the idea used in prior literature because the conventional factors supposed to influence corporate leverage give a good opportunity to control other omitted variables. The conventional leverage factors suggested by Rajan and Zingales (1995) are as follows. First, (change in) tangibility variable is a proxy for (change in) collateral for financing. Second, (change in) sales variable is a proxy for (change in) firm size. Third, (change in) Market-to-Book asset (i.e., Tobin's Q) variable is proxy for (change in) growth opportunity. The fourth is (change in) profitability variable. In this paper, instead of Tobin's Q, I use total asset growth measure as a proxy for growth because my sample includes unlisted firms.

17) I also do the same analyses with the data winsorized at 1% in both tails of the distribution. However, the results are qualitatively similar with those of truncated data.

〈Table 6〉 Tests of change in financing policies with conventional leverage factors

Panel A : Total sample												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)-(2)	(2)-(3)	(4)-(5)	(3)-(7)	(6)-(7)
Dependent variable	Stloan	Lloan	Bond	Bank	Nbp	Debt	Equity	Diff	Diff	Diff	Diff	Diff
Constant	-0.010*** (-3.419)	0.011*** (6.110)	0.016*** (5.631)	-0.026*** (-5.558)	-0.011*** (-4.778)	0.016*** (4.789)	-0.011*** (-3.181)	-0.139*** (-2.94)	0.016 (0.37)	0.091 (1.56)	0.207*** (3.50)	0.228*** (2.40)
Ch_Tangibility	-0.059 (-1.481)	0.080*** (2.963)	0.064** (2.329)	0.088 (1.491)	-0.003 (-0.135)	0.085* (1.670)	-0.143*** (-3.048)	0.002 (1.53)	-0.003** (-2.44)	0.001 (0.26)	0.002 (1.04)	0.001 (0.39)
Ch_Tagrowth	0.001 (1.039)	-0.001 (-1.567)	0.002*** (2.934)	-0.001 (-0.530)	-0.002 (-1.350)	0.001 (1.107)	0.000 (0.155)	0.003 (0.40)	0.007 (0.75)	0.027** (2.11)	-0.003 (-0.14)	0.004 (0.20)
Ch_Logsales	0.005 (0.610)	0.002 (0.301)	-0.005 (-0.820)	0.030** (2.417)	0.003 (0.670)	0.002 (0.177)	-0.002 (-0.195)	0.003 (0.40)	0.007 (0.75)	0.027** (2.11)	-0.003 (-0.14)	0.004 (0.20)
Ch_Profitability	-0.075*** (-2.857)	0.023* (1.811)	0.030 (1.561)	-0.076** (-2.291)	-0.015 (-1.464)	-0.021 (-0.635)	0.027 (0.753)	-0.098*** (-3.39)	-0.007 (-0.30)	-0.061* (-1.71)	0.003 (0.10)	-0.048 (-0.71)
Def	0.210*** (9.196)	0.094*** (7.331)	0.175*** (9.225)	0.137*** (4.655)	0.016** (2.137)	0.479*** (14.085)	0.450*** (12.762)	0.116*** (5.20)	-0.081*** (-3.41)	0.121*** (3.96)	-0.275*** (-5.99)	0.029 (0.45)
Post	0.002 (0.456)	-0.001 (-0.446)	-0.006* (-1.911)	0.019*** (2.853)	0.006** (2.038)	-0.005 (-1.134)	0.004 (0.929)					
Post · Ch_Tangibility	0.093 (1.582)	0.025 (0.598)	-0.118*** (-2.834)	-0.068 (-0.804)	-0.022 (-0.726)	0.000 (0.002)	0.026 (0.324)	0.068 (0.90)	0.143*** (2.36)	-0.046 (-0.53)	-0.144 (-1.35)	-0.026 (-0.17)
Post · Ch_Tagrowth	-0.005 (-0.670)	0.003 (0.681)	0.002 (0.331)	0.000 (0.005)	0.003 (0.759)	0.000 (0.001)	-0.002 (-0.226)	-0.008 (-0.87)	0.001 (0.17)	-0.003 (-0.26)	0.004 (0.32)	0.002 (0.10)
Post · Ch_Logsales	0.015 (1.245)	0.003 (0.486)	0.004 (0.613)	0.015 (0.831)	-0.004 (-0.781)	0.022 (1.637)	-0.025 (-1.648)	0.012 (0.90)	-0.001 (-0.10)	0.019 (1.04)	0.029* (1.70)	0.047* (1.67)
Post · Ch_Profitability	0.055* (1.749)	-0.022 (-1.440)	-0.073*** (-3.201)	0.037 (0.912)	0.011 (1.030)	-0.040 (-1.038)	0.035 (0.896)	0.077** (2.18)	0.051* (1.94)	0.026 (0.62)	-0.108** (-2.07)	-0.075 (-0.99)
Post · Def	-0.054 (-1.481)	-0.050*** (-2.647)	-0.011 (-0.379)	-0.058 (-1.159)	-0.000 (-0.024)	-0.115** (-2.153)	0.136** (2.377)	-0.004 (-0.10)	-0.039 (-1.08)	-0.058 (-1.15)	-0.147** (-1.98)	-0.251** (-2.34)
R ²	0.174	0.097	0.178	0.098	0.012	0.426	0.473					
N	1,900	1,900	1,900	909	909	1,900	1,900					

Table 6 Tests of change in financing policies with conventional leverage factors (continued)

Panel B : KSE-listed firms										
Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)-(2)	(2)-(3)	(3)-(7)
<i>Constant</i>	-0.017*** (-3.203)	0.005* (1.942)	0.027*** (5.323)	-0.035*** (-5.659)	-0.016*** (-4.093)	0.015** (2.594)	-0.006 (-1.197)	-0.134* (-1.84)	0.037 (0.51)	0.336*** (4.10)
<i>Ch_Tangibility</i>	-0.016 (-0.284)	0.118*** (3.158)	0.081 (1.501)	0.239*** (2.955)	0.063 (1.339)	0.183*** (2.999)	-0.255*** (-4.158)	0.176** (1.90)	0.336*** (4.10)	0.438*** (3.93)
<i>Ch_Tagrowth</i>	-0.005 (-0.454)	-0.004 (-1.173)	-0.008 (-1.322)	-0.012 (-1.509)	-0.009 (-1.185)	-0.017 (-1.337)	0.015 (1.221)	0.004 (0.57)	-0.003 (-0.35)	-0.032 (-1.29)
<i>Ch_Logsales</i>	0.001 (0.070)	-0.005 (-0.519)	-0.005 (-0.330)	-0.029 (-1.202)	0.011 (0.929)	-0.009 (-0.410)	-0.009 (-0.451)	0.000 (0.35)	0.000 (0.00)	0.000 (0.14)
<i>Ch_Profitability</i>	-0.049 (-0.994)	0.041** (2.489)	0.058** (2.182)	0.012 (0.212)	0.015 (0.488)	0.049 (0.899)	-0.051 (-0.975)	-0.09** (-1.81)	-0.017 (-0.54)	0.109* (1.69)
<i>Def</i>	0.245*** (5.239)	0.137*** (4.843)	0.289*** (7.337)	0.174*** (2.798)	0.052* (1.836)	0.671*** (10.245)	0.268*** (4.728)	0.108** (2.19)	-0.152*** (-2.94)	0.021 (0.26)
<i>Post</i>	0.004 (0.463)	-0.003 (-0.872)	-0.012* (-1.799)	0.021** (2.393)	0.004 (0.845)	-0.012* (-1.708)	0.012** (2.105)			
<i>Post · Ch_Tangibility</i>	-0.192** (-2.490)	-0.007 (-0.140)	-0.035 (-0.409)	-0.260** (-2.194)	-0.085* (-1.783)	-0.234*** (-2.718)	0.235*** (3.591)	-0.185** (-1.90)	0.028 (0.26)	-0.27** (-2.36)
<i>Post · Ch_Tagrowth</i>	0.019 (0.848)	-0.002 (-0.201)	0.013 (0.884)	0.036** (2.094)	-0.007 (-0.620)	0.029** (2.047)	-0.024* (-1.741)	0.021 (0.70)	-0.015 (-0.89)	0.037* (1.79)
<i>Post · Ch_Logsales</i>	-0.002 (-0.063)	0.010 (0.861)	0.009 (0.309)	0.056 (1.638)	0.001 (0.036)	0.016 (0.729)	0.009 (0.453)	-0.012 (-0.37)	0.001 (0.00)	0.000 (0.17)
<i>Post · Ch_Profitability</i>	0.016 (0.297)	-0.029 (-1.367)	-0.053 (-1.465)	-0.057 (-0.857)	-0.030 (-0.795)	-0.066 (-1.098)	0.060 (1.070)	0.045 (0.80)	0.024 (0.59)	-0.113 (-1.53)
<i>Post · Def</i>	0.121* (1.751)	-0.014 (-0.331)	0.071 (1.013)	0.159* (1.753)	0.030 (0.828)	0.178** (2.153)	-0.222*** (-3.516)	0.135 (1.65)	-0.085 (-0.97)	0.293*** (2.79)
<i>R²</i>	0.230	0.190	0.292	0.203	0.036	0.681	0.323			
<i>N</i>	642	642	642	416	416	642	642			

〈Table 6〉 Tests of change in financing policies with conventional leverage factors (continued)

Panel C : KSQ-listed firms												
Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)-(2)	(2)-(3)	(4)-(5)	(3)-(7)	(6)-(7)
	Sloan	Lloan	Bond	Bank	Nbp	Debt	Equity	Diff	Diff	Diff	Diff	Diff
Constant	-0.013* (-1.920)	0.014*** (3.015)	0.004 (0.880)	-0.024*** (-2.895)	-0.007** (-2.007)	0.005 (0.569)	0.001 (0.083)					
Ch_Tangibility	-0.083 (-1.107)	0.105** (2.297)	0.049 (0.841)	-0.019 (-0.305)	-0.034* (-1.957)	0.071 (0.633)	-0.108 (-1.007)	-0.188*** (-2.70)	0.056 (0.69)	0.015 (0.24)	0.157 (1.13)	0.179 (0.83)
Ch_Tagrowth	0.000 (0.433)	-0.002* (-1.746)	0.001* (1.773)	0.001 (0.279)	-0.001 (-1.310)	-0.000 (-0.189)	0.002 (1.354)	0.002 (1.27)	-0.003*** (-2.02)	0.002 (0.89)	-0.001 (-0.46)	-0.002 (-0.89)
Ch_Logsales	0.033** (2.385)	0.006 (0.883)	-0.010 (-0.799)	0.043*** (2.976)	0.002 (0.386)	0.029 (1.333)	-0.023 (-0.937)	0.027* (1.93)	0.016 (1.13)	0.041*** (2.75)	0.013 (0.41)	0.052 (1.14)
Ch_Profitability	-0.109*** (-3.124)	0.014 (0.829)	0.026 (0.866)	-0.089** (-2.199)	-0.021** (-2.021)	-0.069 (-1.466)	0.086* (1.723)	-0.123*** (-3.02)	-0.012 (-0.37)	-0.068 (-1.48)	-0.06 (-0.85)	-0.155 (-1.64)
Def	0.139*** (5.654)	0.050*** (3.122)	0.158*** (5.913)	0.137*** (4.064)	0.003 (0.304)	0.347*** (8.785)	0.582 (12.426)	0.089*** (3.20)	-0.108*** (-3.33)	0.134*** (3.73)	-0.424*** (-6.60)	-0.235*** (-2.90)
Post	-0.002 (-0.230)	-0.003 (-0.531)	0.004 (0.629)	0.006 (0.499)	0.007** (2.206)	-0.001 (-0.080)	-0.002 (-0.181)					
Post · Ch_Tangibility	0.112 (1.222)	-0.043 (-0.659)	-0.120 (-1.420)	0.009 (0.097)	-0.001 (-0.015)	-0.050 (-0.371)	0.060 (0.458)	0.155 (1.41)	0.077 (0.71)	0.01 (0.10)	-0.18 (-0.96)	-0.11 (-0.42)
Post · Ch_Tagrowth	-0.011 (-0.987)	0.002 (0.424)	-0.004 (-0.553)	-0.021* (-1.725)	0.008* (1.899)	-0.013 (-1.191)	0.011 (1.055)	-0.013 (-0.95)	0.006 (0.69)	-0.029** (-2.21)	-0.015 (-0.99)	-0.024 (-1.13)
Post · Ch_Logsales	-0.014 (-0.757)	0.003 (0.298)	0.007 (0.470)	0.001 (0.053)	-0.007 (-1.269)	-0.005 (-0.204)	-0.005 (-0.188)	-0.017 (-0.84)	-0.004 (-0.22)	0.008 (0.39)	0.012 (0.35)	0.00 (0.00)
Post · Ch_Profitability	0.090** (2.297)	-0.021 (-1.134)	-0.081** (-2.440)	0.048 (1.026)	0.018* (1.751)	-0.012 (-0.234)	-0.010 (-0.185)	0.111** (2.39)	0.06* (1.72)	0.03 (0.59)	-0.071 (-0.95)	-0.002 (-0.00)
Post · Def	-0.069* (-1.948)	-0.050** (-2.429)	-0.001 (-0.022)	-0.090 (-1.640)	-0.006 (-0.709)	-0.121* (-1.945)	0.178*** (2.749)	-0.019 (-0.49)	-0.049 (-1.05)	-0.084 (-1.49)	-0.179* (-1.85)	-0.299** (-2.44)
R ²	0.133	0.056	0.155	0.127	0.040	0.277	0.585					
N	575	575	575	404	404	575	575					

Table 6 Tests of change in financing policies with conventional leverage factors (continued)

Panel D : Unlisted firms													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)		(1)–(2)	(2)–(3)	(4)–(5)	(3)–(7)	(6)–(7)
Dependent variable	<i>Sloan</i>	<i>Lloan</i>	<i>Bond</i>	<i>Bank</i>	<i>Nbp</i>	<i>Debt</i>	<i>Equity</i>		<i>Diff</i>	<i>Diff</i>	<i>Diff</i>	<i>Diff</i>	<i>Diff</i>
<i>Constant</i>	–0.010 ^{**} (–2.306)	0.008 ^{***} (3.236)	0.003 (0.862)	0.026 (1.231)	–0.009 (–0.697)	0.001 (0.300)	0.001 (0.295)		–0.108 (–1.20)	–0.052 (–0.97)	0.036 (0.14)	0.126 ^{**} (2.26)	0.050 (0.57)
<i>Ch_Tangibility</i>	–0.092 (–1.497)	0.016 (0.389)	0.068 ^{**} (2.061)	0.025 (0.098)	–0.011 (–0.259)	–0.008 (–0.143)	–0.058 (–1.508)		0.005 (0.32)	0.004 (0.41)	0.021 (0.98)	0.005 (0.46)	0.012 (1.08)
<i>Ch_Tagrowth</i>	0.006 (0.590)	0.001 (0.124)	–0.003 (–0.412)	0.014 (0.690)	–0.007 (–0.942)	0.004 (0.620)	–0.008 (–1.495)		–0.012 (–0.94)	–0.001 (–0.10)	0.05 (1.06)	0.001 (0.22)	–0.007 (–0.41)
<i>Ch_Logsales</i>	–0.010 (–1.330)	0.002 (0.212)	0.003 (0.794)	0.029 (0.542)	–0.021 (–1.020)	–0.005 (–0.549)	0.002 (0.236)		–0.162 (–1.39)	0.01 (0.14)	–0.535 ^{**} (–2.27)	–0.039 (–0.46)	–0.145 (–1.14)
<i>Ch_Profitability</i>	–0.134 [*] (–1.710)	0.028 (0.523)	0.018 (0.448)	–0.533 [*] (–1.972)	0.002 (0.025)	–0.088 (–1.349)	0.057 (0.894)		0.201 ^{***} (3.42)	0.037 (0.69)	–0.218 (–1.14)	–0.023 (–0.35)	0.559 ^{***} (5.45)
<i>Def</i>	0.391 ^{***} (7.282)	0.190 ^{***} (6.317)	0.153 ^{***} (3.951)	–0.155 ^{***} (–0.788)	0.063 (0.798)	0.735 ^{***} (12.952)	0.176 ^{***} (3.476)						
<i>Post</i>	–0.004 (–0.684)	0.002 (0.521)	0.000 (0.033)	–0.033 (–1.517)	0.006 (0.483)	–0.002 (–0.472)	0.006 [*] (1.814)						
<i>Post · Ch_Tangibility</i>	0.162 ^{**} (2.168)	0.108 (1.533)	–0.112 (–2.575)	0.238 (0.781)	0.024 (0.452)	0.159 [*] (1.900)	–0.066 (–0.995)		0.054 (0.47)	0.22 ^{**} (2.54)	0.214 (0.69)	–0.046 (–0.55)	0.225 (1.57)
<i>Post · Ch_Tagrowth</i>	–0.018 (–1.226)	–0.001 (–0.142)	0.006 (0.685)	–0.005 (–0.242)	0.002 (0.268)	–0.014 (–1.012)	0.017 [*] (1.751)		–0.017 (–0.84)	–0.007 (–0.57)	–0.007 (–0.30)	–0.011 (–0.79)	–0.031 (–1.48)
<i>Post · Ch_Logsales</i>	0.024 ^{**} (2.350)	–0.006 (–0.605)	–0.004 (–0.717)	–0.029 (–0.403)	0.031 (1.484)	0.013 (1.165)	–0.010 (–1.016)		0.03 [*] (1.89)	–0.002 (–0.14)	–0.06 (–0.86)	0.006 (0.49)	0.023 (1.12)
<i>Post · Ch_Profitability</i>	0.100 (1.212)	0.001 (0.016)	–0.025 (–0.570)	0.547 [*] (1.801)	–0.003 (–0.039)	0.076 (1.019)	–0.014 (–0.206)		0.099 (0.79)	0.026 (0.33)	0.55 [*] (2.09)	–0.011 (–0.10)	0.09 (0.66)
<i>Post · Def</i>	–0.003 (–0.043)	–0.033 (–0.627)	–0.079 [*] (–1.816)	0.387 [*] (1.857)	–0.061 (–0.772)	–0.116 (–1.278)	0.054 (0.664)		0.03 (0.33)	0.046 (0.62)	0.448 [*] (2.06)	–0.133 (–1.48)	–0.17 (–1.09)
<i>R</i> ²	0.373	0.189	0.149	0.097	–0.047	0.702	0.204						
<i>N</i>	683	683	683	89	89	683	683						

Table 6, Panel A shows the results of the main regression equation (5) for total sample firms. The coefficients on financing deficit (*Def*) for all regressions are significantly positive while conventional leverage factors do not show significant and consistent coefficients. For incremental effect of enforcement action, the coefficients on interaction term (*Post* · *Def*) show very similar patterns documented in Table 4. This evidence indicates that financing deficit variable (*Def*) is predominant determinant of financing decision.

Panel B, Panel C, and Panel D of Table 6 are the same analyses using subsamples. The results are almost the same as the results without conventional leverage factors, which are presented in Table 5. Just minor changes are found such as lower significances and smaller magnitudes of coefficients.

VI. Conclusions

This paper investigates whether the firms change their financing choice among alternative sources of financing such as bank debt, non-bank private debt, bond debt, and equity financing after they are detected by the FSS for violating GAAP. Although prior research finds that stock market significantly and negative penalize when they find financial misstatement, there is little evidence on debt market reactions to these events. To fill this gap, I investigate the association between the revelation of GAAP violation and subsequent change in the financing decisions including both equity and debt markets. I find that the enforcement actions affect the choice of external financing sources and have differential impact depending on listing status. The results of KSE-listed firms are contrary to those of KSQ-listed firms. For KSE-listed firms, debt financing becomes a more important funding source than equity financing and bank debt is issued more than non-bank debt. In contrast, KSQ-listed firms increase equity financing and decrease debt financing. In addition, they reduce bank debt after the enforcement action. For unlisted firms, they are not affected by the detections of GAAP violation. Overall, this evidence suggests that accounting enforcement action is important information to capital market participants and they interpret this information differentially according to firm's listing status.

This paper makes several contributions to the literature examining the effects of accounting enforcement actions by Financial Supervisory Service (FSS). First, this study provides evidence that enforcement actions affect the financing decisions of GAAP violators. This evidence is important because the changes in financing decisions mean that enforcement actions are effective

in providing information about the quality of financial reporting of GAAP violators to capital markets. Second, this paper finds evidence that the effects of enforcement actions are different across listing status of GAAP violators. The evidence expands the findings from prior studies which mainly focus on KSE-listed firms. Third, this study investigates various debt financing sources which have not been addressed in prior studies so far. Lastly, this study uses difference-in-difference approach to test for statistical difference between financing sources. In addition, this study also contributes to finance literature because accounting enforcement actions are dynamic setting where information asymmetry problems increase. Most of prior studies which investigate capital structure and/or financing decisions focus on cross-sectional approach by using static models.

This study also has some limitations. First, the small sample potentially limits the general inferences from my results to more subtle cases of earnings management. Second, the results of the paper are exposed to correlated omitted variables problem. In reality, there are a variety of factors affecting corporate financing activities. However, I assume that those factors do not change during the sample period. Third, the results can be different when the analyses are performed in the sub-samples based on the degree of the enforcement actions by regulator. Lastly, this paper does not predict and explain thoroughly why the change in financing decisions of GAAP violators is different across listing status. Listing status includes a lot of factors such as firm characteristics, investor characteristics, and regulations.

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회계감리지적과 기업의 재무의사결정*

박경호**

<요 약>

본 연구는 기업회계기준을 위반한 기업들에게 부과되는 회계감리지적들이 기업들로 하여금 부채·자본 조달 정책을 바꾸도록 유도하는가 여부, 그리고 부채를 이용한 자금조달에 있어서도 부채 조달의 원천과 부채의 만기를 바꾸도록 유도하는가를 분석하였다. 또한 기업회계기준 위반의 특성과 위반사실의 공시에 대한 기업의 반응이 기업이 속한 상장시장에 따라 다를 수 있을 가능성을 검증하였다. 실증분석 결과, 회계감리지적은 회계기준을 위반한 기업들의 외부자금 조달수단과 원천을 변경하도록 하는 효과가 있는 것으로 나타났다. 전체 표본을 이용한 분석에서는 금융감독원으로부터 감리지적을 받은 이후에 부채시장보다 자본시장을 이용한 자금조달을 늘리는 것으로 나타났다. 부채시장을 이용한 자금조달의 감소는 회사채를 이용한 자금조달의 감소에 발생하는 것이 아니라 주로 은행을 통한 사적 부채조달의 감소로 인해 발생한 것으로 파악되었다. 그러나 부채를 이용한 자금조달에서 부채의 만기와 관련된 자금조달 정책에서는 변화가 발생하지 않았고, 은행과 비은행 금융기관에서의 부채 조달정책에서도 변화를 발견하지 못하였다. 기업을 소속된 상장시장별로 구분하여 행한 하위표본 분석에서는 감리지적이 기업의 자금조달정책에 미치는 영향이 소속된 상장시장별로 다르게 나타나는 것이 발견되었다. 코스피 시장에 소속된 기업들을 대상으로 한 분석에서는 전체표본을 이용한 분석결과와 달리, 부채를 이용한 자금조달이 증가하고, 상대적으로 주식발행을 통한 자금조달은 감소하는 것으로 나타났다. 또한 부채를 통한 자금조달의 증가는 은행과 회사채를 이용하는 두 정책 모두에서 발견되었다. 코스닥 시장에 소속된 기업들을 대상으로 한 분석에서는 코스피 시장의 결과와 반대로, 주식발행을 이용한 자금조달이 오히려 증가하고 부채를 이용한 자금조달을 감소하는 것으로 나타났으며, 부채를 이용한 자금조달의 감소는 주로 은행과 같은 사적 부채 조달원천으로부터의 자금조달 감소 때문인 것으로 파악되었다. 코스닥 시장에 소속된 기업을 이용한 분석의 결과는 전체표본을 이용한 분석결과와 유사하며 이는 코스닥 시장에 소속된 기업들의 자금조달 정책 변경이 코스피 시장에 소속된 기업들의 자금조달 정책 변경보다 민감하기 때문인 것으로 추정된다. 추가적으로 실시한 비상장기업에 대한 분석에서는 감리지적이 기업의 자금조달 정책에 영향을 미친다는 증거를 발견하지 못하였다. 이와 같은 결과들은 기업규모, 자산의 질, 성장성, 수익성과 같이 전통적으로 기업의 레버리지 결정에 영향을 주는 요소들을 통제하여도 그대로 유지되었다. 실증분석 결과, 회계감리지적은 유효하고 실제로 자본시장의 참여자들이 감리지적에 대하여 유의하게 대응하는 것으로 나타났지만, 이 효과의 방향성에 대해서는 기업이 소속된 상장시장별로 감리지적의 효과가 다른 방향으로 나타났기 때문에 일관된 결론을 내릴 수는 없었다. 이와 같은 결과가 시사하는 바는 감리지적의 효과를 분석함에 있어 상장시장 구분이 중요하며, 상장시장별 차이의 본질이 어떤 요소들에서 발생하는가에 대한 향후 연구가 진행되어야 함을 시사한다.

<주제어> 기업회계기준 위반, 회계감리지적, 경제적 효과, 자금조달 의사결정, 상장시장

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Appendix I > Variables definition

Variable	Data Sources	Description
$Logta_t$	Balance Sheet	Proxy for size. The natural log of total assets in year t.
$Sloan_t$	Cash Flow Statement	Net short-term loan issuance in year t. Short-term loan issuance minus short-term loan reduction.
$Lloan_t$	Cash Flow Statement	Net long-term loan issuance in year t. Long-term loan issuance minus long-term loan reduction.
$Bond_t$	Cash Flow Statement	Net long-term bond issuance in year t. Long-term bond issuance minus long-term bond reduction.
$Debt_t$	Cash Flow Statement	Net debt issuance in year t. $Debt_t = Sloan_t + Lloan_t + Bond_t$.
$Equity_t$	Cash Flow Statement	Net equity issuance in year t. This variable includes the issuance of stock warrants and sales of treasury stocks as well as sale of common stock.
$Bank_t$	Annual Report	Net bank loan issuance in year t. Bank loan issuance minus bank loan reduction.
Nbp_t	Annual Report	Net non-bank private loan issuance in year t. Loan issuance from non-bank private institution minus reduction of loan from non-bank private institution.
Div_t	Cash Flow Statement	The sum of cash dividends and stock repurchase in year t.
$Invest_t$	Cash Flow Statement	Net investment in year t. Increase in investments - sale of PPE - sale of investment.
Ch_Wc_t	Cash Flow Statement	Change in working capital in year t.
Cf_t	Cash Flow Statement	Cash flows after interest and taxes in year t.
R_t	Cash Flow Statement	Current portion of the long-term debt in year t.
Def_t	Cash Flow Statement	Financing deficits in year t. $Def_t = Div_t + Invest_t + Ch_Wc_t - Cf_t + R_t$.
$Tangibility_t$	Balance Sheet	Tangible assets divided by total assets.
$Tagrowth_t$	Balance Sheet	Total assets growth = (Total assets _t - Total assets _{t-1}) / Total assets _{t-1} .
$Logsales_t$	Income Statement	The natural log of sales in year t.
$Profitability_t$	Income Statement	Net income divided by average total assets.
$Ch_Tangibility_t$	Balance Sheet	Change in tangibility from year t-1 to year t.
$Ch_Tagrowth_t$	Income Statement	Change in total assets growth from year t-1 to year t.
$Ch_Logsales_t$	Balance Sheet	Change in the natural log of sales from year t-1 to year t.
$Ch_Profitability_t$	Income Statement	Change in profitability from year t-1 to year t.

The variables related to financial funding sources ($Sloan$, $Lloan$, $Bond$, $Debt$, $Equity$, $Bank$, Nbp) and financing deficits (Def , Div , $Invest$, Ch_Wc , $Ch_Tagrowth$) are scaled by average total assets and truncated at 1% in both tails of the distribution.

Appendix II> Tests on differences in variables between before and after enforcement actions

Variable	Before Enforcement		After Enforcement		t-test		Wilcoxon test ¹⁾	
	Mean	Median	Mean	Median	Diff	Pr > t	Pr > Z	
<i>Logta</i>	24.61	24.243	25.253	24.62	-0.643	(0.00)	(0.00)	
<i>Stloan</i>	0.021	0.012	0.007	0.000	0.015	(0.00)	(0.00)	
<i>Ltloan</i>	0.024	0.002	0.013	0.000	0.011	(0.00)	(0.00)	
<i>Bond</i>	0.038	0.000	0.025	0.000	0.012	(0.00)	(0.00)	
<i>Debt</i>	0.083	0.066	0.045	0.024	0.038	(0.00)	(0.00)	
<i>Equity</i>	0.054	0.000	0.047	0.000	0.007	(0.23)	(0.00)	
<i>Bank</i>	0.004	0.000	0.004	0.000	0.000	(0.99)	(0.42)	
<i>Nbp</i>	-0.008	0.000	-0.003	0.000	-0.004	(0.04)	(0.00)	
<i>Div</i>	0.005	0.000	0.006	0.000	-0.001	(0.02)	(0.41)	
<i>Invest</i>	0.107	0.078	0.069	0.052	0.037	(0.00)	(0.00)	
<i>Ch_Wc</i>	0.063	0.046	0.034	0.023	0.029	(0.00)	(0.00)	
<i>Cf</i>	0.071	0.069	0.05	0.049	0.021	(0.00)	(0.00)	
<i>R</i>	0.038	0.019	0.032	0.009	0.006	(0.01)	(0.00)	
<i>Def</i>	0.141	0.100	0.091	0.046	0.050	(0.00)	(0.00)	
<i>Ch_Tangibility</i>	-0.002	-0.006	0.000	-0.003	-0.002	(0.25)	(0.01)	
<i>Ch_Tagrowth</i>	-0.103	-0.024	-0.021	0.007	-0.082	(0.00)	(0.00)	
<i>Ch_Logsales</i>	0.144	0.120	0.003	0.045	0.141	(0.57)	(0.20)	
<i>Ch_Profitability</i>	-0.014	-0.003	-0.013	-0.007	-0.001	(0.88)	(0.92)	

1) Wilcoxon – Mann – Whitney test (a non – parametric analog to the independent samples t – test)