

# Determinants and Market Reaction of Assets Impairment in Taiwan\*

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**ABSTRACT:** On July 1, 2004, Taiwan's Financial Accounting Standards Committee of the Accounting Research and Development Foundation issued SFAS No. 35, *Accounting for the Impairment of Assets*. This accounting standard came effective in the financial year ending after December 31, 2005, with early application encouraged. Taiwan's SFAS No. 35 provides for accounting for assets impairment conservatively by recognizing impairment loss to reflect the market value of long-lived assets but not the unrealized gains of assets. SFAS No. 35 will affect accounting earnings, carrying amounts of long-lived assets, and, supposedly, the stock prices for listed firms in Taiwan. This paper examines determinants of assets impairment and its market reaction. First, we examine the determinants of early adoption of Taiwan's SFAS No. 35 for firms listed in the *Taiwan Stock Exchange* and the *GreTai Securities Market*. We investigate the motivation of adoption of assets impairment accounting in reporting purposes and operational purposes per literature. Our empirical results show that determinants for early adopters of Taiwan's SFAS No. 35 are the taking a "big bath" purpose (the reporting motivation) and factors reflecting the accrual-based and cashflow-based recoverability of long-lived assets, such as changes in sales and changes in operational cash flows (operational motivations). Secondly, we examine factors affecting the "amounts" of assets impairment in both reporting and operational perspectives. Our empirical results show the following: (1) For early adopters, the amounts of assets impairments are associated with only reporting motivations (the taking a big-bath purpose, the income smoothing purpose, and the changes in top management). (2) For non-early adopters, the amounts of assets impairment are associated with, not only the reporting perspective (the income smoothing purpose, the changes in top management), but also the firms' operational perspective (such as stock returns and sales

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growth). When analyzing the “amounts” of assets impairment losses for five different types of assets (long-term investments, fixed assets, identifiable intangible assets, goodwill, and other assets), we find that impairment loss for goodwill is less likely to be associated with reporting motivation, probably because restoration of previously recognized impairment loss for goodwill is prohibited under SAFS No. 35. Finally, we examine market reactions to announcements of assets impairment in Taiwan. Our empirical tests of the shareholder wealth effects of impairment announcements reveal that, (1) the stock market reacts significantly and negatively to fourth-quarter impairment losses, but not to fourth-quarter unexpected earnings for early adopters of Taiwan’s SFAS No. 35; and (2) the stock market does not react significantly to first-quarter impairment losses, but does react thusly to first-quarter unexpected earnings for all listed firms. The latter is consistent with Francis *et al.* (1996). In addition to Francis’s explanations, we further interpret this result in terms of the same reporting dates for annual report and first-quarter report in Taiwan. Unlike the U.S. Securities Exchange Commission, which requires public firms to submit their 10-K on May 31 and their first-quarter 10-Q on April 15, Taiwan’s Securities and Future Bureau (SFB) requires that annual report and first-quarter report be submitted on the same day (April 30) by public firms in Taiwan. Simultaneous announcements of annual report and first-quarter report may further explain our empirical results: the unexpected fourth-quarter earnings reflected in the previous year’s annual report has no the information content at the end of the first quarter since information may have already been reflected in the beginning of the year. However, as expected, unexpected first-quarter earnings do have information content when they are announced. For assets impairment, on the contrary, investors react to the CPA-audited impairment losses in the annual report while no statistical evidence shows that investors react to CPA-reviewed first-quarter impairment losses.

**Keywords:** Assets Impairment, Taiwan’s SFAS No. 35, Determinants, Market Reaction

## I. INTRODUCTION

In the history of Taiwan’s Statements of Financial Accounting Standards (hereinafter *SFAS*), no standard like Taiwan’s SFAS No. 35 (2004), *Accounting for the Impairment of Assets*, caused such strong concern in the market and financial press, except SFAS No.18, *Accounting for Pension*. As early as December 1995, the U.S. Financial Accounting Standards Board (hereinafter *FASB*) issued the U.S. SFAS 121, *Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed of*. This statement requires that, if an asset is impaired on the financial report date, an enterprise must recognize the impairment loss in order to avoid overstating the value of the asset. In addition to recording historical costs when acquisition and periodically depreciating or amortizing the original costs, long-lived assets are required to be carried at the lower of their carrying values or recoverable values. In January of 2001,

the International Accounting Standards Board (hereinafter IASB) also released International Accounting Statement No. 36, *Impairment of Assets*, for the accounting of impairment losses of long-lived assets. In addition, the U. S. FASB released U. S. SFAS 142, *Goodwill and Other Intangible Assets*, to regulate the accounting of goodwill and other intangible assets when acquired and after acquisitions, including their impairments, in July 2001.

For a long time, Taiwan's Generally Accepted Accounting Principles required the recording of long-lived assets by their historical costs less accumulated depreciations (or amortizations). However, when increases in the consumer price index accumulate to 25% compared to the recorded costs, long-lived assets can be recognized by the current value to reflect assets appreciation. Nevertheless, before SFAS No. 35, Taiwan's accounting standards for long-lived assets had never considered assets impairment. Long-lived assets could only be written-up, but never written-down, causing an imbalance phenomenon in the accounting records for long-lived assets. This limited accounting for long-lived assets seriously reduced the relevance of the financial reports. And, the carrying amounts of long-lived assets could not fully reflect value changes caused by progress in technology and effect of the business cycle. This accounting treatment had long been criticized by accounting and finance circles in Taiwan. In order to match the International Accounting Standards and to improve the transparency of financial statements, Taiwan's Financial Accounting Standards Committee of the Accounting Research and Development Foundation of the Republic of China issued SFAS No. 35 *Accounting for the Impairment of Assets* on July 1, 2004. This new accounting standard was effective for financial statements ending on and after December 31, 2005, with early adoption encouraged. Taiwan's SFAS No. 35 is based on the International Accounting Standard No. 36 and partly refers to related U. S. accounting standards, especially U.S. SFAS No. 121 and SFAS No. 142. The new accounting requires that an enterprise conduct an "impairment test" for the values of long-lived assets (including long-term equity investments, fixed assets, recognizable intangible assets, goodwill, and other assets) on the balance sheet date. If the carrying amount of a long-lived asset is higher than its "recoverable amount", then an impairment loss must be recognized on the income statement instantly. Later on, if there were any indications that previously recognized impairment losses did not exist, the restoration of that loss would be permitted on that balance sheet date. (However, restoration of previously recognized impairment losses for goodwill is prohibited under Taiwan's SFAS No. 35 because subsequent increases in the recoverable amounts of goodwill may be partly from goodwill generated internally in the enterprise, instead of the disappearance of the cause of asset impairments that existed previously. In accounting theory, a firm should not record internally generated goodwill. Therefore, the restoration of impairment loss for goodwill is not allowed.) Through recognition and restoration of impairment loss for long-lived assets, Taiwan's SFAS No. 35 *conservatively* reflects the value of long-lived assets since assets appreciation is not discussed in Taiwan's SFAS No. 35.

On August 26, 2004, Wistron,<sup>1</sup> a member of the Taiwan's Acer group, announced in a press conference that she would recognize an impairment loss of NT\$5.5 billion for her

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<sup>1</sup> Economic Daily, Commercial Times, DigiTimes, August 27, 2004.

long-term investment in Aopen accounted by the equity method, and an impairment loss of NT\$10.51 by revaluating the long-lived assets in Wistron Philippines (equivalently NT\$1.88 impairment losses per share in total) in her 2004 semiannual report, according to the spirit of SFAS No. 35. Wistron's annual earnings forecast thus decreased from a profit of NT\$8.5 billion to a loss of NT\$8 billion. (Equivalently, her EPS would be reduced from NT\$1.89 to -NT\$1.05). This information caused panic in the market, and Wistron's stock price slumped by 13% within two days. In the beginning of 2005, Taiwan's Yageo officially declared she would adopt SFAS No. 35 early in her 2004 annual report in a press conference on February 23, 2005. Yageo "cleared the deck" by recognizing impairment losses of NT\$120 billion (equivalent to NT\$5.23) for long-lived assets under SFAS No. 35 at the end of fourth quarter in 2004. Most impairment losses were from goodwill revaluation. These impairment losses corroded half of Yageo's contributed capital and made Yageo's EPS drop from NT\$0.23 to -NT\$5<sup>2</sup>. On the next day, Yageo's stock price fell dramatically. Subsequently, Taiwan's Chinalife announced the early adoption of SFAS No. 35 in the fourth quarter of 2004 on March 28, 2005. Chinalife claimed she would recognize an impairment loss of NT\$37.93 billion (NT\$4.78 per share) from her long-term investments. The Chinalife's annual profit was turned to a loss. (Equivalently, her EPS was dropped from NT\$0.66 to -NT\$4.12). This news resulted in Chinalife's stock price slump and lock to be traded due to a decrease in price by more than 7% on the next day. This event negatively affected all stock prices of listed financial institutions in Taiwan, and selling pressure on the stock market was intense on that day. The Taiwan Stock Exchange Index declined 87 points to 5961 points on March 29, 2005. On March 2005, the average U. S. Dow Jones stock index was up. The downward adjustment in Taiwan Stock Exchange Index around the end of March 2005 seemed to be reflecting the negative impact of SFAS No. 35.

From the beginning of 2005 on, Taiwan's stock market was under the haze of SFAS No. 35. The "January effect" of Taiwan's stock market didn't show up in 2005. Worrying that implementing SFAS No. 35 would reduce firms' net worth and negatively impact stock price, many firms explicitly hoped Taiwan government would rescind this accounting standard. Such a hope was not realized, however. On April 1, 2005, Taiwan's Executive Yuan claimed that SFAS No. 35 (effective January 1, 2005) and the new *Statute of Labor Pension* (effective July 1, 2005) were the two most influential regulations affecting Taiwan's economic performance in 2005. And, she directed the Ministries of Finance and Economic affairs to take special notice and respond prudently<sup>3</sup>. On April 4, 2005, Taiwan's Premier held a Yuan meeting with his cabinet members to discuss Taiwan firms' complaints about SFAS No. 35 in regard to its negative impact on firms' earnings and stock price. The meeting concluded that although SFAS No. 35 might negatively affect stock market in the short term, its positive effect would show up in the long term. The reform of financial regulations in Taiwan could not halt. Since SFAS No. 35 came effective in January 2005, its impact on 2004 annual report (to be disclosed on April 30, 2005) would not be substantial. Ten days later, the Financial Supervisory Commission of Executive Yuan (thereafter *FSC*) made a special report to the Finance Committee of the

<sup>2</sup> *Economic Daily*, February 23, 2005; *Wealth Magazine*, Vol. 278, May 2005.

<sup>3</sup> News Report Center of the Chinese Television System, April, 1, 2005, 12:46 p. m..

Legislative Yuan on the “stock market reaction to the new SFAS No. 35” on April 13, 2005. The FSC argued that the overall effects of SFAS No. 35 were not substantial. However, some legislators did not agree. It was estimated that government-owned firms, such as Taiwan Sugar Co., Chinese Petroleum Co., Taiwan Power Co., etc., would recognize approximately NT\$500 billion in assets impairment in total, which would greatly affect earnings return to the National Treasury. All non-operational funds under respective ministries, such as the Water Resource Fund, etc., would also recognize about NT\$300 billion assets impairment. Furthermore, allowing firms themselves to determine the adoption timing and the assets being revaluated by appraisers, SFAS No. 35 left a lot of loopholes for insider trading<sup>4</sup>. Facing tremendous opposition from industrial and commercial circles, the Business Services of the Ministry of Economic Affairs finally passed a resolution on April 23, 2005 allowing firms with contributed capital under NT 30 million a 2-year grace period to delay applying SFAS No. 35 until the end of 2007.

Undoubtedly, the accounting treatment of assets impairment under SFAS No. 35 will affect a firm's net worth and its current earnings. However, estimating the amount of impairment loss will become a challenge to the credibility of a firm's management and financial statements. SFAS No. 35 defines the impairment loss of an asset as the difference between its carrying amount and the recoverable value if the former is larger than the latter. The recoverable value of an asset is its “value in use” or its “net fair value”, whichever is larger where the “value in use” of an asset is determined by discounting future cash flows from the asset. Therefore, management has to estimate a discount rate and forecast future cash flows from a long-lived asset in order to determine the “value in use”. In addition, the fair value of an asset depends on the liquidity of that asset. If fair market value is unavailable, estimating the fair value of a long-lived asset shall be subject to the judgment of managers or appraisers. Hence, determining the impairment loss of an asset under SFAS No. 35 cannot escape the manager's discretion.

Taiwan's SFAS No. 35 was issued on July 1, 2004 and came effective for financial statements ending on and after December 31, 2005, with early adoption encouraged. Thereafter, firms in Taiwan could voluntarily adopt the new SFAS No. 35 early in the third quarter or the fourth quarter of 2004, or face mandatory adoption of this standard in the first quarter of 2005. Managers have full discretion on the adoption time of SFAS No. 35. Our first research issue in this study is to investigate the determinants of early adoption of SFAS No. 35 for listed firms in Taiwan. Previous studies on the adoption timing of U. S. SFAS No. 121 revealed that the determinants can be classified into two categories: management's “reporting motivations” and a firm's “operational factors”. Management's reporting motivations reflect several scenarios. If a firm has unexpectedly high earnings performance, its management has incentive to recognize a large amount of impairment loss to smooth out earnings (the “income-smoothing” purpose); if a firm has unexpectedly poor earnings performance, management has incentive to clear the dirty deck of impaired assets to improve investors' perceptions of the future financial performance of the firm (so-called “taking a big bath” purpose); when a firm changes its management, new managers may exercise greater scrutiny over existing assets and want to clean up assets impairments. Furthermore, some firms may determine the timing of

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<sup>4</sup> *Economic Daily*, April 14, 2005.

adopting SFAS No. 35 due to their respective “operational factors”.

In judging the impairment of long-lived assets, SFAS No. 35 unequivocally requires management to examine external and internal information (such as technology, market, economic and legal environment or the market of the assets) to see whether significant adverse changes affecting the fair value of long-lived assets occur. Therefore, based on management’s “reporting motivation” and a firm’s “operational factors”, managers may exploit the discretion allowed under SFAS No. 35 in determining the amount of impairment losses for long-lived assets. Our second research issue is to explore the determinants of the size of assets impairment.

Finally, we examine market reactions to the announcement of assets impairment losses. Previous studies suggest that impairment announcements may have any of three different information contents: The first one is that impairment information reflects a decrease in economic values of company assets. Under this viewpoint, a negative market reaction to this impairment announcement is expected. The second one is that impairment information is a signal of changes in strategy to improve future performance. A positive market reaction to this impairment announcement is expected. The third one is that impairment information may reflect a firm’s willingness and ability to manage earnings opportunistically. It is not clear whether investors react positively or negatively to this information.

This study investigates determinants of the timing and the amount of assets impairment decisions for listed firms in Taiwan. We also examine market reaction to impairment announcements. Our paper is organized as follows: Section two summarizes prior studies on assets impairment. Section three describes our hypotheses and research design. Section four presents sample selection, descriptive statistics and empirical results. Section five includes sensitivity tests. Section six presents our conclusions and suggestions.

## II. LITERATURE REVIEW

Before the U.S. SFAS No. 121 was issued in December 1995, there was no mandatory accounting requirement for firms to reduce the carrying value of a long-lived asset that had become impaired. During this period of time, the only related FASB standard was the SFAS No. 5, *Accounting for Contingencies* (1975), which provided some general guidelines by requiring firms to recognize impairment loss only if an asset might be impaired and the amount of loss could be reasonably estimated. However, the discretionary flexibility of SFAS No.5 resulted in various accounting treatments and reportings of assets impairments. Before the issuance of SFAS No. 121, the U.S. GAAP, in fact, allowed managers a lot of discretion in deciding when to recognize a writedown and how much to write down the assets. And consequently, assets impairment decisions became a matter of managers’ discretion.

Most studies done in the U.S. on assets writedowns under SFAS No. 5 were information-content research. However, the empirical results were inconsistent as to whether assets writedowns constituted good or bad news. Some studies argued that firms’ recognizing assets impairment was good news, since it conveyed a signal of possible improvement in future performances. For example, Strong and Meyer (1987) examined the effect of announcements of asset writedowns under SFAS No. 5 on security returns.

They found negative average CARs around the impairment announcements date. However, the negative returns were reversed in sixty days after the impairment announcement date. Therefore, they endorsed the argument that recognizing assets impairment conveyed signals of improving future performance. Rees, the Gill and Gore (1996) held the same position. Examining the relationship between assets writedowns under SFAS No. 5 and abnormal accruals, Rees et al. found that firms recognized significantly more negative abnormal accruals in the years of assets writedowns, and these accruals were not reversed in subsequent years. They argued that the writedowns and concurrent discretionary accruals were appropriate responses of managers to a changing economic environment, rather than managers' opportunistic earnings management. Managers could use their discretion to signal value-relevance information to investors so that assets writedowns helped in valuing a firm.

However, some argued that recognizing assets impairment reflected real damage to the firm's earning power. Elliott and Shaw (1988) found that U.S. firms usually recognized assets writedowns under SFAS No. 5 in audited annual reports, instead of in interim reports. They showed that assets writedowns would cause long-term decreases in stock returns. Their empirical results did not support the argument that recognizing assets impairment conveyed a signal of improving future performance. Francis, Hanna, and Vincent (1996) obtained similar results. Studying firms' characteristics for assets writedowns decisions and market reaction to writedowns under SFAS No. 5, Francis et al. discovered that assets writedowns were positively related to changes in CEOs. They also found negative market reaction to assets writedown announcements. Bartov, Lindah, and Ricks (1998) found significantly negative stock returns in years after a firm recognized assets writedowns under SFAS No. 5. They argued that the market might not fully understand the economic consequences of assets impairment.

Nevertheless, some studies documented no significant market reaction to assets writedown under SFAS No. 5. Zucca and Campbell (1992) argued that recognizing assets impairment was, for a firm, managing earnings (e.g., taking "big baths" or smoothing income). They found no significant market reaction to assets writedown announcements under SFAS No. 5, since investors could see through manipulations. Hogan and Jeter (1998) also found no significant relationship between CAR and assets writedowns under SFAS No. 5. They argued that asset writedowns might reflect changes in CEOs, rather than substantial impairments in long-lived assets.

With respect to motivations to write down long-lived assets, Strong and Meyer (1987), Elliott and Shaw (1988), Zucca and Campbell (1992), Francis et al. (1996), Rees et al. (1996), Hogan and Jeter (1998) all found that firms' writedown decisions were generally associated with managers reporting motivations. Examining the motivation of revaluating long-lived assets for 72 Australian firms during the years 1981 through 1990, Easton, Eddy and Harris (1993) interviewed CFOs of these sample firms and found that assets revaluation showed very weak association with stock performance. Revaluation of long-lived assets was not done in a timely manner. Further, Easton and Eddey (1997) extended the Easton et al. (1993) study by including a recent period (1990~1993) when Australian firms most likely suffered assets impairment. Barth and Clinch (1998) also extended the Easton et al. (1993) study to examine the explanatory power of assets revaluations regarding stock price and two-years-ahead earnings forecasts. Both studies

concluded that assets revaluation for a firm generally was not done in a timely manner in general. Using U.S. data, Heflin and Warfield (1997) obtained similar results. They documented that American firms delayed recognizing assets writedowns for three years on average. They indicated managers recognizing assets writedowns aimed at managing earnings, instead of recording the real assets impairment. Managers tended to recognize assets writedowns in the years when earnings were really poor to “clear the deck” or in the years when earnings were extremely good to smooth reported earnings. Deng and Lev (1998) also documented that, after recognizing assets impairment, a firm’s returns on assets and returns on equity tend to increase in the next year.

After U.S. SFAS No. 121 was issued in December 1995, few studies examined the impact of SFAS No. 121. Comprix (2000) documented that firms recognizing assets impairment under SFAS No.121 would make the book values of their long-lived assets closer to market values. Also, investors would value a firm lower if it recognized assets impairment. In addition, the records of earnings performance and the history of assets impairment could influence investors’ valuation of the firm. Riedl (2004) found the assets writedowns were highly related with economic factors before SFAS No.121. However, after SFAS No. 121, firms recognizing assets impairment aimed at taking a “big bath” to manage earnings, reflecting managers’ opportunistic reporting behavior rather than providing private information to reduce information asymmetry. Consequently, Riedl argued that the quality of financial reporting after SFAS No.121 decreased.

In Taiwan, there was no accounting standard for assets impairment before Taiwan’s SFAS No. 35 was issued in 2004, nor was there any academic study relating to assets writedowns under Taiwan’s SFAS No. 9, *Accounting for Contingencies and Subsequent Events* (1986), to the best of our knowledge. Due to expected severe impacts of Taiwan’s SFAS No. 35 on financial statements and stock prices, we investigate the determinants of the timing and amount of assets impairment for listed firms in Taiwan. In addition, we examine market reaction to impairments announcements in Taiwan in this study.

### III. HYPOTHESES DEVELOPMENT

We first investigate the determinants of adoption timing of SFAS No. 35 for listed firms in Taiwan. Taiwan’s SFAS No. 35 was promulgated on July 1, 2004 and was effective on January 1, 2005. However, early adoption was allowed. Therefore, managers could use reporting flexibility in determining whether to adopt SFAS No. 35 on time in the first quarter of 2005 or earlier in 1994. The adoption time of SFAS No. 35 is at the managers’ discretion.

Zucca and Campbell (1992) argued that recognizing assets writedowns under SFAS No. 5 was one of the means of earnings management. Some managers managed earnings for taking “big baths,” others for income smoothing. Riedl (2004) also found that, after SFAS No.121 was issued, the main motivation for recognizing assets impairment losses was for taking “big baths” for improving the future profitability of the firm. Francis et al. (1996) documented that in the years of changing CEOs, recognizing assets writedowns was very common. This implies the new CEO intends to clean up losses that occurred in the tenures of preceding CEOs to make a fresh start. This is literature evidence that recognizing assets impairment losses is associated with managers’ reporting motivation.



Furthermore, SFAS No. 35 requires that, if there is any indication that an asset may be impaired, managers should estimate the recoverable amount of impaired long-lived assets in order to make sure the long-lived assets are impaired. Such “indications” include simultaneously internal and external information. Therefore, firms adopting SFAS No. 35 early are driven, not only by managers’ reporting motivation, but also by the firms’ operational factors. Thus, our first hypothesis is proposed as follows :

**Hypothesis 1:** The adoption timing of SFAS No. 35 is associated with both management’s “reporting motivations” and a firm’s “operation factors.”

The proxies and predicated signs of “reporting motivations” and “operational factors” are described in the next section.

Secondly, we explore the amount of assets impairment for listed firms in Taiwan. Although Taiwan’s SFAS No. 35 provides some guidance on the evaluation, measurement, recognition of impairment loss, this statement could not totally eliminate management’s discretion on the timing and amount of assets impairment. In addition, before assets impairment loss is determined, management is required by SFAS No. 35 to consider not only firm’s internal information, but also external information outside the firm, such as significant unfavorable current and future changes in industry technology, market, economic, legal environments, and the market to which the asset belongs. Therefore, the amount of assets impairment may be affected by both management’s “reporting motivations” and a firm’s “operational factors.” Accordingly, our second hypothesis is proposed as follows:

**Hypothesis 2:** The amount of assets impairment decision is associated with management’s “reporting motivations” and a firm’s “operational factors.”

The proxies and expected signs of “reporting motivations” and “operational factors” are also described in the next section.

Finally, we examine the information content of assets impairment for Taiwan’s listed firms. Francis et al. (1996) indicated that announcement of assets writedowns might be interpreted by investors in three different ways. First, it might signal a real decrease in the economic value of assets so that negative market reaction to the impairment announcement would occur. Second, it might signal changes in management strategy and improvement in future profitability so that positive market reaction to the impairment announcement would happen. Third, it might signal management’s manipulation of earnings so that market would not react to the assets impairment announcement. Previous studies of market reaction to assets impairment were inconsistent. Strong & Meyers (1987), Rees et al. (1996) found significantly positive market reaction to the assets writedowns announcements. On the contrary, Elliot and Shaw (1988), Francis et al. (1996) documented significantly negative market reaction to the assets writedowns. Nevertheless, Zucca and Campbell (1992), Hogan and Jeter (1998) found insignificant market reaction to assets writedowns.

Most stock transactions in Taiwan’s stock market are made by individual investors.

Individual investors accounted for 77.57%<sup>5</sup> of total trading volume in the Taiwan Stock Exchange in 2004. Institutional investors that have ability to hire accounting and finance professionals to examine financial statements only accounted for 22.43% of total trading volume. Therefore, we do not expect that the current Taiwan stock market as a whole could fully understand financial reports. As indicated in Section I, Taiwan's stock market reactions to early adopters of SFAS No. 35 were extremely negative, causing serious concerns from Taiwan's Executive Yuan, Legislative Yuan, Financial Supervisory Commission and the financial press. Therefore, we expect that investors will react negatively to the assets impairment information for firms early adopting SFAS No. 35 and recognize assets impairment loss in 2004 annual reports (which are audited by external auditors). However, since assets impairment involves management judgment and estimation, unaudited quarterly financial statements receive less credibility. Accordingly, the negative market reaction to the assets impairment loss in the unaudited 2005 first-quarter financial report would be reduced. Thus, our third hypothesis is proposed as follows:

**Hypothesis 3:** Taiwan's stock market would negatively respond to assets impairment losses disclosed in the 2004 annual report (which was audited by external auditors), and in the first quarter of 2005 (which was not audited by external auditors) to a lesser extent.

#### IV. RESEARCH DESIGN

##### **Determinants of the Timing and Amount of Assets Impairment Decision**

Taiwan's SFAS No. 35 was issued on July 1, 2004, and effective for financial statements ending on and after December 31, 2005, with early adoption allowed. That is, managers could early adopt SFAS No. 35 in the second, third, or fourth quarter of 2004, or adopt it in the first quarter of 2005. Elliott and Shaw (1988) found that U.S. firms usually recognized assets impairment losses in the audited annual report. We also find that Taiwan's listed firms chose early adoption of SFAS No. 35 in the 2004 annual report (fourth quarter), rather than in the second or third quarter of 2004.

We investigate first the determinants of adoption timing of SFAS No. 35. Our experiment group consists of early adopters of SFAS No. 35 in the 2004 annual report for listed firms in Taiwan; the control group consists of firms matching our experiment group in terms of market value (size), industry, and recognizing impairment loss in the first quarter of 2005. Secondly, we explore the determinants of amount of assets impairment losses. Our experiment group thus consists of firms recognizing assets impairment losses in 2004 annual report or in the first quarter of 2005, while the control group consists of firms matching our experiment group in terms of market value (size), industry, and not recognizing impairment loss in the same periods. Finally, we examine information content of assets impairment for listed firms in Taiwan. The sample consists of listed

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<sup>5</sup> "Statistics of Investors Structure in terms of Trading Volume on TSEC Market," by Securities and Futures Bureau, Financial supervisory Commission, Executive Yuan, 2005.  
(<http://www.sfb.gov.tw/statistics/point/9507/t16.xls>)

firms in Taiwan with assets impairment disclosure.

We define assets impairment loss as the difference between the carrying amount of long-lived assets and its economic value (recoverable amount), including decrease in investment income resulting from impairment loss on long-term equity investments by the equity method. Impairment losses for five types of long-lived assets (that is, long-term equity investment, fixed assets, goodwill, identifiable intangible assets and other assets) are available from footnote of each firm's financial statements.

Logistics regression is employed to examine the adoption timing of SFAS No. 35 for listed firms in Taiwan in Hypothesis 1. We estimate a logistics regression as follows:

$$ADOPT_i = \alpha_0 + \alpha_1 BATH_i + \alpha_2 SMOOTH_i + \alpha_3 \Delta MGT_i + \alpha_4 FIN_i + \alpha_5 \Delta INDROA_i + \alpha_6 ELEC_i + \alpha_7 RET_i + \alpha_8 \Delta SALE_i + \alpha_9 \Delta OCF_i + \alpha_{10} MTB_i + \varepsilon_i \quad (1)$$

where,

$ADOPT_i$ : indicator variable, which equals 1 if firm  $i$  recognizes impairment loss in 2004 annual report, and 0 otherwise.

Hypothesis 2 explores the determinants of the amount of assets impairment. If a firm does not recognize assets impairment loss, the value of dependent variable (amount of impairment) is zero. Once assets impairment loss is recognized, the dependent variable will be a ratio scale. The dependent variable, therefore, is a truncated datum. Thus, we employ a tobit regression to explore the amount of assets impairment (Hypothesis 2). We estimate a tobit regression as follows:

$$WOTA_{it} = \alpha_0 + \alpha_1 BATH_{it} + \alpha_2 SMOOTH_{it} + \alpha_3 \Delta MGT_{it} + \alpha_4 FIN_{it} + \alpha_5 \Delta INDROA_{it} + \alpha_6 ELEC_{it} + \alpha_7 RET_{it} + \alpha_8 \Delta SALE_{it} + \alpha_9 \Delta OCF_{it} + \alpha_{10} MTB_{it} + \varepsilon_{it} \quad (2)$$

where,

$WOTA_{it}$  : firm  $i$ 's impairment loss<sup>6</sup> at quarter  $t$ , divided by firm  $i$ 's total assets

<sup>6</sup> The assets impairment losses under SFAS No. 35 may not be deductible from undistributed earnings that are subject to 10% surtax. The Tax Agency of the Ministry of Finance, R.O.C. announced that:

"SFAS No.35 Accounting for the impairment of assets requires that long-lived assets, such as fixed assets, identifiable intangible assets, goodwill, and long-term equity investment by equity method, should be valued in the lesser of carrying value and its recoverable amount. The difference between the recoverable amount and carrying value shall be recognized as impairment loss. If such impairment loss (except for goodwill) does not exist or is reduced in subsequent period, the firm should restore previously recognized impairment loss as income in that period." According to Article 66-9 of the income tax law, the 10% surtax on undistributed earnings is based on taxable income. In calculating the undistributed earnings, gain or loss derived from the time difference between financial accounting and tax regulation would not be deductible or addable. Hence, unrealized impairment loss or restoring previously recognized impairment loss under SFAS No.35 belongs to the timing differences between financial accounting and tax regulation. Accordingly, impairment loss and its restored amount would not be a deduction or an addition in calculating the 10% surtax of undistributed earnings. Impairment loss under SFAS No.35

- at the end of quarter  $t-1$ .
- $BATH_{it}$  : proxy for taking big baths. If  $\Delta E_{it}$ <sup>7</sup> < median of the “unexpected negative earnings”<sup>8</sup>, then  $BATH_{it} = \Delta E_{it}$ ; otherwise,  $BATH_{it} = 0$ .<sup>9</sup>
- $SMOOTH_{it}$  : proxy for income-smoothing. If  $\Delta E_{it}$  > median of the “unexpected negative earnings”<sup>10</sup>, then  $SMOOTH_{it} = \Delta E_{it}$ ; otherwise,  $SMOOTH_{it} = 0$ .<sup>11</sup>
- $\Delta MGT_{it}$  : indicator variable, which equals 1 if firm  $i$  changes its top management (defined as CEO, chairman of the board or CFO) from year  $t-1$  to  $t$ ; and 0 otherwise.
- $FIN_{it}$  : extent of demand for capitals = (total amounts of firm  $i$ 's issuance of equity capital and corporate bonds in quarter  $t$ , divided by firm  $i$ 's total assets at the end of quarter  $t-1$ .)
- $\Delta INDROA_{it}$  : growth rate of return on assets for the industry = (the median of growth rate of return on assets from quarter  $t-1$  to  $t$  in firm  $i$ 's industry).
- $ELEC_{it}$  : indicator variable, which equals 1 if firm  $i$  belongs to electronics industry at the end of quarter  $t$ ; and 0 otherwise.
- $RET_{it}$  : firm  $i$ 's quarterly stock returns = (firm  $i$ 's stock returns from quarter  $t-1$  to  $t$ ).
- $\Delta SALE_{it}$  : firm  $i$ 's growth in quarterly sales = (firm  $i$ 's sales in quarter  $t$  - firm  $i$ 's sales in quarter  $t-1$ ) / firm  $i$ 's total assets at the end of quarter  $t-1$ .
- $\Delta OCF_{it}$  : firm  $i$ 's growth in cash flows from operations = (firm  $i$ 's cash flows from operations in quarter  $t$  - firm  $i$ 's cash flows from operations in quarter  $t-1$ ) / firm  $i$ 's total assets at the end of quarter  $t-1$ .
- $MTB_{it}$  : indicator variable, which equals 1 if firm  $i$ 's market-to-book ratios is below 1 at the end of quarter  $t$ ; and 0 otherwise.

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belongs to unrealized loss. Tax regulation allows firms to recognize losses in assets only when assets are damaged, discarded, disposed of, or disinvestment or liquidation of investee companies.” (Taxation Agency, 2005/2/25) Apparently, firms recognizing assets impairment loss under SFAS No. 35 in Taiwan cannot save taxes. Therefore, we do not consider the tax effect of impairment loss in this paper.

<sup>7</sup> Unexpected earnings ( $\Delta E_{it}$ ) = (firm  $i$ 's pre-impairment earnings in quarter  $t$  - firm  $i$ 's earnings in quarter  $t-4$ ) / firm  $i$ 's total assets at the end of quarter  $t-1$ .

<sup>8</sup> Unexpected negative earnings is defined as unexpected earnings being less than zero. We then rank all unexpected negative earnings for all firms in the same period and find its median.

<sup>9</sup> As suggested by Reidl (2004).

<sup>10</sup> Unexpected positive earnings is defined as unexpected earnings being more than zero. We then rank all unexpected positive earnings for all firms in the same period and find its median.

<sup>11</sup> As suggested by Reidl (2004).

**Reporting motivations**

Management has considerable discretion on the timing of adopting SFAS No. 35 and on the amount of assets impairment. Zucca and Campbell (1992) indicated that if managers' objective in recognizing assets impairment is to manipulate earnings, they might take either the "income-smoothing" tactic or the "taking-big-baths" tactic. Murthy (1985), Antle & Smith (1986), Lambert et al. (1987) argued that management's incentive plans generally tie in with reported income. Managers have motivations to maximize their bonuses through manipulating accounting earnings. Income smoothing literature argues that if management incentive plans are based on the income-smoothing purpose, managers will do so for their personal interest. Thus, management will selectively recognize assets impairment losses in periods with high earnings to attain the goal of income smoothing. Taking big baths literature argues that when earnings are abnormally low, management has incentive to "clear the deck" by recognizing assets impairment losses to signal that "the worst period has already passed and the future will be bright."

Following Riedl (2004), we use independent variables BATH and SMOOTH to represent the taking-big-baths tactic and the income-smoothing tactic, respectively. BATH is defined as the unexpected negative earnings if they are lower than the median for all firms in the same quarter, and zero otherwise. It represents that the firm has unexpected poor earnings performance. On the contrary, SMOOTH is defined as the unexpected positive earnings if it is higher than the median for all firms in the same quarter, and zero otherwise. It represents that the firm has unexpected good earnings performance. When management employs the taking- big-baths tactic to manipulate earnings, it will adopt SFAS No. 35 in the period of exceptionally poor earnings to "clear the deck." We expect a negative relation between BATH and early adoption of SFAS No. 35 or the amount of impairment losses. On the other hand, if management uses the income-smoothing tactic to manipulate earnings, it will adopt SFAS No. 35 in the period of exceptionally good earnings performance to recognize a large amount of impairment losses. We expect a positive relation between SMOOTH and the early adoption of SFAS No. 35 or the amount of assets impairment losses.

Other reporting motivations include change in top management. New management has incentive to "clear the deck" by recognizing assets impairment losses to improve its future financial performance. Following Francis *et al.* (1996),  $\Delta$ MGT is defined as changes in CEO, chairman of the board, or CFO. We expect a positive relation between  $\Delta$ MGT and the early adoption of SFAS No. 35 or the amount of assets impairment losses.

When a firm needs long-term capital, it may issue capital stock or corporate bond. However, the ability to raise capital and the cost of the new capital depend on a firm's reported earnings. In order to raise additional capital at lower cost, management would be reluctant to recognize assets impairment losses. We use FIN (the amount of seasonal equity and debt issuances deflated by total assets) to capture the need for long-term capital. We expect a negative relation between FIN and the early adoption of SFAS No. 35 or the amount of assets impairment losses.

***Operational factors***

SFAS No. 35 requires that, when there are indications that an asset may be impaired on the financial reporting date, management should estimate the recoverable amount of the impaired long-lived assets to make sure the long-lived assets are impaired and to adjust the value of assets according to current position. Such “indications” include internal information and external information. Examples of internal information for assets impairment are: evidence of physical damage or obsolescence of an asset, or significant adverse changes in the scope or in the manner in which an asset is used or is expected to be used have occurred or will take place in the near future. Examples of external information for assets impairment are: the decline of an asset’s market value during the period being significantly larger than the expected decline as a result of the passage of time or normal use; or significant adverse changes in industrial technology, market, economy, legal environment, or in the market to which the asset belongs having occurred during the period or will take place in the near future. Since an assets impairment decision could be driven by industry condition, a firm’s operational condition and assets usage condition, we further consider the operational factors in order to capture the cross-sectional variation of impairment losses.

Assets impairment may be related with changes in industrial technology and business environment. Firms in a declining industry are more likely to recognize larger amounts of impairment losses; and firms in a growing industry are less likely to have assets impairment. Therefore, the industry performance can influence the timing of adopting SFAS No. 35 and the amount of assets impairment losses. We use the change in industry return on assets ( $\Delta \text{INDROA}$ ) to capture the industry effect on the timing and amount of assets impairment decisions, and we predict a negative association between them, as suggested in Riedl (2004). In addition, due to the fact that the electronics industry has a higher reinvestment ratio and shorter life cycle, firms in this industry are more likely to recognize assets impairment losses. We expect a positive relationship between the electronics industry indicator (ELEC) and the early adoption of SFAS No. 35 or the amount of assets impairment losses.

Furthermore, assets impairment losses may be affected by a firm’s past operational and assets-usage conditions. Francis et al. (1996) suggested that the worse a firm’s past stock price performance has been, the more likely management will clear the deck of impaired assets. Since a firm’s stock price reflects investors’ expectation on the firm’s future performance, we employ stock returns before assets impairment (RET) to capture investors’ expectation on the firm’s future performance, and expect a negative relationship between RET and the early adoption of SFAS No. 35 or the amount of assets impairment losses.

Poor usage and idle capacity of an asset will reduce its value. Riedl (2004) argued that recognizing assets impairment losses implies lowering the recovery of specific assets. He used sales growth ( $\Delta \text{SALE}$ ) to capture assets recovery in an accrual basis and used operational cashflows growth ( $\Delta \text{OCF}$ ) to capture assets recovery in cash basis. We expect a negative relationship between  $\Delta \text{SALE}$  (or  $\Delta \text{OCF}$ ) and the amount of assets impairment losses. However, when determining the adoption timing of SFAS No. 35, management will consider whether a firm can bear the impact of recognizing impairment losses. A firm will early adopt SFAS No. 35 only when its sales growth and operational cashflows

growth are high enough. Accordingly, we expect a positive association between  $\Delta \text{SALE}$  (or  $\Delta \text{OCF}$ ) and the early adoption of SFAS No. 35.

In addition, SFAS No. 35 states that, when the carrying amount of an asset is larger than its market value, it is an indication that an asset may be impaired. Therefore, if a firm's market-to-book ratio (MTB) is below 1, then the firm's assets may be impaired. We expect a negative relationship between MTB and the early adoption of SFAS No. 35 or the amount of assets impairment losses.

### The Relationship between Assets Impairment Losses and Stock Returns

This paper also examines market reaction to assets impairment losses in event study. As described earlier, assets impairment losses may have negative, positive, or no market reactions, which are interpreted as decrease in economic value of assets, providing a signal of improving future profitability, or opportunistic earnings management, respectively. We retrieve the earnings announcement dates in *Taiwan Economic Journal* (TEJ) databank for the firms that disclosed assets impairment losses in their interim and annual financial statements from the second quarter of 2004 to the first quarter of 2005. We use the event-study module in TEJ to calculate firm  $i$ 's market-adjusted returns accumulated from day -2 to +1 as dependent variable. The estimation period is from day -302 to -3 relative to the announcement date (day 0). Since assets impairment information is disclosed in interim or annual reports, market will react to the assets impairment losses and unexpected earnings simultaneously. Therefore, we include unexpected earnings (UE) as independent variable in our testing mode (3) to control the effect of earnings announcement. In addition, firm size (SIZE) is also included for controlling the size effect:

$$CAR_i(-2,1) = \beta_0 + \beta_1 WOTA_i + \beta_2 UE_i + \beta_3 SIZE_i + \varepsilon_i \quad (3)$$

where,

$CAR_i(-2,1)$  : firm  $i$ 's market-adjusted return accumulated from day -2 to +1 relative to the announcement date (day 0).

Independent variables are:

$WOTA_t$  : firm  $i$ 's assets impairment losses at quarter  $t$ , divided by firm  $i$ 's total assets at the end of quarter  $t-1$ .

$UE_i$  : (firm  $i$ 's pre-impairment earnings at quarter  $t$  – firm  $i$ 's earnings at quarter  $t-4$ ) / firm  $i$ 's earnings at quarter  $t-4$ .

$SIZE_i$  : Natural logarithm of firm  $i$ 's total assets at the end of quarter  $t-1$ .

In addition, footnote information in financial statements segregate impairment losses from five different types of assets (i.e., long-term equity investment, fixed assets, goodwill, identifiable intangible assets and other assets). Aggregating impairment losses from five types of assets into a single item may lose some information. Thus, following the suggestion in Francis et al. (1996), we also include impairment losses from five

different types of assets, respectively, in our testing model (4) to investigate possible different market reactions for each type of asset.

$$CAR_i(-2,1) = \gamma_0 + \gamma_1 EQUA_i + \gamma_2 FATA_i + \gamma_3 GWTA_i + \gamma_4 IATA_i + \gamma_5 OATA_i + \gamma_6 UE_i + \gamma_7 SIZE_i + \varepsilon_i \quad (4)$$

where,

$CAR_i(-2,1)$  : firm  $i$ 's market-adjusted return accumulated from day -2 to +1 relative to the announcement date (day 0).

$EQUA_i$  : firm  $i$ 's impairment loss for long-term equity investment at quarter  $t$  (decrease in investment income resulting from impairment loss on long-term equity investments in equity method), divided by firm  $i$ 's total assets at the end of quarter  $t-1$ .

$FATA_i$  : firm  $i$ 's impairment loss for fixed assets at quarter  $t$ , divided by firm  $i$ 's total assets at the end of quarter  $t-1$ .

$GWTA_i$  : firm  $i$ 's impairment loss for goodwill at quarter  $t$ , divided by firm  $i$ 's total assets at the end of quarter  $t-1$ .

$IATA_i$  : firm  $i$ 's impairment loss for identifiable intangible assets (except for goodwill) at quarter  $t$ , divided by firm  $i$ 's total assets at the end of quarter  $t-1$ .

$OATA_i$  : firm  $i$ 's impairment loss for other assets at quarter  $t$ , divided by firm  $i$ 's total assets at the end of quarter  $t-1$ .

$UE_i$  : firm  $i$ 's change in pre-impairment earnings from quarter  $t-4$  to  $t$ , divided by firm  $i$ 's earnings at quarter  $t-4$ .

$SIZE_i$  : Natural logarithm of firm  $i$ 's total assets at the end of quarter  $t-1$ .

## IV. EMPIRICAL RESULTS

### Sample Selection and Data Sources

On July 1, 2004, the Financial Accounting Standards Committee of the Accounting Research and Development Foundation of the Republic of China issued SFAS No. 35, *Accounting for the Impairment of Assets*. This accounting standard came effective for financial statements ending on and after December 31, 2005, with early adoption permitted. Therefore, Taiwan's listed firms are required to adopt SFAS No. 35 in the first quarter of 2005. First of all, we examine the determinants of adoption timing of SFAS No. 35 and the amount of assets impairment losses, respectively, for listed firms in Taiwan.

Panel A of Table 1 illustrates our sample selection process. From the updated quarterly financial data of listed firms in the *TEJ* Finance database (May 2005), we find 341 listed firms in Taiwan recognizing assets impairment losses in their 2004 annual reports or in the first quarter of 2005. However, the *TEJ* database doesn't include firms



that made long-term equity investments accounted by the equity method and reduce their investment income due to assets impairment losses recognized by investee companies. We believe that such long-term equity investor companies should be included in our sample since these investor companies have significant influence on major decisions of investee companies, such as the adoption timing of SFAS No. 35 and the amount of assets impairment losses recognized. After checking data disclosed on the Taiwan's Market Observation Post System, we include additional 36 firms with long-term equity investment having the stated nature in our sample.

However, we exclude 3 firms (Walsin Lihwa, Zinwell and Universal Technology) that have assets impairment losses in both 2004 annual report and the 2005 first quarterly report. In addition, 10 firms in the banking industry are also excluded because the accounting of this regulated industry is substantially different from accounting for firms in other industries. Our final sample firms with asset impairment losses consists of 364 listed companies, including 105 firms recognizing assets impairment losses in their 2004 annual reports (the "early adopters" of SFAS No. 35) and 259 firms recognizing impairment loss in the first quarter of 2005 (the "non-early adopters").

In testing Hypothesis 1 (Investigating the determinants of the adoption timing of SFAS No. 35), the experiment group is those 105 firms recognizing assets impairment losses in their 2004 annual reports, and the matched control sample consists 105 firms that adopted SFAS No. 35 in the first quarter of 2005 in the same industry and of similar market value (size). In total, we have 210 observations for testing the Hypothesis 1. However, when testing Hypothesis 2 (Exploring the determinants of the amount of assets impairment losses), the experiment group is those 364 firms recognizing assets impairment losses in either their 2004 annual reports or 2005 first-quarter reports, and the matched control sample consists another 364 firms that did not recognize assets impairment losses in the same period, in the same industry and of similar market value (size). The final sample size for Hypothesis 2 is 728 firms.

In order to further analyze the determinants of the amount of assets impairment losses for each of the five types of long-lived assets (i. e., long-term equity investment, fixed assets, goodwill, identifiable intangible assets and other assets), we collect respective impairment data from footnotes of 2004 annual reports and 2005 first-quarter reports in the financial report database of the Market Observation Post System. The event dates of assets impairment losses disclosure and earnings announcement are retrieved from financial announcement dates in the financial market events data of the *TEJ* Firm Database.

Panel A of Table 1 illustrates the industry distribution of firms with assets impairments. We find sample firms are concentrated in the electronics industry ( $49.73\% = 181/364$ ), which is consistent with our hypothesis proposing that SFAS No. 35 will have more effect on the electronics industry. In addition, the proportion of firms with assets impairments in the Taiwan Stock Exchange ( $= 20.45\% = 245/1198$ ) is close to that in the GreTai Securities Exchange (OTC) ( $19.50\% = 119/610$ ).

**Table 1: The Sample Selection and Industries Compositions***Panel A : Sample Selection Process*

Firms with impairments in the first six months of 2005 in <i>TEJ</i> database	341
<i>add:</i> Firms reducing their investment income resulting from impairment loss on long-term equity investments accounted for in the equity method	36
<i>less:</i> Firms with impairment disclosures in both their 2004 annual reports and 2005 first-quarter reports	(3)*
Firms in the Banking industry	(10)
<i>Final sample:</i> Firms with assets impairments	<u>364</u>
Early adopters (impairments disclosed in the 2004 annual reports)	105**
Non-early adopters (impairments disclosed in the 2005 first-quarter reports)	<u>259</u>
<i>Matched sample:</i> Firms without assets impairments (for Hypothesis 2)	<u>364</u>

\* Three firms (Walsin Lihwa, Zinwell and Universal Technology) disclosed assets impairment losses in both their 2004 annual reports and 2005 first-quarter reports, as shown in the TEJ Database.

\*\* The control group for Hypothesis 1 consists of firms that adopted SFAS No. 35 in the first quarter of 2005.

*Panel B : Sample Compositions by Industries, Exchanges, and Timing of Adopting SFAS No. 35*

Industries	Number	Percentage	Exchange		Adopting SFAS No. 35	
			TSE-Listed firms(n=1198)	OTC-Listed firms(n=610)	Early Adopters	Non-Early Adopters
Cement	7	1.92%	7	0	1	6
Foods	12	3.30%	11	1	3	9
Plastics	9	2.47%	8	1	0	9
Textiles	30	8.24%	25	5	9	21
Machinery	11	3.02%	8	3	2	9
Wire & Cable	10	2.75%	10	0	3	7
Chemicals	15	4.12%	8	7	2	13
Glass	4	1.10%	4	0	3	1
Paper & Pulp	3	0.82%	3	0	0	3
Steel & Iron	14	3.85%	12	2	8	6
Rubber	2	0.55%	2	0	0	2
Automobiles	1	0.28%	1	0	0	1
Electronics	181	49.73%	99	82	53	128
Construction	27	7.42%	19	8	8	19
Transportation	4	1.10%	3	1	2	2
Tourism	2	0.55%	1	1	0	2
Wholesale	8	2.20%	6	2	5	3
others	24	6.59%	18	6	6	18
TOTAL	<u>364</u>	<u>100.00%</u>	<u>245</u>	<u>119</u>	<u>105</u>	<u>259</u>

### ***Descriptive Statistics of the Sample***

Table 2 provides descriptive statistics for firms with assets impairment disclosures. In panel A of Table 2, we show the extent of impairment losses for early adopters and non-early adopters of SFAS No. 35. Among 364 sample firms, 105 (28.85%) are early adopters and 259 (71.15%) are non-early adopters. The mean of impairment losses per share (0.7427) and the mean of assets-deflated impairment loss (0.0318) for early adopters are significant higher than that of non-early adopters (0.3536 and 0.0168 respectively). It seems that an early adopter has incentives to “clean the deck” through recognizing a large amount of impairment losses.

Types of long-lived assets subject to revaluation under SFAS No. 35 include long-term equity investments accounted for by the equity method, fixed assets, goodwill, identifiable intangible assets, and other assets. Panel B of Table 2 shows descriptive statistics of these five types of impairment losses. The total percentage of firms recognizing these five types of impairment losses is over 100% (=541/364), which implies some firms recognize more than two types of impairment losses. Furthermore, we also find the rankings in percentage and extent of the types of impairment losses are the same. The top three types of assets suffering impairment losses are: fixed assets (31.61%), long-term investments (27.17%) and other assets (26.43%). In addition, the impairment losses per share and assets-deflated impairment losses for these three assets are also substantially higher than other types of long-lived assets, such as goodwill and identifiable intangible assets.

Table 3 shows the relationship between the timing of adopting SFAS No. 35 and earnings performance. For 105 early adopters, 65 (61.9%) have pre-impairment net losses and 40 (38.1%) have pre-impairment net income. For 259 non-early adopters, on the contrary, 121 (46.7%) have pre-impairment net losses and 138 (53.3%) have pre-impairment net income. The  $\chi^2$  value of the contingency table is 6.8957 ( $p < 0.01$ ) and categorical  $\phi$  coefficient is 0.1376. These statistics show that a firm's earnings performance significantly affects its adoption time of SFAS No. 35. Firms with poor earnings performance would take “big baths” by recognizing impairment losses in hope that their future earnings will improve. Therefore, their managers early adopt SFAS No. 35 in 2004 annual report to clean up assets impairment losses.

Panel A of Table 4 presents descriptive statistics for sample firms with and without assets impairment losses, respectively. Univariate analyses show that, irrespective of other factors, firms with assets impairment losses have significantly higher  $\Delta$ MGT but significantly lower BATH and MTB. It seems that management's reporting motivations (changes in top management, taking big baths) and a firm's operational factor (the market-to-book ratio) are significantly different between impairment observations and non-impairment observations.

**Table 2: Descriptive Statistics for Sample Firms with Impairment Disclosure***Panel A : The Frequency and Amounts of Impairment Losses*

Adoption of			Impairment loss per share <sup>1</sup>				Deflated impairment loss <sup>2</sup>			
SFAS No. 35	Number	Percentage	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Early adopters	105 <sup>3</sup>	28.85%	7.9868	0.0197	0.7427	0.4087	0.3120	0.0008	0.0318	0.0167
Non-early adopters	259 <sup>4</sup>	71.15%	4.0574	0.0000	0.3536	0.1521	0.1944	0.0000	0.0168	0.0065
Total	<u>364</u>	<u>100.00%</u>								

*Panel B: The Frequency and Amounts of Different Types of Impairment Losses*

	<u>Non-early</u>													
Types of	<u>Early adopters</u>		<u>adopters</u>		<u>Total</u>		<u>Impairment loss per share<sup>1</sup></u>				<u>Deflated impairment loss<sup>2</sup></u>			
Impairment	n	%	n	%	n	%	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Long-term														
investment	44	41.90%	103	39.77%	147	27.17%	6.0800	0.0000	0.1225	0.0000	0.2121	0.0000	0.0049	0.0000
Fixed assets	55	52.38%	116	44.79%	171	31.61%	4.0574	0.0000	0.1840	0.0000	0.1944	0.0000	0.0086	0.0000
Goodwill	14	13.33%	21	8.11%	35	6.47%	2.1748	0.0000	0.0286	0.0000	0.0849	0.0000	0.0014	0.0000
Identifiable														
intangible														
assets	13	12.38%	32	12.36%	45	8.32%	2.1129	0.0000	0.0287	0.0000	0.0998	0.0000	0.0014	0.0000
Other assets	<u>43</u>	<u>40.95%</u>	<u>100</u>	<u>38.61%</u>	<u>143</u>	<u>26.43%</u>	<u>3.4240</u>	<u>0.0000</u>	<u>0.1019</u>	<u>0.0000</u>	<u>0.2957</u>	<u>0.0000</u>	<u>0.0048</u>	<u>0.0000</u>
	<u>169<sup>3</sup></u>		<u>372<sup>4</sup></u>		<u>541</u>									

<sup>1</sup> Impairment losses per share = impairment losses / outstanding shares<sup>2</sup> Deflated impairment losses = impairment losses / total assets at the beginning of the quarter<sup>3</sup> Early adopters consist of 105 firms. Because some firms recognize multiple types of impairment losses, the total observations for early adopters are 169.<sup>4</sup> Non-early adopters consist of 259 firms. Because some firms recognize multiple types of impairment losses, total observations for non-early adopters are 372.<sup>5</sup> Majority of firms recognize only some types of impairment losses. Therefore, the minima and medians of impairment loss per share and assets-deflated impairment losses are 0's.**Table 3: Contingency Table for Timing of Adopting SFAS No. 35 and Earnings**

Adoption Timing of SFAS No. 35	Pre-impairment Net Loss	Pre-impairment Net Income	Total
Early adopters	65 (61.9%)	40 (38.1%)	105 (100%)
Non-early adopters	<u>121 (46.7%)</u>	<u>138 (53.3%)</u>	<u>259 (100%)</u>
Total	<u>186</u>	<u>178</u>	<u>364</u>

<sup>1</sup> Pre-impairment net loss and pre-impairment net income refer to pretax net income and net loss before assets impairment losses.

**Table 4: Sample Statistics and Variable Definitions***Panel A : Summary Statistics for Whole Sample (n = 728)*

Variable	Impairment observations (n = 364)		Non-impairment observations (n = 364)		Test statistics	
	Mean	Median	Mean	Median	t-value	Z-value
<b>Reporting Motivations:</b>						
BATH	-0.0103	0.0000	-0.0061	0.0000	1.87*	1.69*
SMOOTH	0.0165	0.0000	0.0128	0.0000	1.04	0.21
$\Delta$ MGT	0.3542	0.0000	0.1853	0.0000	5.24***	4.88***
FIN	0.0026	0.0000	0.0028	0.0000	-0.11	0.59
<b>Operational Factors:</b>						
$\Delta$ INDROA	-0.0062	-0.0078	-0.0061	-0.0078	-0.37	-0.32
ELEC	0.5000	1.0000	0.5000	1.0000	0.00	0.00
RET	-0.0212	-0.0475	-0.0012	-0.0114	-1.32	-1.60
$\Delta$ SALE	-0.0166	-0.0112	-0.0178	-0.0125	0.18	0.00
$\Delta$ OCF	-0.0019	-0.0040	-0.0080	-0.0088	1.00	1.22
MTB	1.0951	0.9009	1.2886	1.0912	-3.44***	-3.70***

*Panel B : Summary Statistics of Impairment Observations (n=364)*

Variable	Early-adopters (n = 105)		Non-early adopters (n = 209)		Test statistics	
	Mean	Median	Mean	Median	t- value	Z-value
<b>Reporting Motivations:</b>						
BATH	-0.0283	0.0000	-0.0031	0.0000	-4.54***	7.08***
SMOOTH	0.0034	0.0000	0.0209	0.0000	4.01***	-3.99***
$\Delta$ MGT	0.3552	0.0000	0.3551	0.0000	0.24	0.24
FIN	0.0057	0.0000	0.0014	0.0000	1.26	0.15
<b>Operational Factors:</b>						
$\Delta$ INDROA	-0.0061	-0.0105	-0.0062	-0.0078	0.18	-3.47***
ELEC	0.5048	1.0000	0.4942	0.0000	0.26	0.26
RET	-0.0058	-0.0065	-0.0322	-0.0583	1.24	1.64
$\Delta$ SALE	0.0157	-0.0014	-0.0288	-0.0144	4.00***	4.68***
$\Delta$ OCF	0.0279	0.0079	-0.0141	-0.0107	4.09***	4.64***
MTB	1.0922	0.8667	1.0972	0.9325	-0.06	-0.76

\*, \*\*, and \*\*\* indicate statistical significance levels of 10%, 5% and 1%, respectively.

Variable definitions:

BATH<sub>it</sub>: the proxy for taking big baths = ( $\Delta E_{it} < \text{median of the "unexpected negative earnings"}$ ), then BATH<sub>it</sub> =  $\Delta E_{it}$ ; otherwise, BATH<sub>it</sub> = 0.) SMOOTH<sub>it</sub>: the proxy for income-smoothing = ( $\Delta E_{it} > \text{median of the "unexpected negative earnings"}$ ), then SMOOTH<sub>it</sub> =  $\Delta E_{it}$ ; otherwise, SMOOTH<sub>it</sub> = 0.)  $\Delta$  MGT<sub>it</sub>: equals 1 if firm *i* changes its top management (defined as CEO, chairman of the board or CFO) from year *t-1* to *t*; and 0 otherwise. FIN<sub>it</sub>: total amounts of firm *i*'s issuance of equity capital and corporate bonds in quarter *t*, divided by firm *i*'s total assets at the end of quarter *t-1*.  $\Delta$  INDROA<sub>it</sub>: the median of growth rate of return on assets from quarter *t-1* to *t* in firm *i*'s industry. ELEC<sub>it</sub>: equal 1 if firm *i* at quarter *t* belongs to the electronics industry, and 0 otherwise. RET<sub>it</sub>: firm *i*'s quarterly stock returns from quarter *t-1* to *t*.  $\Delta$  SALE<sub>it</sub>: firm *i*'s change in sales from quarter *t-1* to *t*, divided by total assets of firm *i* at quarter *t*.  $\Delta$  OCF<sub>it</sub>: firm *i*'s change in cash flows from operations from quarter *t-1* to *t*, divided by total assets of firm *i* at quarter *t*. MTB<sub>it</sub>: equal 1 if firm *i*'s market-to-book ratios at quarter *t* is below 1, and 0 otherwise.

Panel B of Table 4 partitions the impairment observations into early-adopters and non-early adopters. Univariate analyses show that, irrespective of other factors, early-adopters of SFAS No. 35 have significantly lower reporting motivations in BATH and SMOOTH. They also have significantly higher operational factors in  $\Delta$ SALE,  $\Delta$ OCF, and significantly lower operational factor in  $\Delta$ INDROA. Overall, the majority of management's reporting motivations and a firm's operational factors are significantly different between early-adopters and non-early adopters. Since univariate analyses of Table 4 do not consider the effects of other independent variables, we further employ the multivariate analyses in the following section.

**Table 5: Logistics Regression: The Timing of Adopting SFAS No. 35 (n=210)**

$$ADOPT_i = \alpha_0 + \alpha_1 BATH_i + \alpha_2 SMOOTH_i + \alpha_3 \Delta MTG_i + \alpha_4 FIN_i + \alpha_5 \Delta INDROA_i + \alpha_6 ELLC_i + \alpha_7 RET_i + \alpha_8 \Delta SALE_i + \alpha_9 \Delta OCF_i + \alpha_{10} MTB_i + \varepsilon_i \quad (1)$$

Variable	Predicted Sign	Coefficients ( $\chi^2$ value in parentheses)
Intercept		0.2630 (0.32)
<b>Reporting Motivations:</b>		
<i>BATH</i>	—	-41.6901 (16.37) ***
<i>SMOOTH</i>	+	-10.7116 (1.48)
<i>Δ MGT</i>	+	0.2134 (0.37)
<i>FIN</i>	—	6.5466 (1.17)
<b>Operational Factors:</b>		
<i>Δ INDROA</i>	—	-1.4359 (0.01)
<i>ELEC</i>	+	-0.2897 (0.44)
<i>RET</i>	—	1.0880 (1.55)
<i>Δ SALE</i>	+	13.2301 (15.48) ***
<i>Δ OCF</i>	+	11.6091 (12.60) ***
<i>MTB</i>	—	-0.3651 (1.68)
Likelihood ratio		83.1915 ***
Concordant		85.5%

a. \*, \*\*, and \*\*\* indicate statistical significance levels of 10%, 5% and 1%, respectively.

b. Variables definitions:

$ADOPT_i$ : equals 1 if firm  $i$  recognizes impairment losses in 2004 annual report, and 0 otherwise.  $BATH_i$ : the proxy for taking big baths = ( $\Delta E_i < \text{median of the "unexpected negative earnings"}$ , then  $BATH_i = \Delta E_i$ ; otherwise,  $BATH_i = 0$ .)  $SMOOTH_i$ : the proxy for income-smoothing = ( $\Delta E_i > \text{median of the "unexpected negative earnings"}$ , then  $SMOOTH_i = \Delta E_i$ ; otherwise,  $SMOOTH_i = 0$ .)  $\Delta MGT_i$ : equals 1 if firm  $i$  changes its top management (defined as CEO, chairman of the board or CFO) from year  $t-1$  to  $t$ , and 0 otherwise.  $FIN_i$ : total amounts of firm  $i$ 's issuance of equity capital and corporate bonds in quarter  $t$ , divided by firm  $i$ 's total assets at the end of quarter  $t-1$ .  $\Delta INDROA_i$ : the median of growth rate of return on assets from quarter  $t-1$  to  $t$  in firm  $i$ 's industry.  $ELEC_i$ : equal 1 if firm  $i$  at quarter  $t$  belongs to the electronics industry, and 0 otherwise.  $RET_i$ : firm  $i$ 's quarterly stock returns from quarter  $t-1$  to  $t$ .  $\Delta SALE_i$ : firm  $i$ 's change in sales from quarter  $t-1$  to  $t$ , divided by total assets of firm  $i$  at quarter  $t$ .  $\Delta OCF_i$ : firm  $i$ 's change in cash flows from operations from quarter  $t-1$  to  $t$ , divided by total assets of firm  $i$  at quarter  $t$ .  $MTB_i$ : equal to 1 if firm  $i$ 's market-to-book ratio at quarter  $t$  is below 1, and 0 otherwise.

***Multivariate Analysis: Hypothesis One***

Table 5 presents the results of logistics regression for exploring the determinants of the timing of adopting SFAS No. 35 for listed firms in Taiwan (Hypothesis 1). The experiment group consists of firms that early adopted SFAS No. 35 in their 2004 annual report ( $n = 105$ ), and the matched control group consists of firms that adopted SFAS No. 35 in the first quarter of 2005 ( $n = 105$ ). The concordant of the logistics regression is 85.5%.

We find that, among the reporting motivations, only taking big baths (BATH) (estimated coefficient =  $-41.61901$ ,  $p < 0.01$ ) is significantly negative, as predicted. Income smoothing (SMOOTH) and other reporting motivations are insignificant. These results reflect that firms which experienced poor earnings performance are apt to early adopt SFAS No. 35. Remarkably, among operational factors, only Sales Growth ( $\Delta \text{SALE}$ ) (estimated coefficient =  $13.2301$ ,  $p < 0.01$ ) and cash flow growth ( $\Delta \text{OCF}$ ) (estimated coefficient =  $11.6091$ ,  $p < 0.01$ ) are significantly positive, as predicted. These results show that when determining the timing of adopting SFAS No. 35, management will consider whether a firm can endure the impact of impairment losses. Only if sales growth and operational cashflows growth are high enough will a firm early adopt SFAS No. 35.

***Multivariate Analyses: Hypothesis Two***

Table 6 presents the results of tobit regressions in examining the determinants for amounts of assets impairment losses for early adopters of SFAS No. 35 (Hypothesis 2). The experiment group consists of 105 firms that early adopted SFAS No. 35 in their 2004 annual report. The matched control group consists of 105 firms without impairment losses in their 2004 annual report, which are matched with our experimental sample firms in terms of market value (size) and industry. The explanatory power of tobit regression is 17.42%. We find the amounts of assets impairment losses for early adopters are only significantly related with management's reporting motivations, such as taking big baths (BATH) (estimated coefficient =  $-0.1724$ ), income smoothing (SMOOTH) (estimated coefficient =  $0.4836$ ) and changes in top management ( $\Delta \text{MGT}$ ) (estimated coefficient =  $0.0219$ ), as predicted. Firms would early adopt SFAS No. 35 to recognize large impairment losses in the period of unexpectedly poor earnings performance to improve future earnings performance or to have the restoration flexibility of impairment losses in the future period (BATH). Firms also may recognize impairment losses in the period of unexpectedly good earnings performance to smooth income (SMOOTH). In addition, new managers would early adopt SFAS No. 35 to recognize a large impairment loss to increase firms' earnings performance in the future period ( $\Delta \text{MGT}$ ). Our results are consistent with Zucca and Campbell (1992) who documented that managers recognizing impairment losses aim at taking big baths or smoothing income.

However, firms' operational factors do not affect the amount of assets impairment decision for early adopters in Taiwan. The results in Table 6 indicate managers of early adopters have significant reporting motivations, but insignificant operational factors, for the amount of assets impairment decision. Managers have incentives to "clear the deck" of impaired assets and signal "the worst period has already passed and future performance can be improved." Managers also have incentive to smooth earnings in order to increase their bonuses for the next year. However, the amount of assets impairment decision for

earlier adopters is not significantly associated with firms' operational factors, industrial technology, changes in environment, firms' past operational condition or assets usage conditions.

To examine the above results in depth, we also run separate tobit regressions in Table 6 for each of the five asset types (i.e., long-term equity investment, fixed assets, goodwill, identifiable intangible assets and idle assets) for early adopters. Our empirical results show that the amounts of assets impairment decision for early adopters are driven primarily by management's reporting motivations, especially when top management is changed ( $\Delta$  MGT). However, firms' operational factors do not play significant roles in the amount of impairment decisions for respective assets types. The explanatory power of regression for long-term equity investment model (20.40%) is the highest one among five assets, and that of goodwill model (4.01%) is the lowest one. In addition, impairment losses from long-term equity and fixed assets for early adopters of SFAS No. 35 are driven primarily by taking big baths (BATH) negatively and changes in top management ( $\Delta$  MGT) positively. However, impairment losses from idle assets for early adopters are driven primarily by smoothing income (SMOOTH) positively and changes in top management ( $\Delta$  MGT) positively. Nevertheless, early adopters recognizing impairment losses from goodwill and intangible assets are only driven by changes in top management ( $\Delta$  MGT) positively, but unaffected by other proxies for management's reporting motivations (estimated coefficients of BATH and SMOOTH are insignificant). Hence, managers of early adopters would not manage earnings through impairment losses from goodwill or identifiable intangible assets. However, managers have motivations to "clear the deck" of impaired fixed assets and impaired long-term investment for improving future earnings. In addition, managers may recognize impairment losses for idle assets in order to smooth earnings and increase their bonuses in the following year.

Table 7 presents the results of tobit regressions in examining the determinants of the amount of assets impairment decision for non-early adopters (Hypothesis 2). The experiment group consists of 259 non-early adopters of SFAS No. 35 in the first quarter of 2005. And, the matched control sample consists of 259 firms without impairment losses in the first quarter of 2005, which are matched with our firms in the experiment group in terms of market value (size) and industry. The explanatory power of tobit regression is 11.04%. Different from early adopters of SFAS No. 35, non-early adopters consider both reporting motivations and operational factors in determining the amounts of assets impairment.

Among reporting motivations for non-early adopters, the income-smoothing proxy (coefficient of SMOOTH = 0.0296) and the top management changes (coefficient of  $\Delta$  MGT = 0.0075) are significant and consistent with our prediction. The taking big baths variable (BATH) is no longer significant as with early adopters. We infer that firms with unexpectedly poor earnings performance would have adopted SFAS No. 35 early in the fourth quarter of 2004 (evidenced in Table 5). Among operational factors for non-early adopters, stock return performance RET is significant and consistent with prediction, which implies the worse a firm's past stock price performance has been, the more likely its management will recognize the assets impairment losses. However, the sales growth variable,  $\Delta$  SALE, is significant and contrary to our prediction. Firms with higher sales



growth may face more technological innovations and, therefore, may need to recognize more assets impairments.

**Table 6: Tobit Regressions: Determinants for the Amounts of Assets impairment Losses for Early Adopters (n=210)**

$$WOTA_{it} = \alpha_0 + \alpha_1 BATH_{it} + \alpha_2 SMOOTH_{it} + \alpha_3 \Delta MGT_{it} + \alpha_4 FIN_{it} + \alpha_5 \Delta INDROA_{it} + \alpha_6 ELEC_{it} + \alpha_7 RET_{it} + \alpha_8 \Delta SALE_{it} + \alpha_9 \Delta OCF_{it} + \alpha_{10} MTB_{it} + \varepsilon_{it} \quad (2)$$

Variable	Predicted Sign	Generic	Separate Tobit regressions				
		Tobit Regression	Long-term investment	Fixed assets	Goodwill	Intangible assets	Idle assets
Intercept		0.0003 (0.04)	-0.0007 (-0.23)	0.0034 (1.93)*	0.0004 (0.16)	-0.0003 (-0.16)	-0.0026 (-0.66)
<b>Reporting Motivations:</b>							
<i>BATH</i>	—	-0.1724 (-3.30)***	-0.1376 (-5.76)***	-0.0410 (-2.77)***	0.0089 (0.40)	0.0092 (0.66)	-0.0118 (-0.35)
<i>SMOOTH</i>	+	0.4836 (2.58)***	0.0483 (0.56)	-0.0330 (-0.62)	-0.0035 (-0.04)	0.0356 (0.71)	0.4361 (3.60)***
<i>Δ MGT</i>	+	0.0219 (4.35)***	0.0045 (1.95)*	0.0040 (2.80)***	0.0040 (1.87)*	0.0031 (2.31)**	0.0063 (1.94)*
<i>FIN</i>	—	-0.0171 (-0.27)	-0.0082 (-0.17)	-0.0017 (-0.10)	0.0055 (0.21)	-0.0010 (-0.06)	-0.0117 (-0.29)
<b>Operational Factors:</b>							
<i>Δ INDROA</i>	—	-0.0666 (-0.12)	0.3915 (1.57)	-0.0021 (-0.01)	0.0571 (0.25)	0.0931 (0.64)	-0.6063 (-1.72)*
<i>ELEC</i>	+	0.0007 (0.11)	0.0017 (0.56)	-0.0014 (-0.71)	0.0035 (1.26)	0.0026 (1.47)	-0.0058 (-1.34)
<i>RET</i>	—	0.0015 (0.13)	-0.0075 (-1.36)	0.0015 (0.44)	-0.0042 (-0.84)	0.0011 (0.34)	0.0107 (1.38)
<i>Δ SALE</i>	—	-0.0317 (-1.04)	0.0017 (0.12)	0.0037 (0.43)	-0.0057 (-0.45)	-0.0001 (-0.02)	-0.0312 (-1.59)
<i>Δ OCF</i>	—	0.0075 (0.26)	-0.0102 (-0.79)	-0.0005 (-0.06)	-0.0110 (-0.93)	0.0044 (0.57)	0.0249 (1.36)
<i>MTB</i>	—	0.0019 (0.50)	0.0011 (0.58)	-0.0011 (-1.06)	0.0002 (0.10)	-0.0002 (-0.23)	0.0021 (0.86)
Adj. $R^2$		17.42%	20.40%	9.71%	4.01%	4.59%	12.53%

a. \*, \*\*, and \*\*\* indicate statistical significance levels of 10%, 5% and 1%, respectively.

b.  $t$ -value in parentheses

c. Variable definitions:

$WOTA_{it}$ : firm  $i$ 's pre-impairment loss at quarter  $t$ , divided by firm  $i$ 's total assets at the end of quarter  $t-1$ .  $BATH_{it}$ : the proxy for taking big baths =  $(\Delta E_{it} < \text{median of the "unexpected negative earnings"})$ , then  $BATH_{it} = \Delta E_{it}$ ; otherwise,  $BATH_{it} = 0$ .  $SMOOTH_{it}$ : the proxy for income-smoothing =  $(\Delta E_{it} > \text{median of the "unexpected negative earnings"})$ , then  $SMOOTH_{it} = \Delta E_{it}$ ; otherwise,  $SMOOTH_{it} = 0$ .  $\Delta MGT_{it}$ : equals 1 if firm  $i$  changes its top management (defined as CEO, chairman of the board or CFO) from year  $t-1$  to  $t$ , and 0 otherwise.  $FIN_{it}$ : total amounts of firm  $i$ 's issuance of equity capital and corporate bonds in quarter  $t$ , divided by firm  $i$ 's total assets at the end of quarter  $t-1$ .  $\Delta INDROA_{it}$ : the median of growth rate of return on assets from quarter  $t-1$  to  $t$  in firm  $i$ 's industry.  $ELEC_{it}$ : equals 1 if firm  $i$  at quarter  $t$  belongs to the electronics industry, and 0 otherwise.  $RET_{it}$ : firm  $i$ 's quarterly stock returns from quarter  $t-1$  to  $t$ .  $\Delta SALE_{it}$ : firm  $i$ 's change in sales from quarter  $t-1$  to  $t$ , divided by total assets of firm  $i$  at quarter  $t$ .  $\Delta OCF_{it}$ : firm  $i$ 's change in cash flows from operations from quarter  $t-1$  to  $t$ , divided by total assets of firm  $i$  at quarter  $t$ .  $MTB_{it}$ : equals 1 if firm  $i$ 's market-to-book ratio at quarter  $t$  is below 1, and 0 otherwise.

To investigate in depth for the above conclusions, we also run separate tobit regressions for each of the five assets types (i.e., long-term equity investment, fixed assets, goodwill, identifiable intangible assets and idle assets). From Table 7, we find that the amounts of each type of assets impairments for non-early adopters are driven mainly by the change in top management ( $\Delta$  MGT). Specifically, the impairment losses of intangible assets and goodwill for non-early adopters are significantly associated with reporting motivations only, such as BATH (coefficient = -0.0209), SMOOTH (coefficient = 0.0041) and  $\Delta$  MGT (coefficient = 0.0006) for intangible assets and the change in top management  $\Delta$  MGT (coefficient = 0.0008) for goodwill. However, the impairment losses of long-term equity investment and fixed assets for non-early adopters are significantly driven by both management's reporting motivations ( $\Delta$  MGT) and firm's operational factors ( $\Delta$ INDROA, RET, and MTB for long-term equity investment and ELEC, RET and  $\Delta$  SALE for fixed assets). Notice that other reporting motivations, such as BATH and SMOOTH, are not significantly associated with impairment losses in long-term equity investment and that of fixed assets for non-early adopters. We infer that firms with impairment losses in long-term equity investment and fixed assets may have adopted SFAS No. 35 in 2004 annual reports. (As shown in Table 6 for early adopters, coefficient of BATH = -0.1376 ( $p < 0.01$ ) for long-term equity investment, and coefficient of BATH = -0.0410 ( $p < 0.01$ ) for fixed assets respectively).

As for goodwill, tobit regressions in Table 6 and Table 7 show that impairment loss of goodwill is driven only by the change in top management ( $\Delta$  MGT) among all management's reporting motivations. This may be because SFAS No. 35 does not allow restoration of recognized impairment losses for goodwill. Therefore, management cannot manipulate earnings through recognizing impairment losses for goodwill. However, firms recognizing impairment losses of other types of assets (i.e., long-term equity investment, fixed assets, identifiable intangible assets and idle assets) would be driven by managements' earnings management incentives (e. g., taking "big baths" and "income-smoothing").

### ***Multivariate Analysis: Hypothesis Three***

We employ OLS multiple regressions to examine market reaction to the disclosure of assets impairment losses (Hypothesis 3) as shown in Table 8. Firms included in our sample are 105 early adopters of SFAS No. 35 (adopted in 2004 fourth quarter) and 259 non-early adopters (adopted in 2005 first quarter) with assets impairment losses. We exclude 49 firms due to lack of stock return data in the TEJ databank (10 for early adopters, and 39 for non-early adopters) and 14 outliers (9 for early adopters and 5 for non-early adopters). Thus, the final sample for market reaction analysis consists of 86 early adopters and 215 non-early adopters of SFAS No. 35. In total, 301 observations are used in our market analyses.

**Table 7 Tobit Regressions: Determinants for the Amounts of Assets impairment Losses for Non-early Adopters (n = 518)**

$$WOTA_{it} = \alpha_0 + \alpha_1 BATH_{it} + \alpha_2 SMOOTH_{it} + \alpha_3 \Delta MGT_{it} + \alpha_4 FIN_{it} + \alpha_5 \Delta INDROA_{it} + \alpha_6 ELEC_{it} + \alpha_7 RET_{it} + \alpha_8 \Delta SALE_{it} + \alpha_9 \Delta OCF_{it} + \alpha_{10} MTB_{it} + \varepsilon_{it} \quad (2)$$

Variable	Predicted Sign	Generic Tobit Regression	Separate Tobit regressions				
			Long-term investment	Fixed assets	Goodwill	Intangible assets	Idle assets
Intercept		0.0044 (2.01)**	0.0007 (0.88)	0.0018 (0.98)	0.0005 (1.06)	-0.0004 (-1.33)	0.0015 (2.27)**
<b>Reporting Motivations:</b>							
<i>BATH</i>	—	-0.0329 (-0.64)	-0.0134 (-0.74)	-0.0128 (-0.30)	0.0054 (0.47)	-0.0209 (-2.99)***	0.0088 (0.46)
<i>SMOOTH</i>	+	0.0296 (1.71)*	-0.0062 (-1.02)	0.0224 (1.60)	0.0041 (1.04)	0.0041 (1.78)*	0.0051 (0.81)
<i>Δ MGT</i>	+	0.0075 (4.74)***	0.0018 (3.17)***	0.0036 (2.77)***	0.0008 (2.29)**	0.0006 (2.99)***	0.0007 (1.20)
<i>FIN</i>	—	0.0011 (0.02)	-0.0052 (-0.29)	0.0152 (0.37)	-0.0018 (-0.15)	-0.0022 (-0.31)	-0.0051 (-0.27)
<b>Operational Factors:</b>							
<i>Δ INDROA</i>	—	-0.1133 (-0.44)	-0.2014 (-2.21)**	0.2328 (1.10)	-0.0731 (-1.24)	-0.0377 (-1.07)	-0.0341 (-0.35)
<i>ELEC</i>	+	0.0027 (1.42)	-0.0008 (-1.23)	0.0045 (2.91)***	-0.0002 (-0.46)	0.0002 (0.69)	-0.0010 (-1.40)
<i>RET</i>	—	-0.0188 (-4.18)***	-0.0015 (-0.94)	-0.0151 (-4.11)***	0.0001 (0.13)	-0.0006 (-1.06)	-0.0017 (-1.02)
<i>Δ SALE</i>	—	0.0196 (1.85)*	-0.0009 (-0.25)	0.0239 (2.76)***	-0.0032 (-1.33)	0.0018 (1.28)	-0.0019 (-0.49)
<i>Δ OCF</i>	—	0.0167 (1.48)	0.0048 (1.41)	0.0143 (1.45)	0.0014 (0.63)	-0.0013 (-0.97)	-0.0026 (-0.72)
<i>MTB</i>	—	-0.0015 (-1.42)	-0.0007 (-1.92)*	-0.0002 (-0.18)	-0.0003 (-1.20)	0.0008 (0.58)	-0.0004 (-1.11)
Adj. $R^2$		11.04%	5.19%	8.09%	2.48%	4.70%	2.26%

a. \*, \*\*, and \*\*\* indicate statistical significance levels of 10%, 5% and 1%, respectively.

b. *t*-value in parentheses

c. Variable definitions:

$WOTA_{it}$ : firm *i*'s pre-impairment losses at quarter *t*, divided by firm *i*'s total assets at the end of quarter *t-1*.  $BATH_{it}$ : the proxy for taking big baths = ( $\Delta E_{it} < \text{median of the "unexpected negative earnings"}$ , then  $BATH_{it} = \Delta E_{it}$ ; otherwise,  $BATH_{it} = 0$ .)  $SMOOTH_{it}$ : the proxy for income-smoothing = ( $\Delta E_{it} > \text{median of the "unexpected negative earnings"}$ , then  $SMOOTH_{it} = \Delta E_{it}$ ; otherwise,  $SMOOTH_{it} = 0$ .)  $\Delta MGT_{it}$ : equals 1 if firm *i* changes its top management (defined as CEO, chairman of the board or CFO) from year *t-1* to *t*; and 0 otherwise.  $FIN_{it}$ : total amounts of firm *i*'s issuance of equity capital and corporate bonds in quarter *t*, divided by firm *i*'s total assets at the end of quarter *t-1*.  $\Delta INDROA_{it}$ : the median of growth rate of return on assets from quarter *t-1* to *t* in firm *i*'s industry.  $ELEC_{it}$ : equals 1 if firm *i* at quarter *t* belongs to the electronics industry, and 0 otherwise.  $RET_{it}$ : firm *i*'s quarterly stock returns from quarter *t-1* to *t*.  $\Delta SALE_{it}$ : firm *i*'s change in sales from quarter *t-1* to *t*, divided by total assets of firm *i* at quarter *t*.  $\Delta OCF_{it}$ : firm *i*'s change in cash flows from operations from quarter *t-1* to *t*, divided by total assets of firm *i* at quarter *t*.  $MTB_{it}$ : equals 1 if firm *i*'s market-to-book ratio at quarter *t* is below 1, and 0 otherwise.

Panel A of Table 8 presents our empirical results for security price reaction to the impairment disclosure, earnings announcement and firm size. From Panel A of Table 8, we find a significantly negative security price reaction to the impairment losses per share (coefficient of WOTA is -10.5864,  $p < 0.05$ ) for early-adopters of SFAS No. 35 in 2004 annual reports. This is consistent with the first half of our Hypothesis 3, which proposes that security price reactions to the amount of impairment losses in *audited* annual report would be significantly negative. This result indicates investors deem that economic values of the assets are substantially impaired as reported in annual reports.

Note that the fourth-quarter unexpected earnings (UE) are not significantly correlated with CAR for early adopters of SFAS No. 35. Nevertheless, these results are consistent with Francis et al. (1996: 131-132). Francis et al. argue that this phenomenon may due to (1) the proxy for unexpected quarter earnings is based on a seasonal random walk and pre-impairment EPS and thus contain some measurement errors that analysts' forecasts may account for; (2) the disclosure date of impairment losses is on the same day as annual report. Since annual report contains earnings and much other information, the noise of earnings information in annual reports is much louder than that in quarterly reports. Therefore, the association between unexpected earnings in annual reports and security price is reduced. In addition, unlike the U.S. SEC requiring registrants disclose annual report on May 31 and the first quarterly report on April 15, the disclosure dates of annual report and that of the first quarter report are on the same day of April 30 for public firms in Taiwan. The simultaneous disclosure date of annual report and the first-quarter report may cause our empirical results, which reflect earnings information in annual report, to have no information content, whereas earnings information in the first quarter has.

For non-early adopters of SFAS No. 35, there is no significantly negative security price reaction to the impairment losses per share WOTA (coefficient = -10.7803). This result is consistent with the second half of our Hypothesis 3, which proposes that security price reactions to the assets impairment losses in the *unaudited* first-quarter report would not be significantly negative due to the creditability of the impairment losses. Investors may deem the amount of assets impairment in the *unaudited* quarterly reports as management's opportunistic earnings manipulation since the amount of assets impairment decision involves much management reporting discretion. On the other hand, security price reaction is significantly positive to unexpected earnings in the first quarter of 2005 (coefficient of UE is 0.0817,  $p < 0.05$ ). This result reflects that the first-quarter earnings disclosure contains less noise than that in annual report. Simultaneous disclosure of annual report and the first-quarter report makes earnings in the annual report have no information content but that in the first-quarter has.

In addition, impairment losses from different types of assets may have different market reaction. Panel B of Table 8 shows the empirical results of market reaction to impairment losses from five long-lived assets in model (4). We find that security price reacts significantly negative only to impairment losses from idle assets (coefficient of OATA = -26.6596,  $p < 0.05$ ) and long-term equity investment (coefficient of EQUTA = -10.2576,  $p < 0.05$ ). On the contrary, we observe no significant reaction to impairment losses of goodwill, identifiable intangible assets, and fixed assets.

**Table 8: Market Reaction to the Amount of Impairment announcement***Panel A : Market Reaction to the disclosure of Assets Impairment losses in Total (n = 301)*

$$CAR_i(-2,1) = \beta_0 + \beta_1 WOTA_i + \beta_2 UE_i + \beta_3 SIZE_i + \varepsilon_i \quad (3)$$

Variable	Predicted Sign	All samples ( Sample =301)	Early adopters ( sample=86)	Non-early adopters ( sample =215)
Intercept		-7.2149 (-3.05) ***	-6.8217 (-1.84) *	-6.8848 (-2.25) **
<i>WOTA</i>	—	-9.9432 (-2.23) **	-10.5864 (-2.32) **	-10.7803 (-1.28)
<i>UE</i>	+	-0.0012 (-0.11)	-0.0078 (-0.75)	0.0817 (2.27) **
<i>SIZE</i>	+	0.2986 (2.84) ***	0.2853 (1.75) *	0.2841 (2.09) **
Adj. $R^2$		3.55%	5.93%	5.28%

*Panel B : Market Reaction to the disclosure of Impairment losses for five asset types (n = 301)*

$$CAR_i(-2,1) = \gamma_0 + \gamma_1 EQUA_i + \gamma_2 FATA_i + \gamma_3 GWTA_i + \gamma_4 IATA_i + \gamma_5 OATA_i + \gamma_6 UE_i + \gamma_7 SIZE_i + \varepsilon_i \quad (4)$$

Variable	Predicted sign	Full samples ( n=301)	Early adopters ( n=86)	Non-early adopters ( n=215)
Intercept		-6.66346 (-3.15) ***	-5.1731 (-1.36)	-7.0172 (-2.25) **
<i>EQUA</i>	—	-10.2576 (-2.04)**	-9.2822 (-1.82) *	-6.0832 (-0.35)
<i>FATA</i>	—	-2.8708 (-0.39)	4.8708 (0.29)	-5.2256 (-0.51)
<i>GWTA</i>	—	0.1975 (0.02)	1.7695 (0.17)	-21.9091 (-0.65)
<i>IATA</i>	—	-14.3533 (-0.80)	-11.2141 (-0.60)	-4.5087 (-0.15)
<i>OATA</i>	—	-26.6596 (-2.43) **	-51.9083 (-3.59) ***	-24.9455 (-1.02)
<i>UE</i>	+	-0.0064 (-0.80)	-0.0059 (-0.55)	0.0821 (2.24) **
<i>SIZE</i>	+	0.2619 (2.80) ***	0.2175 (1.32)	0.2905 (2.10) **
Adj. $R^2$		4.14%	13.50%	3.55%

a. \*, \*\*, and \*\*\* indicate statistical significance levels of 10%, 5% and 1%, respectively. b. *t*-value in parentheses

c. Variables definitions:

$CAR_i(-2,1)$ : firm *i*'s market-adjusted abnormal return accumulated from day -2 to +1 relative to the disclosure date.  
 $WOTA_i$ : firm *i*'s pre-impairment loss at quarter *t*, divided by firm *i*'s total assets at the end of quarter *t-1*.  $UE_i$ : firm *i*'s change in pre-impairment earnings from quarter *t-4* to *t*, divided by firm *i*'s pre-impairment earnings at quarter *t-4*.  
 $SIZE_i$ : natural logarithm of firm *i*'s total assets at the end of quarter *t-1*.  $EQUA_i$ : firm *i*'s pre-impairment loss for long-term equity investment at quarter *t* (decrease in investment income resulting from impairment losses on long-term equity investments accounted in the equity method), divided by firm *i*'s total assets at the end of quarter *t-1*.  $FATA_i$ : firm *i*'s pre-impairment loss for fixed assets at quarter *t*, divided by firm *i*'s total assets at the end of quarter *t-1*.  $GWTA_i$ : firm *i*'s pre-impairment loss for goodwill at quarter *t*, divided by firm *i*'s total assets at the end of quarter *t-1*.  $IATA_i$ : firm *i*'s pre-impairment loss for identifiable intangible assets (exclude goodwill) at quarter *t*, divided by firm *i*'s total assets at the end of quarter *t-1*.  $OATA_i$ : firm *i*'s pre-impairment loss for idle assets at quarter *t*, divided by firm *i*'s total assets at the end of quarter *t-1*.

Impairment loss in fixed assets is the largest one among five types of assets (Table 2). Why doesn't the market react to this impairment information when disclosed? Is it possible that market reacted when the SFAS No. 35 was issued? Our additional analyses (table not shown) indicate market did react to the impairment loss from fixed assets (coefficient of FATA = -10.7444,  $p = 0.06$ ) around the SFAS No. 35 issue date of July 1, 2004. This result may explain why stock does not react to impairment loss of fixed assets when it is disclosed later.

The significantly negative stock price reaction to impairment losses is driven mainly by early adopters recognizing impairment losses from idle assets (OATA, coefficient = -51.9083,  $p < 0.01$ ) and long-term equity investment (EQUITA, coefficient = -9.2822,  $p < 0.10$ ) in *audited* annual report, as shown in Table 8. Investors may believe impairment losses from idle assets in audited annual report are more reliable and that it reflects substantial impairment in idle assets. The impairment loss from long-term equity investment comes from the decrease in investment income resulting from impairment loss on long-term equity investments accounted for by the equity method. Since this amount is hard to predict, more negative market reaction is expected when a firm discloses the impairment loss from long-term equity investment. Probably due to high discretion on impairment losses in the *unaudited* first-quarter report of 2005, non-early adopters recognizing impairment losses from long-lived assets provoke insignificant market reaction.

## V. SENSITIVITY ANALYSES

In this section, we further conduct sensitivity analyses to examine the validity of above empirical results : (1) Employing different definition of "taking big bath" to validate the BATH variable in Tables 5-7; (2) Employing different definition of change in top management to validate the  $\Delta$ MGT variable in Tables 5-7; (3) Using 105 early adopters of SFAS No. 35 only without matching group to run multiple regression in examining the determinants of assets impairment losses in Table 6; (4) Using 259 non-early adopters of SFAS No. 52 only without matching group to run multiple regression in examining the determinants of assets impairment losses in Table 7; (5) Using different windows for CAR in examining the market reaction to the disclosure of impairment losses in Table 8; (6) Including industry dummies in examining the market reaction to the disclosure of impairment losses in Table 8; (7) Deflating independent variables of Table 8 by stock price at the beginning of the quarter; (8) Employing annual data, instead of quarterly data, to investigate the determinants of early adoption of SFAS No. 35 decision.

### *Validating the "Taking-Big-Bath" Variable*

We further employ the definition of taking-big-bath variable suggested by Francis et al. (1996) to validate our original BATH variable. The new BATH = unexpected earnings if unexpected earnings is less than zero, and new BATH = 0 otherwise, where unexpected earnings = (pre-impairment quarterly earnings in quarter  $t$  - quarterly earnings in quarter  $t-1$ ) / Total assets in quarter  $t-1$ . Empirical results under this new definition of BATH show the followings: the coefficient of new BATH is -64.5809 ( $p < 0.01$ ) with classification concordant of 88.6% in Table 5; the coefficient of new BATH is -0.1885 ( $p$

< 0.01) with explanatory power of 17.67% in Table 6; and the coefficient of new BATH is -0.0999 ( $p = 0.13$ ) with explanatory power of 11.75% in Table 7. Under the definition of new BATH, the predicted signs, significances and estimated coefficients of independent variables are similar to those in Table 5-7. The validity of original BATH variable is evidenced by this sensitivity analysis.

#### ***Validating the “Change-in-Top-Management” Variable***

We further employ the definition of Change-in-top-management variable suggested by Riedl (2004) to validate our original  $\Delta$  MGT variable. The new  $\Delta$  MGT refers only to change in CEO. Empirical results under this new definition of  $\Delta$  MGT show the following: coefficient of  $\Delta$  MGT is -0.3282 ( $p = 0.85$ ) with classification concordant of 85.4% in Table 5; coefficient of  $\Delta$  MGT is 0.0242 ( $p < 0.01$ ) with explanatory power of 14.49% in Table 6; and coefficient of  $\Delta$  MGT is 0.0074 ( $p < 0.01$ ) with explanatory power of 9.519% in Table 7. Under the new definition of change in top management, the predicted signs, significances and estimated coefficients of independent variables are similar to those in Table 5-7. The validity of original  $\Delta$  MGT is evidenced by this sensitivity analysis.

#### ***Using Only Early Adopters of SFAS No. 35 as Sample in Table 6 to Examine the Determinants of Assets Impairment Losses***

We further use early adopters only without matching group in running multiple regressions in Table 6 to examine the determinants of assets impairment losses. Empirical results show the following: the explanatory power of the new multiple regressions is 11.29%. Only management's reporting motivations are associated with impairment losses for early adopters, whereas operational factors are not. The coefficient of BATH = -0.1664 ( $p < 0.01$ ); the coefficient of SMOOTH = 1.2492 ( $p < 0.01$ ) and coefficient of  $\Delta$  MGT = 0.0173 ( $p = 0.05$ ), which are consistent with our prediction. Using only early adopters as sample, the predicted signs, significances and estimated coefficients of variables are similar to those in Table 6. The validity of results in Table 6 is evidenced by a different sample in regression.

#### ***Using Only Non-Early Adopters of SFAS No. 35 as Sample in Table 7 to Examine the Determinants of Assets Impairment Losses***

We further use only non-early adopters without matching group in running multiple regression in Table 7 to examine the determinants of assets impairment losses. Empirical results show the following: the explanatory power of the new multiple regressions is 9.26%. Both management's reporting motivations, such as SMOOTH (coefficient = 0.0476,  $p = 0.08$ ) and  $\Delta$  MGT (coefficient = 0.0043,  $p = 0.09$ ), and operational factors, such as RET (coefficient = -0.0317,  $p < 0.01$ ) and  $\Delta$  SALE (estimated coefficient = 0.0339,  $p = 0.08$ ) are associated with impairment losses for non-early adopters of SFAS No. 35. These results are similar to those in Table 7. The validity of results in Table 7 is evidenced by a different sample in regression.

#### ***Examining Market Reaction to the Disclosure of Impairment Losses Using***

***Different Accumulation Windows of CAR***

In addition to the accumulation window of  $[-2, 1]$  for CAR around the event date of impairment disclosure, we also accumulated CAR for windows of  $[-3, 1]$  and  $[-1, 1]$  in examining market reaction to the disclosure of impairment losses. Empirical results show the explanatory power of regression (3) for CAR  $[-3, 1]$  as dependent variable is 4.51%, with estimated coefficient of WOTA = -10.1471 ( $p = 0.03$ ); the explanatory power for CAR  $[-1, 1]$  is 3.10%, with estimated coefficient of WOTA = -5.2336 ( $p = 0.07$ ). The predicted signs, significances and estimated coefficients of independent variables are similar to those in Table 8 under different accumulation windows for CAR.

***Including Industry Dummies to Control the Possible Effect of Industry in Table 8.***

In order to control the possible effect of industry on our results in Table 8, we include 17 industry dummies in regression (3). (Since there are 18 industries in our 301 sample firms,  $N-1=17$  dummy variables were constructed to avoid the multi-collinearity problem.) Our empirical results show that foods, plastics, construction, and tourism industries have significantly higher market reaction to the disclosure of impairment losses than that of electronic industry. (The coefficient of Foods Industry indicator is 2.2482 ( $p < 0.01$ ), the coefficient of Plastics Industry indicator is 1.4593 ( $p = 0.06$ ), the coefficient of Construction Industry indicator is 0.8931 ( $p = 0.08$ ) and the estimated coefficient of Tourism Industry indicator is 4.1418 ( $p < 0.01$ ).) However, the market reaction of automobiles industry (coefficient = -3.8765,  $p = 0.10$ ) is lower than that of electronics industry. All other industries have indifferent market reaction to the disclosure of impairment losses with electronics industry ( $p > 0.10$ ). Furthermore, signs and significances for other independent variables, such as WOTA (coefficient is -11.2125,  $p = 0.01$ ), SIZE (coefficient is 0.2630,  $p = 0.02$ ), and UE (coefficient is -0.0019,  $p = 0.86$ ), are similar to those in Table 8. Including industry dummies does not change our conclusions from Table 8.

***Deflating Independent Variables by the Stock Price at the Beginning of the Quarter in Table 8.***

In examining market reaction to the disclosure of impairment losses, we deflate independent variables in regression (3) by stock price at the beginning of the quarter, instead of total assets in Table 8, and rerun the regressions. Our empirical results show that the coefficient of WOTA is -12.1277 ( $p < 0.01$ ), the coefficient of SIZE is 0.2685 ( $p < 0.01$ ), and the coefficient of UE is -0.7405 ( $p = 0.22$ ). The validity of the conclusion of original Table 8 is evidenced by using a different deflator for independent variables.

***Using Annual Data, Instead of Quarterly Data, to Examine the Determinants of Early Adoption of SFAS No. 35.***

In addition to quarterly data, we further use annual data to run a logistic regression in Table 5 to examine the determinants of early adoption of SFAS No. 35 for listed firms in Taiwan. Empirical results show that the coefficient of BATH is -7.5888 ( $p = 0.05$ ), coefficient of MTB is -0.7924 ( $p = 0.02$ ), and other variables are insignificant. The results using annual data are similar to those presented in Table 5 in quarterly data in terms of predicted signs, significances and coefficients.



## VI. CONCLUSIONS AND SUGGESTIONS

This paper explores first the determinants of the adoption timing of SFAS No. 35 for listed firms in Taiwan. Our empirical results show that firms that early adopt SFAS No. 35 are significantly associated with management's reporting motivations (such as taking "big baths"), as well as operational factors (such as recovery abilities of long-lived assets under accrual basis ( $\Delta$ SALE) and under cash basis ( $\Delta$ OCF)).

Second, we investigate the determinants of impairment losses decisions for listed firms in Taiwan. We document that: (1) For early adopters, the impairment losses decision is only associated with management's reporting motivations (such as "taking big baths", "income-smoothing" and "changes in top management"). (2) For non-early adopters, the impairment losses decision is not only associated with management's reporting purposes (such as "income-smoothing", "changes in top management"), but also the firm's operational factors (such as RET,  $\Delta$ SALE). Furthermore, we analyze the impairment losses decision for five types of assets (such as long-term equity investments, fixed assets, identifiable intangible assets, goodwill, and idle assets). We find that management's reporting motivations (such as "taking big baths" and "income smoothing") would affect the amount of impairment losses for all types of long-lived assets except for good will. The determination of impairment loss for goodwill is less likely driven by management's reporting motivations since restoration of previously recognized impairment loss of goodwill is not allowed under SFAS No. 35, managers would not use impairment loss of goodwill to manage earnings.

Finally, we examine market reaction to the disclosure of impairment losses. Our empirical results show that: (1) the stock market reacted negatively to the impairment losses disclosure in the 2004 *audited* annual report for early adopters, but not for the fourth quarter unexpected earnings, consistent with Francis *et al.* (1996); and (2) the stock market did not react significantly to the impairment losses disclosure in the *unaudited* 2005 first-quarter report, but did react positively to the 2005 first-quarter unexpected earnings. Further analyzing the impairment losses of the five types of long-lived assets, we find investors responded negatively only to impairment losses of long-term equity investments and that of idle assets. Impairment losses of other types of assets had no significant market reaction.

Our study has following limitations: First, a firm's operational factors that we consider in this paper are limited to external information. Internal information, such as actual use condition of long-lived assets, is not included since these data are unavailable. Secondly, the determinants of impairment losses decisions will be driven by the economic environment in the long run. A firm may recognize a large amount of impairment losses in the period of economic boom. Since our sample firms are limited to those that adopted SFAS No. 35 in the fourth quarter of 2004 and the first quarter of 2005, our time periods are too short to include the effect of changing economic environment.

Since SFAS No. 35 allows restoration of previously recognized impairment losses, future studies can explore whether management has used restoration of previously recognized impairment losses to substitute or combine discretionary accruals to manage earnings after SFAS No. 35 was issued. In addition, we only examine the short-term market reaction to the disclosure of impairment losses. Future studies may examine the

long-term market reaction to the recognized impairment losses.

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# 認列資產減損時點與金額之決定因素 及其市場反應

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**摘要：**長久以來，台灣之一般公認會計準則對企業之固定資產係以歷史成本減除累計折舊入帳，在消費者物價指數累積上升達 25% 時固定資產得以「資產重估」方式來反應資產之增值，但在 35 號公報發佈前，台灣企業對資產之會計處理，從未考慮資產可能發生之價值減損，導致財務報表「只能上調不能下調」之不對稱情況，嚴重扭曲財務報表之真實性，無法充分反應技術進步、景氣循環等造成資產價值之快速變化。此種無法充分反映長期資產價值之會計處理方式，久為會計界所詬病。為與國際會計準則接軌並提高財務報表之資訊透明度，中華民國會計研究發展基金會財務會計準則委員會乃參考國際會計準則第 36 號公報及美國會計準則第 121 號公報與第 142 號公報，於 2004 年 7 月發布財務會計準則第 35 號公報《資產減損之會計處理準則》，對會計年度開始日在 2005 年 1 月 1 日（含）以後之財務報表適用之，但得提前適用。

本文首先探討台灣上市櫃公司選擇適用 35 號公報之「時點」之決定因素，根據文獻研究歸納為「報導動機」與「營運因素」兩大領域。實證結果發現：台灣上市櫃公司是否提前採用 35 號公報主要是受到公司管理當局「一次清洗」（take a big bath）之「報導動機」，以及長期資產回收性（應計基礎下及現金基礎下）等「營運因素」之影響。

基於「報導動機」與「營運因素」，本文進一步探討台灣上市櫃公司認列資產減損「金額」之決定因素，實證結果發現：（一）提前適用 35 號公報之公司，其所認列資產減損之金額大小僅受到公司管理當局之報導動機（洗大澡、盈餘平穩化、公司高階管理當局異動）所影響；（二）準時適用 35 號公報之公司，其所認列資產減損之金額大小除受公司管理當局之報導動機（盈餘平穩化、公司高階管理當局異動）所影響外，亦受到企業營運因素（報酬衡量指標、銷貨成長性）之影響，對準時適用 35 號公報之公司而言，其所

認列資產減損之金額大小不受屬報導動機之洗大澡動機之影響。另外，本文亦探討不同類型之資產減損金額之決定因素，研究發現公司管理當局之盈餘管理行為（洗大澡及盈餘平穩化）會影響到公司認列商譽以外之其他類型資產（長期投資、固定資產、無形資產及閒置資產）減損之金額，但公司認列商譽減損損失並未受到公司管理當局盈餘管理之行為所影響，本文推論可能係因 35 號公報規定已認列之商譽減損損失不能迴轉，故公司管理當局不會透過認列商譽減損損失來進行盈餘管理。

最後，本文探討公司宣告認列資產減損之股票市場反應，實證結果發現（一）於 2004 年第四季年報（經會計師簽證）中提前適用 35 號公報之公司宣告認列之資產減損時，資產減損金額有顯著之負面之市場反應，然而，於 2005 年第一季季報（未經會計師簽證）準時適用 35 號公報之公司宣告認列之資產減損時，資產減損金額卻無統計顯著之負面之市場反應；（二）與年報同時發佈之第四季不計資產減損之異常盈餘無顯著之市場反應（此與 Francis *et al.* 1996 之實證結果一致）；但第一季不計入資產減損之異常盈餘則有顯著之市場反應。關於此點，本研究除 Francis *et al.* 之解釋外，並增加台灣情況之解釋，亦即台灣年報申報日與第一季季報申報日期相同所致。美國證管會規定美國公開發行公司年報與季報申報日期不同（年報須於 3 月 31 日前，第一季季報須於 4 月 15 日前申報），而台灣證期局規定台灣公開發行公司之去年年報與今年第一季季報皆須同時於今年 4 月 30 日申報，因此，在 4 月底年報所揭露去年第四季盈餘資訊市場已經知曉，本年第一季未預期盈餘才真正有資訊內涵，實證結果反映此項事實。

**關鍵字：**資產減損、台灣財務會計準則第 35 號公報、決定因素、市場反應