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人壽保險業財務報告窗飾行為之實證研究

An Empirical Study of Window Dressing Behavior in Taiwan Life Insurance Industry

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摘要

在 2006 年台灣實施第三十四號會計公報後，台灣的公司被要求必須在財報上揭露「一般金融商品」及「衍生性金融商品」的分類及價值衡量。受此公報影響最大的產業莫過於投資許多商品的保險業，因此我們針對保險業研究，探討保險公司是否會藉由金融商品的分類以及金融商品投資的損益來美化窗飾財務報表。我們發現資產報酬率確實和保險公司的盈餘操縱行為呈現高度相關性，而股東權益報酬率則會影響保險公司對於金融投資商品的分類。另外我們還發現公司的財務槓桿和盈餘操縱行為呈現顯著的負向關係，以及資產流動比率對於公司金融資產分類有顯著影響，而對於盈餘操縱行為則有顯著正向關係。和過去文獻相比，我們提供一個不一樣的直觀角度來探討保險公司的金融商品分類行為以及盈餘操縱行為，提供會計制度的立法者從不同面向來設立規範，也為社會大眾提供評斷保險公司的基礎。

關鍵字：財務窗飾、盈餘操縱、保險業會計、金融資產分類

Abstract

After the implementation of Statement of Financial Accounting Standard NO.34 (SFAS NO.34) in Taiwan in 2006, the companies have to disclose the securities investment information in the statement of financial reportings. The securities investment could mainly be divided into three categories: available-for-sale, for trading, and held to maturity. The insurance industry holds a large amount of securities investment, and is especially more affected by the SFAS NO.34 significantly than other industries.

We develop several proxies to measure the characteristics of insurance companies which are more inclined to do earning management and gains trading through classification of securities investment. We find the insurance companies with higher return on assets (ROA) and return on equity (ROE) will tend to do more gains trading and classify more securities investment to for-trading category. We also find the leverage ratio plays an important role when insurance companies engage in gains trading, and the leverage ratio is negatively correlated with gains trading. On the other hand, the current ratio is also an important factor for insurance companies to engage in gains trading and classify the securities investment.

Our research offers a different method to explore the window dressing behavior of insurance industry and further offer some suggestions for the accounting setter to take into account for the accounting standard setting in the future.

Keyword: Window dressing, earning management, gains trading, insurance accounting, financial asset classification

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Chapter 1 Introduction

Accounting window dressing has been always concerned by lots of shareholders and regulation agency. Especially according to the Statement of Financial Accounting Standard NO.34 (SFAS NO.34), the implementation requires public companies to disclose their usage of derivatives in Taiwan since 2006. Recent years there has beena substantial shift from amortized cost-based accounting to primarily fair value-based accounting for financial instruments. The new accounting standard requires that firms classify investment securities into three categories based on their intent to hold the securities, including: 1. Financial assets at fair value through profits and loss (for-trading financial asset) 2. Available-for-sale financial assets 3. Held-to-maturity financial assets. The financial assets at fair value through profits and loss and available-for-sale financial assets are accounted for at fair value. And the held-to-maturity financial assets could be accounted for at amortized historical cost. The financial assets accounted for at fair value with unrealized gain and loss will be recognized on the balance sheet as part of investment portfolio and as a part of book value of shareholders' equity.

The implementation of SFAS NO.34 asks managers to classify the investment portfolio clearly. If the manager classifies the investment securities into available-for-sale category, the unrealized gain or loss will increase or decrease the shareholders' equity. This may increase the volatility of shareholders' equity and affect other key numbers that investors will concern. Because the unrealized gains or loss will recognize in the shareholders' equity instead of income statement directly, this will have less influence on the net income, with no direct influence on the stock price. On the other hand, the managers primarily seeking to mitigate the volatility of accounting will classify the investment securities into for trading category. But the managers still have to face the problem of liquidity risk if they classify the portfolio as held-to-maturity. If the managers classify the portfolio into the category of financial assets at fair value through profits and loss, the financial assets accounted for at fair value with unrealized gains and loss will be recognized on the income statement so that will influence the volatility of net income. And the volatility of net income will make investors worry about the company's ability to profit. So when the managers decide to

classify the securities into the category of financial assets at fair value through profits and loss, they have to concern about the volatility of net income.

We know that most insurance companies invest lots of financial portfolio in the securities like treasury bonds, corporate bonds, and government bonds. The insurance companies have to make sure that they could meet the reserve for life insurance liability. The insurance companies have to manage their assets for long-term to make sure that they will have the ability to meet the potential liability in the future. As a result, they invest in a lot of long-term financial assets, especially in bonds and other securitization products or marketable securities. We know that those investments are always influenced by lots of different factors like interest rate, economic growth or other macroeconomic factors, even the specific factor of individual investment. The investment performance will represent the ability of the managers in company. So the managers have the intention to do the window dressing for financial reports. There are many literatures about the actions of the managers to do the window dressing in financial report. They use different methods to make the number look better and meet the needs of investors.

In this dissertation we want to know which type of company will tend to classify the security portfolio into available-for-sale category or what type of company will tend to classify the security portfolio into held-to-maturity financial category. We also want to know after the implementation of SFAS NO.34, whether the insurance company managers intend to classify the financial assets into the available-for-sale category in order to prevent the net income from plummeting. And this could further cover the difficult situation of the insurance company. We doubt reasonably that most insurance companies want to sustain the net income and profits, so they don't expect the large change of the company's earning and hope the stock price will not fluctuate sharply. Thus they have the intention to do the earnings management. We want to know whether the implementation of SFAS NO.34 will increase the ability and control power of earnings management for insurance company. Many insurance companies experienced a large loss in financial portfolio nominal value during the financial crisis in 2008. After the financial crisis, our regulation agency decides to make some change about reclassification according to the international accounting standard NO.39 "financial instrument: recognition and measurement" The accounting research and development foundation publish the2nd revision of SFAS NO.34 in 2008, which releases the original restriction of the

reclassification[1]. The revision has a big influence on the financing industry. The regulation asks the companies to recognize the financial asset according to different valuation methods. The original value recognition should be based on the original acquisition cost. But the afterward valuation has to be based on fair value for some financial asset classify category.

Our research is different from the previous literatures (Jordan, 2011a; Jordan, 2011b; Huang, 2011); we develop several different proxies from the previous researches to measure the situation that the insurance company may intend to classify the financial assets into the different categories. Most investment securities for insurance companies can be divided into two categories: available-for-sale financial asset category and for-trading financial asset category. We further clarify the relationship of gains trading between different insurance companies with different financial situation and different need of liquidity. We try different proxies to measure the liquidity and risk tolerance to identify the reasons why insurance company managers will make up the financial reporting.

[1]According to the 2nd revision of SFAS NO.34, there are two situations that will allow companies to reclassify the financial assets at fair value through profits and loss into the other category, like available-for-sale financial assets or held-to-maturity financial assets. The first one, if the company has the intention or ability to hold the financial assets until foreseeable future or maturity date, and the financial assets qualified the regulation of account receivables or lending. The second one, in some very specific situation, like global financial crisis. On the other hand, the 2nd revision of SFAS NO.34 also allow the company reclassify the financial assets like available-for-sale into the lending and account receivables if the company has the intention and ability to hold the financial assets until foreseeable and maturity. Although the revision releases the regulation of reclassification, it still asks much disclosure information about the reclassifying financial assets. The disclosure information includes all the book value, fair value change, and the realized profits and loss of the income statement.

Chapter 2 Literature review

With the globalization of enterprises, the accounting rules in different countries are in line with the International Accounting Standard (IAS). The accounting rule in our country also implements SFAS NO.34 to meet the trend of international accounting rule. The SFAS NO.34 was mainly revised from international financial reporting standard NO.39 “financial instruments: recognition and measurement”. SFAS NO.34 starts to introduce the concept of fair value of the financial assetsin order to increase the transparency and information quality of financial report. However, after the implementation of SFAS NO.34, there are some queries about this accounting standard. Especially after the financial crisis in 2008, many critics doubt that the fair value measurement of financial assets will make the financial crisis even more serious.

We have three parts in the chapter. The first part we try to explore the definition of the earnings management. We will review some of the literatures that focus on the insurance companies earning management. The second part we will review the literatures about international financial accounting principles and statement of financial accounting standard, which regards to the financial asset classification, recognition, and measurement. The last part, we will review the literature regarding the implementation and the revision of SFAS NO.34 in Taiwan.

The earning management literatures try to understand why managers want to manipulate earning, and how they do so and the consequence of this behavior. There are no universal definitions for earning management. Beattie et al. (1994) notes that it is “a process of taking deliberate step within the constraints of generally accepted accounting principles to bring about a desired level of reported earnings.” Healy and Wahlen (1999) review many literatures and have a more detailed definition about earning management. They say “Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers”. This further discloses the content of earning management. When the managers want to use judgment in financial reporting, it

offers the chance to manipulate the financial reporting numbers. On the other hand, the earning management also gives the chance for managers to mislead stakeholders. It could arise when the managers have access to information which is only available inside but not for outside stakeholders. So that earning management is not transparent to outsiders. The stakeholder may have anticipation about the earning management as well. Last, the earning management has some costs and benefits. The cost of earning management is the potential resource misallocation that arises from earning managements. Benefits include the potential improvement in managements' credible communication of private information to external stakeholders, which will improve resource allocation decision. So it is critical for accounting reporting standard setters to understand when standard permits the managers to judge in accounting reporting and increases the value of information and when the standard reduces it. There are also some literatures offering another explanation about earning management. They think the managers earning management will tend to meet the expectation of financial analyst or management, which represents the public expectation about the future earnings. Burgstahler and Eames (2006) find that firms manage earnings to meet the financials' forecast. To be more precise, they find the firms will avoid reporting lower earnings than the financial analysts' forecast. In addition, Abarbanell and Lehavy (2003) use financial analysts' stock recommendation (namely, to buy, hold or sell) to predict the earning management behavior. They find the firm which gets a recommendation to buy will be more likely to manage earning to meet the financial analysts' earning expectation. In contrast, the firm which receives sell recommendation will be more likely to show negative unexpected earnings.

Petroni (1992) researches on the property casualty insurance companies and he indicates the managers with financially weak insurer will be more likely to bias downward their claim loss reserve estimates than relatively financially strong insurers, even controlling for tax rate and exogenous economic factors. The evidence also shows the managers may understate the reserve intentionally to avoid or postpone the attention from regulatory agency.

Bearver and McNichols (1998) focus on the property casualty insurers and indicate the substantial serial correlation in year to year loss reserve development, and suggest that management exercise discretion about reported loss reserve. They think the reported loss reserves do not fully disclose available information. Their findings also suggest the required disclosures about loss reserves may permit investors to

identify for manipulation of accruals by property casualty insurers. And this is different from what Bernard and Thomas (1990) found. Bernard and Thomas (1990) do not find the loss reserves able to identify or fully adjust for manipulation in accruals.

Petroni, Ryan, and Wahlen (2000) find that larger discretionary loss reserve revisions imply lower future profitability and higher risk. Their findings also suggest the property casualty insurers' loss reserve development disclosures provide a rich data to assess and distinguish the managements' manipulation of loss reserves. Moreover, this research also indicates the disclosures information is a good resource and is useful for assessing firms' future profitability, risk and market value.

Beaver, McNichols, and Nelson (2003) indicate the property casualty insurers with small positive earnings understate loss reserves relative to insurers with small negative earnings. There are also evidences showing the loss reserves are managed across the entire distribution of earnings. They find significantly higher loss reserve development in the region immediately above zero relative to the region immediately below zero for public and mutual companies. Furthermore, they don't find significant difference between private companies with small profits and those with small loss. They note that the use of loss reserve management to avoid loss is more often seen in the sample of healthy insurers.

Jordan, Clark, and Smith (2011b) research on the insurance industry and provide empirical evidence that the earning management under SFAS NO.115 is occurring. They examine evidence of gain trading in insurance industry, which may be affected by SAFS NO.115 mostly. They find that both return on asset (ROA) and leverage will significantly influence the insurance company for gain trading. The empirical test also proves that the insurance company with lower ROA will be more inclined to do the gains trading. This suggests that gains trading is occurring to boost the income. Furthermore, they find that the leverage also plays an important role when the insurance companies decide to do the gains trading. The insurance companies with higher leverage (i.e., more risky entities) will have higher ratio of net realized gains to total available-for-sale financial assets. That is, the riskier insurance company may be boosting the income through gains trading.

Jordan, Clark, and Anderson (2011a) further exam the influence of the implementation of SFAS NO.130 for the insurance industry. They exam the gains trading behavior for a sample of companies in the insurance industry both before and

after the implementation of SFAS NO.130. Before the implementation of SFAS NO.130, these unrealized gains and loss of available-for-sale investment securities affected the shareholders' equity of a company, but their effect was buried in the footnote. With SFAS NO.130, the companies have to report prominently the unrealized gain or loss of available-for-sale asset in a financial statement as a component of comprehensive income. They conclude the implementation of SFAS NO.130 may be one of the factors that cause the decline in the level of gains trading. It seems the SFAS NO.130 provides an increasing transparency in financial reporting, and then standard seems to provide a needed improvement in the overall financial reporting model by reducing the earning management behavior.

Actually, before the international accounting reporting standard, the statement of financial accounting standard (SFAS) NO.115, which became effective in 1994, established accounting guideline for all companies with investment in debt and equity securities. The SFAS NO.115 mostly has a direct impact on the financial instruments, which always account for a large amount of financial assets.

The final part of literature review we will explore the influence of implementation of SFAS NO.34 in Taiwan. The implementation of SFAS NO.34 is in 2006, and the statement of financial reporting mainly regulates the recognition of value of financial assets. The companies have to evaluate the financial asset through fair value accounting method. The statement of accounting standard will influence the volatility of company earnings and the income smoothing decision of companies.

According to Wu (2010), he researches the relationship between discretionary accrual and derivatives. He finds that after the implementation of SFAS NO.34, the companies in the sample will reduce the usage of financial derivatives; when the companies with higher liability ratio, they will be more likely to use the discretionary accrual and financial derivatives to reduce the volatility of earnings; the companies with higher assets size and export ratio will be inclined to use the financial derivatives. On the other hand, according to Wang, Chang, and Cheng (2010), they find the enforcement of SFAS NO.34 in Taiwan initially has a negative effect on market liquidity and market efficiency; SFAS NO.34 also increases the market volatility since the financial reports are influenced by financial commodity and the volatility of earnings also increases. However, as time goes by, the implementation of SFAS NO.34 further increases the transparency of financial statement, market liquidity, and market efficiency. It decreases the volatility of market as well. They indicate that due

to the implementation of new accounting principle, the firms will provide more transparent information to outside investors. These will reduce the information asymmetry and have a positive effect on the security market. In contrast, there are some literatures that do not find the obvious evidence about the influence of implementation of SFAS NO.34. Hsieh and Ho (2010) indicate the implementation of SFAS NO.34 will not influence the usage of derivatives for companies. It appears that the financial strategy and risk management strategy of companies are mature, and will not bring big change because of the incident happened. They also find the factors which will influence the company usage of derivatives are as follows: market value of assets, asset book value to asset market value, the ratio of long-term liability to total assets, and the category of industry. They also find that the companies will not change their usage of derivatives to hedge even after the financial crisis in 2008.

Chapter 3 Hypothesis Development and Methodology

We conduct empirical tests to test the hypothesis we develop. The assumptions are as follows:

Hypothesis 1

We assume that when the SFAS NO.34 implemented, the insurance companies with lower ROA and ROE may intend to classify financial assets into the category of available-for-sale financial assets rather than the category of for-trading financial assets.

The insurance companies with lower ROA and ROE have to face the loss and lower income. As a result, they may classify the financial assets to available-for-sale financial assets in order to makeup the profit ability. Furthermore, they may want to decrease the volatility of ROA and ROE, and they will intend to classify the financial assets into available-for-sale category rather than for-trading portfolio. Additionally, from the point of view of investors, they are likely to focus more on the income statement instead of the unrealized net income of the available-for-sale financial assets in the statement of financial position, 紀登順（2007）, and 蘇薇君（2007）. Consequently, the insurance company will have the incentives to window dress financial report through classifying the financial assets into different categories. We try to figure out whether the insurance will further manipulate the number, which is relevant for investors through classifying the financial assets.

Hypothesis 2

We assume that when SFAS NO.34 implemented, the insurance companies with lower return on asset (ROA) and return on equity (ROE) will intend not to classify financial assets into the category of financial assets at fair value through profits and loss (for-trading portfolio) in order to makeup the profit ability.

Hypothesis 3

We expect that when the SFAS NO.34 implemented, the insurance companies with lower ROA and ROE would be more inclined to engage in gains trading to

makeup the number relevant to the stock price. As we mention, the investors concern the net income in the income statement. The profit ability is also a standard to measure the performance of insurance company managers.

3.1 Dependent variables

The defined variables are as follows: AFS% is the ratio of available-for-sale financial assets to total investment securities (includes:1. Financial assets at fair value through profits and loss (for trading portfolio). 2. Available-for-sale financial assets. 3. Held-to-maturity financial assets.) We use this variable to measure the insurance companies' intension to engage the window dressing of financial reports. We expect that the insurance companies with lower ROA and ROE will classify more investment securities to the available-for sale financial asset category in order to increase the return on asset and shareholders' equity. We know that a gain or loss of available-for-sale financial asset needs to be recognized in the other comprehensive income category. The gain or loss of for-trading financial asset has to be recognized in the profit or loss category of net income. As a result, we assume that if the insurance companies with lower ROA or ROE have a loss in the for-trading financial asset, when they have the intention to classify the for-trading financial asset to the available-for-sale financial asset. That is, the loss is recognized in the other comprehensive income category instead of in the net income category finally. This loss of investment securities not only reduces the shareholders' equity but also increases the net income. This will help the insurance companies hide the loss on the for-trading financial asset. Furthermore, this reclassification increases the ROA and ROE. We assume that the insurance companies' managers, by doing so, window dress their financial report, and make sure they meet the expectations of investors and shareholders.

FT% is the ratio of financial assets at fair value through profits and loss to total investment securities. We use this variable to measure the intension of the insurance companies to engage the window dressing. The for-trading financial asset will affect the profit or loss in the income statement directly. This variable not only provides the liquidity for insurance companies but also has direct effect on the ROA and ROE. As a result, when the insurance companies face loss in the for-trading financial asset, they will be less inclined to classify the financial assets to this

category. We also want to know how the other variables affect the classification of financial assets. We also add variables that relate to the classification of financial assets according to the previous research about the earning management or window dressing.

NFT% stands for net securities investment income divided by the sum of financial assets at fair value through profits and loss (for trading portfolio) and available-for-sale financial assets. This variable provides a relative measure amount of the insurance companies to engage the gains trading during the period. We expect that the companies with lower ROE or ROA will do more active gains trading. Gains trading will help insurance companies with loss on the marketable securities to window dress the financial report and keep the operating performance well. This implementation of SFAS NO.34 and revision give the companies more freedom to decide the classification of financial investment securities by themselves. We also want to exam whether the insurance companies with different ROE and ROA will be more active to engage in the gains trading after the implementation of SFAS NO.34. Note the higher value of NFT% represents more active gains trading.

3.2 Independent variables

We define the independent variables X as below：ROA、ROE、leverage(debt/assets)、current ratio(current assets/current liability)、ln(assets)

The expected influence of independent variables to the dependent variables are shown in Table 1.

Table 1 The expectation of influence

Y / X	AFS%	FT%	NFT%
ROA	-	+	-
ROE	-	+	-
Leverage	+	-	+
Current ratio	-	+	-
ln(assets)	+	-	-
Intercept	?	?	?

ROA

We use net income in the end year divided by the total asset in the end year. Return on asset ratio shows how profitable a company is relative to its total assets. This variable provides a measure of the current earning level and, this will provide the incentive of how a company will need to engage in the gains trading. Entities with lower ROA, rather than entities with higher ROA will engage in the gains trading to improve their earnings. Firms with relatively low ROA may be inclined to classify the financial assets into the available-for-sale category because they need to reduce the volatility of ROA. Jordan et al. (2011a, 2011b) uses the insurance industry as sample to research, and they find that ROA significantly influences the insurance companies to engage in gains trading. The ROA is negatively relative to the gains trading for insurance company. Therefore, we expect the ROA will have a negative relation with the available-for-sale variable and the ratio of net income to financial assets at fair value through profits and loss (for trading portfolio).

ROE

ROE measures the rate of return on the shareholders' equity of the common stock owner. This variable shows how well a company uses investment fund to generate earning growth. ROE is best used in comparing different companies in the same industry. We know that the company with higher ROE means that it may have higher growth rate if the company reinvests in the future. Entities with relatively low ROE may give the managers more operating pressure to reduce the volatility of net income from the investment securities. On the other hand, the insurance companies investors and shareholders put more attention on the ROE. We know that higher ROE represents better operating performance of managers, and the companies also have better stock return (Clubb, Naffi, 2007). We assume the entities with lower ROE will classify more investment securities to the available-for-sale category instead of the for-trading category. And the managers will have more intention to engage in the gains trading than the managers of the insurance companies with higher ROE. The insurance company managers may hide the loss from the investment securities by reclassifying from for-trading category to available-for-sale category. This will makeup the ROE number and could also reduce the impact to stock price.

Leverage

The ratio represents the year-end liability to year-end total asset. Jordan et al.(2011), Christie(1990) suggest that leverage is related to the earning management for entities. Entities with higher leverage pose higher risk to creditors and investors, and therefore, they usually have the incentive to manipulate the earnings to lessen the investors and creditors' perception of firms' risk. But still some literatures like Jordan et al. (2011) suggest that the entities with a large amount of debt may have less need to manage its earnings through gains trading because their earnings are already boosted by the excess return resulting from the positive financial leverage. We expect the companies with a large amount of debt will intend to classify the financial asset into the available-for-sale category to reduce the volatility of net income and to lessen the investors' perception of firms' risk.

Current ratio

Current ratio represents the ratio of current assets to current liability. This ratio measures the liquidity demand for a company. The entities with higher current ratio will have higher demand to repay the short-term liability. That is, the entities will have fewer incentives to classify the financial assets into the available-for-sale category. On the other hand, the entities with lower current ratio, may classify the financial assets into the available-for-sale category instead of the for-trading financial asset category. As 黃劭彥（2011）notes, they find the companies with higher current ratio will be inclined to make the gains trading. That is, the current ratio will be positively related to the gains trading. We expect that the variable will have positive effects on the ratio of net income to financial assets at fair value through profits and loss (for trading portfolio).

ln(assets)

This variable mainly measures the size of entities; we use the natural log of the insurance company assets. The log of assets was used rather than the absolute assets size because the latter one is usually not normal distributed. Logging is the most usual means that we used as a variable and will not sacrifice the explanation power of the asset size. There are many literatures trying to find the relationship between earning management and the entities' assets. Guenther (1994), Jordan et al.

(2011), and 黃劭彥 et al. (2011) indicate that the size may affect the level of earning management. Companies with different asset scale will face different operation pressure. For example, the managers of large companies may face more intense pressure than those of small companies. To achieve the goal of earning, the manager may be more inclined to engage in gains trading. According to 黃劭彥 et al. (2011), they find that the asset size exactly has a significant effect for the company to classify the financial asset into different categories. They note that the more assets a company has, the more likely the company will classify more financial assets into available-for-sale category. This explains companies with large asset scale have higher tolerance for the volatility of shareholders' equity, so they are inclined to hold more available-for-sale financial assets.

3.3 Methodology

Research design

This dissertation evaluates the effects of ROA and ROE within the context of the available-for-sale financial assets, financial assets at fair value through profits and loss, and net income to total financial assets at fair value through profits and loss regression specification. We use the panel data model instead of only cross-section or time-series model. A common advantage of panel data over cross-section and time-series data is that panel data use both interpersonal and intertemporal variations of variables, whereas cross-sectional and time-series data use only one of them. See Myoung (2002) Consequently, model parameters can be estimated more precisely in panel data. This advantage is more than simply increasing the sample size in cross section or time series.

Compared with cross-section data, panel data hold a number of advantages. First, cross-section data provide only a snapshot at a given time, while panel data can show whether the cross-section image is stable or not over time by allowing time-varying parameters. Second, whereas cross-section data have difficulty controlling for unobserved variables, panel data can control for them much better either by removing them or by providing more instruments; the ability to remove time-invariant unobservable variables can be the single most important advantage of panel data. Third, panel data allow dynamic models with lagged response variables and regressors; with this, short-run effects and short-run dynamic features can be found,

whereas cross-section shows mostly long-run effects.

Compared with time-series data, panel data have a number of advantages. First, an arbitrary form of temporal correlations can be allowed for the error terms; this task, although possible, requires more assumption in time-series. Second, economic theories are usually developed at the individual level (an economic agent optimizing some function), not at the aggregate level, and with panel data, we can test for the theories, which is difficult to do with aggregate time series data: restrictions at the individual level do not necessarily hold at the aggregate level, nor is what holds at the aggregate level true at the individual level. Third, it is difficult to allow for time-varying parameters in time series (imagine T-many parameters for T-many observations). Panel data can allow for time-varying parameters easily (imagine T-many parameters for TN-many observations), such that, panel will mitigate the degree of freedom reducing problem.

Below is a simple panel data model

(1) $\mathbf{Y_{i,t}=\alpha+\beta X_{i,t}+\mu_i+\xi_{i,t}}$

If $\boldsymbol{\mu_i}$ is related with components of $\mathbf{X_{i,t}}$, then we will call the model a " related-effect" model; otherwise, it is called an "unrelated-effect" model. And we called the former "fixed effect" and the latter one is called "random effect".

There are a couple of other cases where the term "fixed effect" might be appropriate:

(a) $\boldsymbol{\mu_i}$ is estimated along with $\boldsymbol{\beta}$

(b) a likelihood function conditional on $\boldsymbol{\mu_i}$ is used.

(c) The sample is equal to the population; there is no sample error to make $\boldsymbol{\mu_i}$ random.

Fixed effect

The general fixed effect regression equation for panel data to be estimated is as below:

(2) $\mathbf{Y_{i,t}=\alpha+\beta X_{i,t}+\mu_t+\eta_i+\xi_{i,t}}$

The subscripts *i*, *t* represent company and time period, respectively. **Y** is the dependent variable, that is, the ratio of available-for-sale financial assets to total financial securities, the ratio of financial assets at fair value through profits and loss to total financial assets, and the ratio of net income to financial assets at fair value through profits and loss (for trading portfolio). **X** is the set of company-varying and time-varying explanatory variables. The proxies are ROA,ROE, current ratio,

leverage, natural log of total assets, and cash and cash equivalents, while **α** is the scalar, **β** is the vector of coefficient to be estimated. Ultimately, $\mu_t$denotes the unobservable individual specific effect ($\mu_t$is time-invariant and accounts for any individual specific effect that is not included in the regression.), and $\eta_i$is the unobservable time specific effect. The reminder disturbance $\xi_{i,t}$varies with individual and time and can be thought of as the usual disturbance in the regression. This paper uses the panel data, which is suitable to use the fixed effect model (FEM) and random effect model (error component model, ECM). FE explores the relationship between predictor and outcome variables within an entity (country, company, person, etc.). Each entity has its own individual characteristic that may or may not influence the predictor variables. We could do that by the dummy variable technique to estimate the individual characteristic effects. Such is known as least-squares dummy variable (LSDV) model. Therefore we could write :

(3) $$Y_{i,t} = \alpha + \beta_1 X_{1,it} + \ldots + \beta_K X_{k,it} + \gamma_2 E_2 + \ldots + \gamma_n E_n + u_{it}$$

Where:

- **Y**is the dependent variables, and i = entity, t = time.
- $X_{k,it}$represent the independent variables
- **β** is the coefficient of the independent variables.
- γ is the coefficient for entity dummy variables
- $E_n$is the entity n's dummy variables that represent individual effect.
- **u**is the error term.

Just as we use the dummy variables to account for individual effect, we can allow for time effect in the sense that the function shifts over time because other variables changed over time. Such time effects can be easily accounted for if we introduce the time effect dummy variables, one for each year. In (3) we combine the entity effect model and the time effect model to have the entity and time fixed effect regression model.

(4) $$Y_{i,t} = \alpha + \beta_1 X_{1,it} + \ldots + \beta_K X_{k,it} + \gamma_2 E_2 + \ldots + \gamma_n E_n + \delta_2 T_2 + \ldots + \delta_t T_t + u_{it}$$

where:

- **Y**is the dependent variables, and i = entity, t = time.
- $X_{k,it}$represent the independent variables
- **β** is the coefficient of the independent variables.
- γ is the coefficient for entity dummy variables

- $\mathbf{E_n}$is the entity n's dummy variable that represents individual effect.
- $\boldsymbol{\delta}$ is the coefficient for time dummy variable
- **T** is the time variable that represents time effect.
- **u**is the error term.

If the $\mathbf{E_n}$and **T** are assumed to be fixed parameters to be estimated and the remainder disturbance are stochastic with $\mathbf{u} \sim iid(0,\sigma^2_u)$, then the (4) represents a two-way fixed effects error component model. The $\mathbf{X_{k,it}}$are assumed independent of the error term **u** for all*i* and *t.* We could test for joint significance of the dummy variables.

H_0: $\boldsymbol{\delta}_2$=……=$\boldsymbol{\delta}_t$=0 and $\boldsymbol{\gamma_2}$=.....=$\boldsymbol{\gamma_n}$=0

Next, we could test for the existence of time effects given individual effects, i.e.

H_2: $\boldsymbol{\delta}_2$=……=$\boldsymbol{\delta}_t$=0 given $\boldsymbol{\gamma}\neq 0$ for N=2,…,n

Similarly, we can test for the existence of individual effects given time effects, i.e.

H_3: $\boldsymbol{\gamma_{2=}}$.....=$\boldsymbol{\gamma_n}$=0 given $\boldsymbol{\delta}\neq 0$ for T=2,…,t

Random effect

The second model this paper uses is the random effect model. As to the fixed effect model, we have to estimate the entity and time effect by using too many dummies and that will cause the problems, according to Kmenta: we fail to include relevant explanatory variables that do not change over time (and possibly others that do change over time but have the same value for all cross-sectional units), and that the inclusion of dummy variables is a cover up of our ignorance. The loss of degrees of freedom can be avoided if the $\boldsymbol{\delta}_i$ and $\boldsymbol{\gamma_t}$can be assumed random. In this case $\boldsymbol{\delta_i} \sim iid(0,\sigma^2_\delta)$, $\boldsymbol{\gamma_t} \sim iid(0,\sigma^2_\gamma)$, $\mathbf{u} \sim iid(0,\sigma^2_u)$, and the $\boldsymbol{\delta_i}$, $\boldsymbol{\gamma_t}$are independent of the **u**. In addition, the $\mathbf{X_{k,it}}$are independent of the $\boldsymbol{\delta_i}$, $\boldsymbol{\gamma_t}$and **u**, for all i and t. The random effects model is an appropriate specification if we are drawing N individuals randomly from a large population. If N is large than a fixed effect model would lead to an enormous loss of degree of freedom. The individual effect is characterized as random and inference pertains to the population from which this sample was randomly drawn. Haavelmo (1944) view that the population "consists not of an infinity of individuals, in general, but of an infinity of decisions" that each individual might make. This view is consistent with a random effects specification.

We could use the random effects model:

$Y_{it} = \boldsymbol{\alpha} + \boldsymbol{\beta}\mathbf{X_{i,t}} + \mathbf{u}_{it} + \boldsymbol{\varepsilon}_i$

Where:

- Y is the dependent variables, and i = entity, t = time.

- $\mathbf{X_{i,t}}$ represent the independent variables

- **β**is the coefficient of the independent variables.

- $\mathbf{u_{it}}$is the combined time series and cross-section error component.

- $\boldsymbol{\varepsilon}_{\mathbf{i}}$is the cross-section, or individual-specific, error component

the usual assumption made by random effect model are that

$\varepsilon_i \sim N(0,\sigma^2_\varepsilon)$,

$u_{it} \sim N(0,\sigma^2_u)$,

$E(\varepsilon_i u_{it})=0 \quad E(\varepsilon_i \varepsilon_j)=0 \quad (i \neq j)$

$E(u_{it}u_{is})= E(u_{it}u_{jt})=E(u_{it}u_{js})=0 \quad (i \neq j; t \neq s)$.

The difference between fixed effect model and random effect model:
In the fixed effect model each cross-sectional unit has its own intercept value. In random effect model, on the other hand, the intercept represents the mean value of all the cross- sectional intercepts and the error component represents the deviation of individual intercept from this mean value. And the error component is not directly observable; it is an unobservable or latent variable.

The most appropriate methods to estimate the random effect model are the method of generalized least squares (GLS) and maximum likelihood (ML), but if we use the ML method, we have to assume the data are multivariate normal, and according to Browne(1974) and Ding, Velicer and Harlow(1995), they conclude that GLS tend to produce better empirical fit than ML, and some literatures show that the superiority in terms of empirical fit for GLS is at the lower cost theoretical fit when model contains specification error.

Due to the statistical data collecting constraints, the number of observation for individual *i*varies across *i*: that is, T_i instead of *T*. Then the panel is called an unbalanced panel. An unbalanced panel is often turned into a “rectangular panel” by trimming the data so that *T* becomes a number between $\min_i T_i$ or $\max_i T_i$. On the other hand, the unbalanced panel of cross-section data have a group structure, where *i* indexes company can be called a group, and there are T_i members in each group; ε_i represents the common unobserved characteristics of group *i*. One critical difference from imbalanced panel is that, within each group, there is no temporal ordering of the observations. Despite this difference, however, panel data techniques can be applied fruitfully to group structure data.

There are separate advantages for these two different models. To decide which one is more adequate for our research, we need to use Hausman test which was

developed by Hausman in 1978. The test statistic developed by Hausman has an asymmetric x^2 distribution. If the null hypothesis is rejected, then we note that the random effect model is more appropriate and we should use the random effect model instead of the fixed effect model. On the other hand, if *N* is large and *T* is small, and if the assumption under random effect model hold, random effect model estimators are more efficient than fixed effect model[2]. Although we have the Hausman test which helps us to choose the model, but note it is important to keep in mind there is no simple rule to help us separate the difference between fixed effects and measurement error of random effects and dynamic selection. We believe panel data are more suitable than the cross-sectional data. Finally, we use the STATA statistic package to carry out our empirical studies.

[2] Taylor (1980) has shown that for $T \geqq 3$ and $(N\text{-}K) \geqq 9$, where K is the number of regressors, the statement holds.

Chapter 4 Data description and Empirical result analysis

4.1 Data description

Financial instruments like banks and insurance companies hold more financial assets than other different industries, and banks may be greatly affected by the equity volatility caused by the classification of available-for-sale financial assets. But insurance companies focus more on the cash reserve and liquidity so they are more likely than banks to classify the securities as available-for-sale. As a result, the insurance companies provide more opportunities than banks for gains trading. We decide to select the insurance companies as sample to exam whether there exist earning management under the SFAS NO.34 in Taiwan.

We collect the statistic data from Taiwan Insurance Institute database, this institute is founded in 1985. They provide insurance research development and collect actuarial services and statistics. They offer detailed statistic data about the insurance companies and market in Taiwan. Our empirical data is all from their database.

Our sample year period is from 2006 to 2011, and we collect the statistic data from Taiwan insurance institute databases. Before 2006, the insurance companies do not have to disclose their investment securities. And there is no need to classify the financial asset to different categories. As a result, the data before 2006 are not available. This period includes the implementation of SFAS NO.34 in Taiwan. The insurance companies also experienced the financial crisis in 2008. In 2008, because of the financial crisis, many insurance companies had to face many losses from the investment securities. This event also helps us to test whether the insurance companies would engage in the gains trading or some window dressing behavior. This database includes the entire local and foreign insurance companies' financial data and operating data in Taiwan. There are some missing data in our sample, especially recent years; due to many different cases of mergers and acquisitions in the insurance industry. Besides the enormous change in the insurance companies, there are some new insurance companies whose data are not complete, and we still take these companies in our sample. We try our best to collect the integrated data for the research. For the new insurance companies we deal with the previous data (no statistic

data) as missing data. We also make some changes about our original data to make it qualify and meet the requirement of our research. The detailed data definition is illustrated in Table 2.

4.2 Data analysis

Table 2 Variable definition

Variable	Definition
afs	The percentage of available-for-sale financial assets to total financial securities, that is AFS%
ft	The percentage of financial assets at fair value through profits and loss (for trading portfolio) to total financial securities. That is FT%
nft	This is the percentage of net income divided by the sum offinancial assets at fair value through profits and loss (for trading portfolio) and the available-for-sale financial assets.
roa	Return on assets, the percentage of net income to total assets
roe	Return on equity, the percentage of net income to total equity
lnassets	Natural log of insurance company total assets
la	Leverage ratio, the percentage of total liability to total asset
currentratio	Current ratio, the percentage of total current assets to total current liabilities

Table 3 Descriptive statistics of each variable

Variable	Obs	Mean	Std. Dev.	Min	Max
afs	170	60.95615	32.21001	0	100
ft	170	10.93505	16.76	0	88.07954
nft	166	2.400738	5.160776	-18.9014	29.28838
roa	170	-3.16568	11.85272	-97.1659	2.509372
roe	170	-10.624	96.72689	-836.09	552.2149
lnassets	170	18.34015	1.963669	11.28213	21.91031
la	170	0.95702	0.143723	0.088798	1.388885
currentratio	169	16.18775	31.54418	0.657259	328.0623

The insurance industry in Taiwan is changeable, our sample year period cross six year, there are some new insurance companies entering this market and some insurance companies out of this market. So our sample is few than the original expected. The NFT (percentage of net income divided by the sum of financial assets at fair value through profits and loss (for trading portfolio) and the available-for-sale financial assets.) variable data is missing because the new companies do not include in the database of Taiwan insurance institute.

According to Table 3, we find that the percentage of financial assets at fair value through profits and loss (for trading portfolio) to total financial securities, that is, the mean of for-trading(ft)financial assets variable is smaller than the percentage of available-for-sale financial assets(afs). And the standard deviation of for trading financial assets is smaller than the available-for-sale financial assets. In our sample, the insurance companies are inclined to hold more available-for-sale financial assets, and tend not to classify the financial assets into the for-trading portfolio category.

We also find that the variable, nft (percentage of net income on investment securities to the summarization of available-for-sale financial asset and for-trading financial assets) is with low standard deviation, and the range of this variable is also wider, from a minimum of -18.9%, to a maximum of 29.29%, showing very different gains or losses between different companies and time period. Take a look at the ROE ratio. We find that the ROE standard deviation is larger than the ROA standard deviation, and this variable is with wider range. The volatility of ROE is obviously larger than ROA. We also find that the mean of ROA and ROE are also negative. This implies the insurance industry faces a difficult time in Taiwan for past few years. We could also find most insurance companies in Taiwan do not make profit in recent years. Even worse, they still have to face the loss from operating. This may also explain why so many mergers and acquisitions of insurance companies happen in Taiwan recently. Furthermore, although the insurance market in Taiwan is growing and becomes mature and more Taiwan people accept and buy insurance, but it seems that the insurance companies do not benefit from the growing market in Taiwan. This may also give the manager of insurance companies the motivation to engage in the gain trading or window dressing financial report. Finally, the current ratio range in our sample is also wide, from the smallest one 0.657 to the largest one, 328.062. We note the demand of liquidity is very different within different insurance companies and time period.

Table 4 The correlation matrix for each variable

	afs	ft	nft	roa	roe	lnassets	la	currentratio
afs	1							
ft	-0.4258*	1						
nft	-0.4089*	-0.0367	1					
roa	-0.1121	-0.093	0.1895*	1				
roe	-0.1922	0.1951*	0.1137	0.2258*	1			
lnassets	-0.3688*	-0.0774	0.2409*	0.3979*	0.1128*	1		
la	-0.3847	0.5235*	-0.1206	0.1495*	0.1754*	0.1706*	1	
currentratio	-0.3334*	0.2452*	0.2092*	0.0017	0.0992	0.1232	0.2833*	1

*Represent significant under p <0.05

Through Table 4, correlation matrix, we could have a view about the relationship between dependent and independent variables. Because there is no correlation coefficient over 0.5 between each variable, we could conclude there is no highly collinearity problem between different control variables. We only find the natural log of asset is correlated with ROA, but it is normally, because in the calculation of ROA we use the asset as denominator. But it seems does not cause a serious collinearity problem in our model. We still have a good explanation and significant power in all of our models. There are some variables, which have different coefficient sign from our original expectation. We will do further examination in our following analysis.

Table 5 Regression analysis of the available-for-sale and for-trading classification, and the ratio of net securities investment income to financial assets at fair value through profits and loss (for trading portfolio) and available-for-sale financial assets.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	afs	afs	afs	ft	ft	ft	ft	nft	nft	nft
roa	-0.060	-0.172		0.129	0.220**		0.078	0.106*	0.142***	
	(-0.300)	(-1.060)		(1.200)	(2.000)		(0.770)	(1.890)	(2.690)	
roe	-0.012	-0.012	-0.013	0.016	0.003	0.015*	0.018*	0.004	0.004	0.006
	(-0.720)	(-0.750)	(-0.840)	(1.580)	(0.380)	(1.710)	(1.830)	(1.010)	(0.990)	(1.470)
lnassets	-3.864		-4.540	-1.393	-0.446	-0.087	-1.213	0.576*		0.777***
	(-0.990)		(-1.420)	(-1.390)	(-0.220)	(-0.080)	(-1.210)	(1.840)		(2.720)
la	14.831	6.546	15.972	24.193**		11.586	22.321**	-16.596***	-16.033***	-14.743***
	(0.720)	(0.350)	(0.790)	(2.480)		(1.150)	(2.390)	(-3.610)	(-3.430)	(-3.280)
currentratio	-0.087*	-0.085*	-0.087*	0.050*	0.035	0.043		0.037***	0.038***	0.036***
	(-1.940)	(-1.900)	(-1.950)	(1.790)	(1.390)	(1.640)		(3.080)	(3.170)	(2.920)
_cons	118.595*	55.213**	130.082**	12.837	19.270	0.629	12.064	7.478	17.624***	1.819
	(1.780)	(3.050)	(2.380)	(0.750)	(0.520)	(0.040)	(0.700)	(1.080)	(3.870)	(0.290)
R^2	0.054	0.039	0.058	0.206	0.020	0.210	0.212	0.160	0.128	0.149
N	169	169	169	169	169	169	170	165	165	165

The values in the parentheses denote the values of t-statistic
*p<0.1, **p<0.05, ***p<0.01

In models (1)~(3), we try two different methods initially. The fixed effect model and random effect model, and then we use the Hausman test as an indicator to decide which model is the better one. After considering the Hausmantest, models (1)~(3) are all suitable for fixed effect model. We use available-for-sale financial asset as dependent variable. Model (1) includes all the independent variables; we find that the current ratio is negatively relative to the available-for-sale financial assets, and it is significant. Note for one thing that we try to identify different variables in our models (1)~(3), and we find the current ratio plays an important role in our model. It implies that the insurance company with lower current ratio will be inclined to classify their investment securities into the available-for-sale category, and this will reduce the volatility of net income, and thus reduces the demand of liquidity and releases the intense concern from investors and shareholders. On the other hand, they have lower demand for the current assets, so they are not afraid that it will reduce the liquidity if they classify the investment securities to the available-for-sale financial asset category. It also could be explained by the fact that the insurance companies have more tolerance on the net income volatility. They have more ability to meet the short-term liability, and don't have to engage in window dressing for their financial report.

In models (4)~(7), we use the financial assets at fair value through profits and loss (for trading portfolio) as dependent variable. We try to take away different variables in the model. We use random effect model for these models except for the model (5) according to the Hausman test and R-square. In model (4), we put all the independent variables into the model, and we find that leverage and current ratio is significantly positively related to for-trading financial assets. The insurance companies withhigher leverage will tend to classify the investment securities to for-trading category. This may be caused by the demand of liquidity for these insurance companies. The insurance companies with higher leverage will need more liquidity to decrease financial risk. Additionally, we could also find the insurance companies with higher current ratio also have higher for-trading financial assets. And it represents the insurance companies with higher liquidity demand will be inclined to hold more for-trading financial assets. In model (5), we find that the insurance companies with higher ROA will tend to classify the financial assets into the for-trading financial assets category. The ROA is positively related with the for-trading financial assets significantly. It matches our previous expectation. We expect that an insurance

company with lower ROA will classify more investment securities to the available-for-sale category and less to the for-trading financial asset category. We conclude that when the companies are with higher ROA, they may classify more investment securities into the for-trading financial asset category in order to have more profits and take more risk. They also have higher tolerance for the volatility of gains or loss of investment securities. We also find that the companies with higher ROE will tend to classify the investment securities to the for-trading financial assets in model (6) and (7). This result shows the ROA is positively relative to the for-trading financial assets, which meets our first expectation. Although the coefficient of ROA and ROE is not significant in all models (1)~(7), but they fit our previous expectation as well.

In model (7), we also find that leverage is significantly and positively related to the for-trading financial assets. This is because the higher leverage insurance companies want to maintain their liquidity; the companies with higher leverage will have more financial risk and demand of liquidity than the companies with lower leverage. The classification of for-trading financial assets offers more liquidity for the high leverage insurance companies. As a result, they will have more incentives to classify the financial assets to for-trading category. Furthermore, if they classify the investment securities to the available-for-sale category, they need to face the intense concerns from the financial reporting auditors and the shareholders. They have to offer strong evidence if they want to reclassify the investment securities, so as we talk previously, this may make the companies inclined to classify the investment securities to the for-trading category instead of available-for-sale category.

In contrast with the models (1)~(3), from models (4)~(7), we only find in model (4) the current ratio is significant, and the insurance companies with higher current ratio will tend to classify the investment securities to the for-trading financial asset category. That is, the current ratio is positively related to the for-trading financial assets. The companies with higher current ratio represent they have higher demand for the current assets to meet the need of short-term operation funding and to pay the current liability. As a result, they are inclined to classify the investment securities to the for-trading category instead of available-for-sale financial assets category. In models (5)~(7), the current ratio is not a significant variable for the classification of for-trading category.

In models (5)~(7), The asset size of insurance companies dose not have significant effect on the for-trading financial assets. The leverage ratio and ROE and

ROA will indeed affect the classification of financial assets for insurance companies. But note that in model (5), the R-square is obviously lower than the other three models.

For models (8)~(10), we consider different dependent variables. We use the percentage of net income to financial assets at fair value through profits and loss (for trading portfolio) plus the available-for-sale financial assets. We try to test how the ROA and ROA will influence the insurance companies to engage in the gains trading. Furthermore, we also want to explore the relationship between other different variables and the behavior of gains trading. We use the Hausman test as an indicator and still consider the R-square of models. We use the random effect model for these three.

Models (8)~(10) show that the entity size significantly affects the insurance companies concerning engaging in the gains trading. The larger insurance companies have more intention to engage in the gains trading significantly. The same result is obtained by 黃劭彥等 (2011). We conclude that the companies with larger asset size have to face more intense pressure to achieve earning level. Therefore, the managers of insurance company with larger asset size have more intention to engage in the gains trading in order to meet the earning level expectations from investors and shareholders than the managers of insurance companies with smaller asset size. According to these three models, we also find that the current ratio has significant influence on the gains trading behavior for insurance companies. The insurance companies with higher current ratio will be more inclined to engage in gains trading, and note the leverage ratio positively relates to the gains trading behavior for insurance company. This result is the same as 黃劭彥等 (2011). 黃劭彥 (2011) uses the logistic regression and finds that the current ratio is significantly positively related to gains trading. We conclude the insurance companies with higher current ratio will have more demand of liquidity, and they will do more gains trading through manipulating the securities investment. By the gains trading behavior, the insurance companies will have higher current ratio or more liquidity to meet their short-term debt. From these three models, we also find the leverage ratio plays an important role for insurance companies to engage in the gains trading. The leverage ratio is negatively related with the gains trading. It implies the insurance companies with higher leverage will not engage in the gains trading. This result matches the finding of

Jordan et al. (2011a). As the research mentions, most companies earn a higher returns on their asset than they have to pay for finance these assets. Using debt in the presence of positive financial leverage further enhances companies' earning level. They will use the earnings from the gains trading to offset the loss of earnings they may experience from the financial leverage which they originally want to generate income. The entities with a large amount of debt may have less need to manage its earnings through gains trading because their earnings are already boosted by the excess return resulting from the positive financial leverage. Our research has proved that in the insurance industry exact exists this phenomenon. Finally, we have a different finding about ROA variable that influences the gains trading behavior. According to Jordan et al. (2011a), they find ROA significantly negatively related to the gains trading behavior in the insurance industry. They conclude that firms with lower level of pre-gain earnings are more likely to engage in gains trading. In contrast to their finding, our research shows that ROA is positively related with the gains trading behavior. This may be due that the insurance companies use the gains trading action to improve their ROA, and further window dress their financial report. The insurance companies with higher ROA may have to further meet the demand from investors or shareholders of the companies. So they will be more inclined to engage in the gains trading for achieving the target. In our speculation, we find the mean of insurance industry ROA in Taiwan is negative, and we all know that in Taiwan, the insurance companies with a negative net income is more than the insurance companies with positive net income. This also reflects the difficult operating environment for the insurance companies in Taiwan. It may increase the intension for managers of insurance company to engage in gains trading. But in our sample, we don't find the negative relationship between the gains trading and ROA.

Over all, from this research, we find the current ratio plays an important role when the insurance companies make decision about classifying the financial assets significantly. Compared with ROE, it seems that ROA is a factor that will cause insurance companies to classify the financial assets significantly. Insurance companies with higher ROA and ROE will tend to classify the financial assets to for-trading financial asset category. We could conclude that the ROE is not significant in all of our models. But we still could conclude that ROE is a good indicator to measure the gains trading for insurance companies. We also find that the entity size will affect

the gains trading behavior. The larger insurance companies are, the more inclined to engage in the gains trading behavior by having more securities investment.

Chapter 5 Conclusion

Prior researches (Jordan 2011a, Jordan 2011b) have shown gains trading occurred in the insurance industry. They further explore the influence of implementation of different financial accounting reporting standards and provide the evidence of earning management and gains trading behavior in the insurance industry. The statement of financial accounting standard in Taiwan still has to face the same problem. The government agency has to prevent the managers of insurance companies from earning management and gains trading behavior. Especially after the implementation of SFAS NO.34 in 2006 in Taiwan, there may be some space for insurance company managers to manipulate the financial ratio and financial reporting. The value calculated through the valuation method of investment securitieshasbeen closer to the fair value rather than history cost. Although this change of accounting valuation could disclose the fair market value for the investment securities, but it also influences the operating income of each period. And it will further influence the performance of insurance companies. The new financial accounting reporting standard also gives the manager freedom to decide the classification of different financial asset categories. Compared with prior period, after the implementation of SFAS NO.34, we could doubt reasonably that the earning management and gains trading are occurring. There are so many researches about earning management and gains trading focusing on the different industries in Taiwan.

We know the financial industry in particular holds a larger amount of investment securities than other industries. The insurance companies have a large part ofassets investedin the financial securities. As a result, they are more influenced by the implementation of SFAS NO.34. The insurance company managers have to face more pressure as the information disclosing is getting strictly regulated. We assume that the problem of earning management and window dressing is occurring based on different condition to different insurance companies. Based on the previous researches, which include different industries and different countries about the earning management and window dressing, we set up our new assumptions about the financial investment securities classification and the earning management or gains trading. We hope this dissertation could offer the government regulation agencyand investors a

stepping stone to know the earning management behavior and window dressing of insurance industry. Insurance industry is a highly regulated industry in Taiwan. But the database and information disclosing and researches are far less than those of the banking industry. As the economy grows, the insurance market in Taiwan also develops very well. Hence, the insurance market deserves more attention. We use the database of the implementation of SFAS NO.34 from 2006 to 2011; this database could fully capture the influence of the regulation on the performance of insurance companies. This dissertation is different from the previous literatures; we use the classification of investment securities to identify the financial reports window dressing of insurance companies.

We prove the insurance companies with higher ROA and ROE will tend to classify the investment securities to for-trading financial asset category. It may be because the insurance companies with higher return have higher tolerance for net income volatility. On the other hand, the insurance companies may use the profit of the for-tradinginvestment securities to increase ROA or ROE, and then they will be more inclined to classify the investment securities to the for-trading category. We also find the insurance companies with higher ROA will tend to engage in gains trading. They do more activetradingsin their investment securities. We also find the leverage of the insurance companies plays an important role for the classification of investment securities. The insurance companies with higher leverage will enjoy the benefit of employing debt, and then they have less need to engage in gains trading to manage their earnings. Their earnings are already boosted by the excess return resulting from the positive financial leverage. In our research, we find the leverage is positively related with for-trading assets, which may be because the insurance companies with higher leverage will need more for-trading assets to increase the liquidity so they will tend to classify the investment securities to for-trading category financial assets. Finally, we find the current ratio will significantly influence the decision of classifying investment securities for insurance companies. The insurance companies with lower current ratio will tend to classify the investment securities to the available-for-sale financial asset category. This will also avoid the volatility of net income if they classify the investment securities to the available-for-sale financial asset. On the other hand, the current ratio is also positively significantly related with the gains trading behavior for insurance companies. The insurance companies with higher current ratio will have higher demand for liquidity, and they will do more gains

trading through manipulating the securities investment. By the gains trading behavior, the insurance companies will have higher current ratio or more liquidity to meet their short-term debt.

Our research offers a different point of view from pervious literature to exam the earning management behavior and window dressing financial reports in the insurance industry. We try our best to make the database closer to the information they have inside. But we still experience some missing data in our sample. Because there are so many cases of merger and acquisition happening these years, the foreign insurance companies in Taiwan always change their strategy and many different insurance companies enter or exit Taiwan. This induces difficulty in data collecting and dealing. And the data disclosure of insurance companies in Taiwan is still not completed; it could still get more detailed financial data for researchers if possible in the future. The further research about earning management and gains trading in insurance industry could try to connect with the stock price of insurance companies. Additionally, after more yearsunder the implementation of SFAS NO.34 in Taiwan, it will be possible to collect more data to exam the managers' manipulating behavior in different insurance companies. Last, the interested researcher could also focus on the influence of the revision of the SFAS NO.34. As time passes, the government regulatory agency will keep monitoring any earning management or gains trading behaviors between the insurance companies. The future research could further note the new revision and implementation.

References

Abarbanell, J., &Lehavy, R. (2003). Can stock recommendation predict earnings management and analysts' earning forecast errors? *Journal of accounting research*, 41(1), 1-31.

Beatti, V., Brown, S., Ewers, D., John, B., Manson, S., Thomas, D., & Turner, M. (1994). Extraordinary items and income smoothing: a positive accounting approach. *Journal of business finance and accounting*, 21(6), 791-811.

Beaver, W. H., &Mcnichols, M. F. (1998). The characteristics and valuation of loss reserves of property casualty insurers.*Review of accounting studies*, 3, 73-95.

Beaver, W. H., Mcnichols, M. F., & Nelson, K. K. (2003).Management of the loss reserve accrual and the distribution of earnings in the property casualty insurance industry.*Journal of accounting and economics*, 35, 347-376.

Bernard, V. L., & Thomas, J. K. (1990). Evidence that stock prices do not fully reflect the implications of current earnings for future earnings. *Journal of accounting and economics*, 13(4), 305-340.

Browne, M. W. (1973). Generalized least squares estimations in the analysis of covariance structures. *South african statistical journal*, 8, 1-24.

Burgstahler, D., & Eames, M. (2006). Management of earning and analysts' forecast to achieve zero and small positive earnings surprises. *Journal of business finance and accounting*, 33(5), 633-652.

Christie, A., (1990). Aggregation of test statistics: an evaluation of the evidence on contracting and size hypothesis. *Journal of accounting and economics*, 12, 15-36

Clubb, C., &Naffi, M. (2007). The usefulness of book-to-market and ROE expectations for explaining UK stock returns. *Journal of business finance and accounting* 34, 1-32.

Ding, L., Velicer, W. F., & Harlow, L. L. (1995). Effects of estimation methods nuber of indicators per factor, and improper solutions on strucural equation modeling fit indices. *Structural equation modeling: a multidisciplinary journal*, 2(2), 119-143.

Godwin, N., Petroni, K., & Wahlen, J. (1998). Fair value accounting for property-liability insurers and classification decision under FAS 115.*Journal of accounting, auditing, and finance*, 13(3), 207-242.

Guenther, D. A. (1994).Earining management in response to corporate tax rate changes: evidence from the 1986 tax reform act. *The accounting review*, 69(1), 230-243.

Haavelmo, T. (1944). The probability approach in econometrics.*Econometrica: Journal of the econometric society*, 12, 1-115.

Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting.*Accounting horizons*, 13(4), 365-383.

Hsieh, S. T., & Ho, M. F. (2010). Evidence from SFAS NO.34 and the financial crisis on the firm use of derivatives.*Journal of commercial modernization*, 1.5(3), 97-116.

Jordan, C. E., Clark, S. J., & Anderson, M. H. (2011a). Preliminary evidence of SFAS NO.130's effect on gains trading in the insurance industry. *Journal of applied business research*, 19(4), 39-47.

Jordan, C. E., Clark, S. J., & Smith, W. R. (2011b). Earning management under SFAS NO.115: evidence from the insurance industry. *Journal of applied business research*, 14(1), 49-56.

Lee, M. J. (2002). Panel data econometrics, methods of moments and limited dependent variables. *Academic press*.

Mcnichols, M. F. (2000). Research design issues in earnings management studies. *Journal of accounting and public policy*, 19, 313-345.

Petroni, K. R. (1992). Optimistic reporting in the property-casualty insurance industry.*Journal of accounting and economics*, 15, 485-508.

Petroni, K. R., Ryan, S. G., &Wahlen, J. M. (2000). Discretionary and Non-discretionary revisions of loss reserves by property-casualty insurers: differential implications for future profitability, risk and market value. *Review of accounting studies*, 5, 95-125.

Petroni, K. R., &Wahlen, J. M. (1995). Fair values of equity and debt securities and share prices of property-liability insurers. *Journal of risk and insurance*, 62(4), 719-737.

Taylor, W. E. “small sample considerations in estimation from panel data, “Journal of econometrics, vol. 13, 1980. pp. 203-223”

中文部分

Wang, Y.-J., Chang, C.-C., & Cheng, L.-Y. (2010). The impact of statement of financial accounting standards NO.34 on financial and electronic industries: evidence from market microstructure perspective. 中山管理評論, 18(4), 1009– 1050.

Wu, P. H. (2010). SFAS No.34 and income smoothing.中興大學財務管理系碩士論文.

紀登順. (2007). 金融商品財務報導之價值悠關性.臺北大學會計學系碩士論文

黃劭彥, 陳雪如, 邱安安, &陳慧貞. (2011). 我國金融商品分類決策之探討– 以財務危機公司為例.朝陽商管評論, 10(2), 67– 94.

蘇薇君. (2007). 財會準則三十四號公報之資本市場反應與盈餘組成份子資訊內涵之變化.淡江大學會計學系碩士論文

Appendix

Sample Insurance Company List

Bank Taiwan Life	Allianz Taiwan Life	KuoHua Life	New York Life
Taiwan Life	Chunghwa Post	Shin Kong Life	TransGlobe Life
PCA Life	FirstAviva Life	Fubon Life	CIGNA
Cathay Life	BNP Paribas TCB Life	Global Life	AIA(B) Taiwan
China Life	Chinatrust Life	MassMutual Mercuries	Manulife
Nan Shan Life	Prudential of Taiwan	Chaoyang Life	Cardif
Farglory Life	HSBC Life	Singfor Life	
Hontai Life	Zurich	ACE Life Taiwan	