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公司上市櫃前盈餘管理

Earnings management for newly listed firms

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摘要

公司上市櫃前是否進行盈餘管理一直是會計研究的熱門議題，台灣的相關文獻中有支持盈餘管理假說者，亦有支持無盈餘管理假說者。本研究之樣本包含西元 1992 年至 2006 年在台灣證券交易所新上市之公司(499 家)以及在櫃臺買賣中心新上櫃之公司(744 家)。本研究採用橫斷面 modified Jones model 估計裁量性流動應計項目 (discretionary current accruals)，作為盈餘管理之代理變數。Ball and Shivakumar (2007) 提到公司 IPO 當年底之裁量性流動應計項目存在一些潛在的問題，造成如果採用 IPO 當年底之裁量性流動應計項目去判斷公司是否進行盈餘管理會產生偏差。本文除了檢視公司上市櫃當年底之裁量性流動應計項目外，更深入檢視組成流動應計項目之變數個別變動。本研究認為公司上市櫃當年底之裁量性流動應計項目乃取決於公司對於營運資本配置之決定，並認為以公司上市櫃前兩年之裁量性流動應計項目作為公司上市櫃前是否進行盈餘管理的代理變數更為合適。實證結果顯示公司上市櫃前並未進行盈餘管理，並且在上市櫃前一年以及前二年比其他已經上市櫃公司更為條件保守。

關鍵字：盈餘管理、上市上櫃、裁量性流動應計項目、條件保守。

Abstract

Earnings management for newly listed firms

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This study examines whether newly listed firms engage in earnings management before their listing. The sample includes 499 newly listed firms in the Taiwan Stock Exchange (TSE) market and 744 newly listed firms in the GreTai Securities (GTS) market between 1992 and 2006. This paper uses the cross-sectional modified Jones model to estimate discretionary current accruals as the proxy for earnings management behavior. The study illustrates some potential biases related to the discretionary current accruals in the event year mentioned by Ball and Shivakumar (2007) and examines the fluctuations of individual working capital components. The discretionary current accruals in the event year are influenced by firms' decision to deploy their working capital level, and this paper assumes the discretionary current accruals in the event year -1 and -2 are more suitable to test if newly listed firms manipulate their earnings. The empirical results are consistent with that newly listed firms do not engage in earnings management before their listing and even report more conditionally conservatively in event year -1 and -2.

Keywords: earnings management, IPO, newly listed, discretionary current accruals, conditional conservatism.

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Chapter 1. Introduction

1-1 Research Motivations and Purposes

A strong securities market is the showcase of a healthy national economy, and it provides firms the opportunities of direct financing. Private savings and potential capital can be channeled into the securities market to help the development of national economy and private sectors. There are two major stock markets in Taiwan, Taiwan Securities Exchange (TSE) market and GreTai Securities (GTS) market. A public issuing company applying for listing has to meet the requirements set by these two markets and then gets the final approval of the Securities and Futures Bureau.

Earnings management around large transactions and events is a popular topic in accounting literatures.[1] This paper focuses on the earnings management at the process of going listed in the two major markets in Taiwan, due to the incentives and opportunities for firms to manage earnings during this period.

Once firms decide to be listed in the securities market, they have to qualify the requirements (Table 3.1) set by the trading market and pass the strict examinations conducted by the official bureau. Moreover, firms also try every means to get higher IPO prices to expand the wealth of stockholders. These incentives and motivations may cause firms to manipulate their earnings in the listing process.

For firms already listed in the securities market, the investors can evaluate their business standing and forecast the trend of these firms more accurately through many public channels, like the audited financial statements, released operating performance reports, the characteristics of management, the consulting firms' analysis reports, and even the media. However Rao (1993) reports that there is almost no news coverage about non-listed firms. The scarcity of information forces the investors to rely heavily on the prospectus, which may include the most recent three years' financial statements. Besides, firms can restate their financial statements in accordance with the generally

[1] As in the literatures review chapter, Healy (1985), DeAngelo (1986), Jones (1991), Teoh et al. (1998ab), Ball and Shivakumar (2007).

accepted accounting principles based on the Financial Accounting Standard NO.8 in Taiwan. All of these give managers the opportunities to manipulate earnings.

However, the newly listed firms face a higher reporting standard due to the market demand and regulatory requirements. The investors, lenders, and other users of financial statements demand higher reporting quality due to the information asymmetry between the firms and them. The process of going listed in the securities market also attracts the attention of the stakeholders and the public, independent auditors, boards, corporate lawyers, and the press. Listed firms also face greater regulatory requirements. Ball and Shivakumar (2007) show that the IPO firms report more conservatively instead of inflating earnings because of the demand for higher reporting quality.

Accruals are a popular proxy for earnings management (Healy [1985], DeAngelo [1986], Jones [1991], Dechow et al. [1995], Teoh et al. [1998b]). It plays an important role in these earnings management literatures. Accruals are supposed to reflect the firm's underlying business standing more accurately because the cash-basis accounting numbers are influenced by the timing of cash receipts and payments. However, the generally accepted accounting principles give managers the rooms to determine when to recognize revenues and expenses through accruals. It implicitly means the firms have the opportunities to manipulate their earnings by adjusting accruals. It is difficult for investors to distinguish the "real" accruals and "fake" accruals. Teoh et al. (1998b) indicate that though discretionary long-term accruals also represent earnings management, managers have greater flexibility and control over current versus long-term accruals. And nondiscretionary portion of accruals are considered the responses to the firms' business standings instead of proxies of earnings management. As a result, this paper uses the discretionary current accruals (DCA) as the main variable representing earnings management.

The main purpose of this study is to see whether newly listed firms manipulate their earnings before they are listed in the TSE and GTS markets. First, this paper uses the cross-sectional modified Jones model (Teoh et al. [1998b]) to estimate the discretionary current accruals for sample firms in the event year-end. Then, this paper also re-examines the evidence found by using the first methodology and demonstrates

some potential problems related to it. Finally, this paper estimates the discretionary current accruals in event year -1 and -2 to examine whether firms manipulate their earnings before going listed in the two major stock markets in Taiwan. This paper assumes discretionary current accruals in event year -1 and -2 as the proxies of earnings management because those firms want to be listed in the two major stock markets should qualify the profitability requirement in most recent two fiscal years (Table 3.1). This study also tests the conditional conservatism of the newly listed firms in event year -1 and -2.

1-2 Research Contributions

This paper not only shows the fluctuations of discretionary current accruals in the event year for newly listed firms but examines the components of current accruals. The difference between this study and other Taiwanese literatures is that it examines the fluctuations of individual working capital components in the event year and illustrates some potential problems related to it, such as the discretionary current accruals of firms in the “aggressive” group are too large to be reliable and may not be caused by earnings management.

The sample in this study includes newly listed firms in both TSE and GTS markets. The relevant literatures in Taiwan only examine the earnings management behavior for the TSE firms but no GTS firms.

From table 3.1, the newly listed firms have to qualify the profitability criteria that depend on the most recent two years’ accounting numbers. So this study uses the discretionary current accruals in the two years instead of the event year to examine the earnings management behavior for sample firms.

This paper also illustrates the problems related to the discretionary current accruals in the event year mentioned by Ball & Shivakumar (2007). The results suggest that the future researches in Taiwan should pay attention when using the event year-end discretionary current accruals to test the earnings management hypothesis around large transactions and events.

1-3 Research Structure

This study is organized into five chapters; the content of each chapter is described as follows:

Chapter 1: Introduction

This chapter is to illustrate the motivations, purposes, and contributions of this study and the research structure.

Chapter 2: Literatures Review

This chapter reviews the accruals estimation related literatures first. Then the second section reviews literatures about earnings management at IPO process. Finally, the chapter reviews the literatures about earnings management of newly listed firms in Taiwan.

Chapter 3: Research Methodology

This chapter shows the development of hypothesis, measurement of variables, analysis methodology, and sample selection and data. The key variable in this study is discretionary current accruals (DCA). The sample includes newly listed firms in the Taiwan Stock Exchange (TSE) market and the GreTai Securities (GTS) market from 1992 to 2006.

Chapter 4: Empirical Results and Analysis

This chapter examines the empirical results and makes the interpretations. Most importantly, it shows whether firms engage in earnings management before newly listed in the TSE and GTS markets.

Chapter 5: Conclusions and Suggestions

The conclusions in this chapter are:

1. The discretionary current accruals are significantly positive in the event

year-end for the newly listed firms, but there are problems related to them and make them unreliable.

2. The discretionary current accruals in event year -1 and -2 for the newly listed firms and the conditional conservatism test suggest that the sample firms do not engage in earnings management and even report more conservatively in the two years before newly listed.

3. There may be potential biases in discretionary current accruals when using the cross-sectional modified Jones model to estimate them due to the out-of-sample estimation problem.

This chapter also makes some suggestions for further study.

The flow chart of this study is as follows:

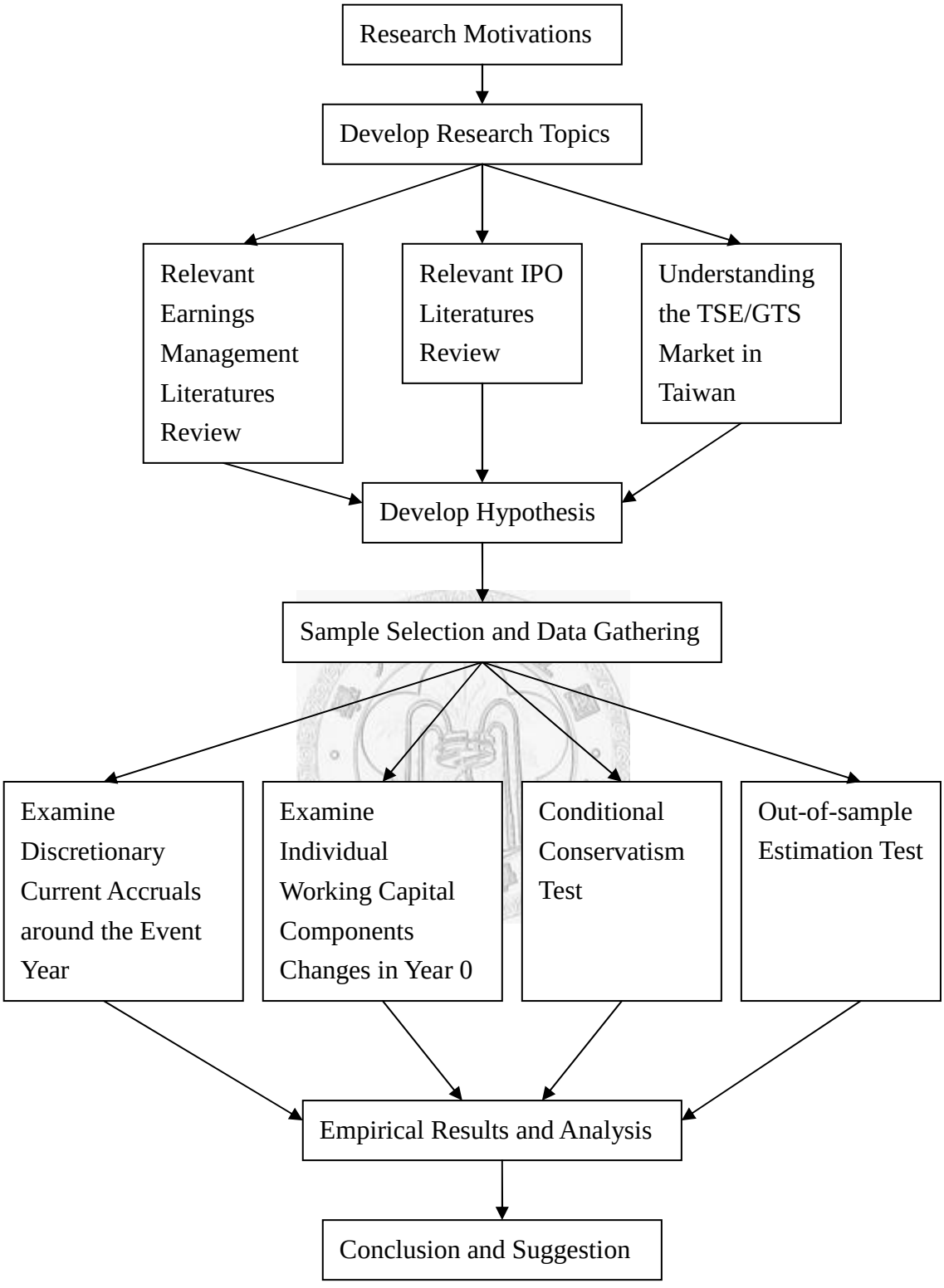

Figure 1.2: Research Flow Chart

Chapter 2. Literature Review

This study mainly examines whether the newly listed firms engage in earnings management before their listing in Taiwan Stock Exchange market and GreTai Securities market. The discretionary current accruals is the main proxy for earnings management. To focus on this topic, this chapter reviews the literatures in the following three sections. First, this chapter organizes the famous literatures about accruals estimation. Second, this chapter discusses the literatures about earnings management at IPO. The literatures about earnings management for newly listed firms in Taiwan are in the last section.

2-1 Accruals Estimation Related Literatures

Accruals is the most popular proxy for earnings management because it reflects the overall impact of the accounting policies adopted by firms. How to estimate accruals and distinguish the discretionary portion from the total accruals are popular researches in accounting literatures. This section discusses some famous accruals estimation related literatures. This paper uses the change in sales to control the effect of firms' business fluctuations (Jones [1991]) and subtracts the change in accounts receivable from the change in sales when calculating the nondiscretionary current accruals (Dechow et al. [1995]) because Dechow et al. (1995) show that the modified version of the Jones model has the better power to detect earnings management.

Healy (1985)

Healy examines the relation between managers' managerial accounting decisions and earnings-based bonuses due to the incentives for managers to increase their compensation. This study is different from preceding papers because Healy not only examines the accruals which increase the earnings but the accruals which decrease the earnings. Healy separates its sample into three subsamples based on the existence of bonus plan upper bounds and lower bounds and compares the average accruals in each

subsample to observe if managers engage in earnings management.

Healy assumes managers are likely to adopt income-decreasing accruals when their performance is over the upper bounds of the bonus plan or under the lower bounds of the bonus plan in order to delay the earnings to the next period, and to adopt income-increasing accruals when their performance is in the middle of bounds to increase their bonus. The results in this study support its hypothesis that the accruals in company-years without upper and lower bounds of the bonus plan are significantly lower than those with upper and lower bounds. Healy considers that the accounting earnings are composed of cash flow from operations, discretionary accruals, and nondiscretionary accruals. Accruals are the differences between net income and operating cash flow.

$$TAC_t = DAC_t + NDAC_t, \quad (1)$$

where:

TAC_t : Total accruals in year t,

DAC_t : Discretionary accruals in year t,

$NDAC_t$: Nondiscretionary accruals in year t.

Healy also mentions that the discretionary accruals would be biased if we cannot distinguish these two portions of accruals accurately.

DeAngelo (1986)

DeAngelo investigates the accounting decisions made by firms during the management buyouts period. Due to the incentives for the firms to reduce the buyout compensation, the author hypothesizes that sample firms understate their earnings in periods before the management buyout, but the results are not consistent with the hypothesis. The author thinks the most plausible explanation is that, public stockholders and their financial advisors carefully examine the financial statements of these firms for evidence of income-decreasing accounting.

In this study, DeAngelo (1986) revises the Healy (1985) model and uses the change in accruals to reduce the nondiscretionary accruals' effect on earnings

manipulation test. The formula is:

$$TAC_t - TAC_{t-1} = (DAC_t - DAC_{t-1}) + (NDAC_t - NDAC_{t-1}). \qquad (2)$$

DeAngelo assumes the fluctuations in nondiscretionary accruals are random walk, so the expected value of the change in nondiscretionary accruals is zero. Under this assumption, the expected value of total accruals change represents the expected value of discretionary accruals change. So this paper uses the change in total accruals as a proxy for earnings management.

Jones (1991)

Jones uses empirical research to find out if firms try to decrease earnings by earnings manipulation during import relief investigation by the United States International Trade Commission (ITC) in order to get benefit. Because ITC considers accounting numbers as the factors to decide which firm can get import protection, this provides an incentive for firms to manage their earnings. There are 25 companies in five different industries in the sample. The result of this study supports the hypothesis that managers make income-decreasing accruals during investigation, especially through the discretionary accruals.

Jones relaxes the assumption that nondiscretionary accruals are constant from period to period and develops the following model to estimate non-discretionary accruals:

$$TA_{it} / A_{it-1} = \alpha_i (1/ A_{it-1}) + \beta_{1i} (\Delta REV_{it} / A_{it-1}) + \beta_{2i} (PPE_{it} / A_{it-1}) + \varepsilon_{it}, \qquad (3)$$

where:

TA_{it} = Total accruals in year t for firm i,

ΔREV_{it} = Revenues in year t less revenues in year t-1 for firm i,

PPE_{it} = Gross property, plant, and equipment in year t for firm i,

A_{it-1} = Total assets in year t-1 for firm i,

ε_{it} = Error term in year t for firm i.

Jones assumes that nondiscretionary accruals of a firm would fluctuate from year to year because of the change in the economic circumstances and uses revenues to control the effect. Jones considers that the revenues can measure the firms' operation conditions objectively. The reason the Gross PPE is included in this model instead of change in this account is that the total depreciation expense is included in the total accruals. The error term is the discretionary portion of the total accruals.

Friedlan (1994)

Friedlan assumes the IPO firms inflate their earnings in order to obtain the higher IPO prices and examines the accounting decisions made by issuers. The empirical results are consistent with the hypothesis that firms make income-increasing discretionary accruals before IPO.

Friedlan considers that the DeAngelo (1986) model is not suitable for the IPO firms because the IPO firms usually have high growth rates and the unusual growth affects the IPO firms' operating performances, including accruals. Using the DeAngelo model will contribute all the changes in total accruals to changes in discretionary accruals, but in fact, part of the changes should be contributed to the growth factor. The revised model in this study is:

$$TAC_t - TAC_{t-1} = \frac{TAC_t - TAC_{t-1} \times (\frac{Sales_t}{Sales_{t-1}})}{Sales_t} = \frac{TAC_t}{Sales_t} - \frac{TAC_{t-1}}{Sales_{t-1}} \quad (4)$$

Friedlan revises the DeAngelo (1986) model and uses the sales growth rate to adjust the lagged total accruals, then standardizes the change in total accruals by this year's sales.

Dechow, Sloan, and Sweeney (1995)

There are several popular models in earnings management literatures to estimate the discretionary and non-discretionary accruals. Dechow, Sloan, and Sweeney compare the specifications and power of test to evaluate these alternative models,

including the Healy Model, the DeAngelo Model, the Jones Model, and the Industry Model. They also develop a modified version of the Jones Model that the nondiscretionary accruals are estimated as following:

$$NDA_{it} = \alpha_i(1/A_{it-1}) + \beta_{1i}[(\Delta REV_{it} - \Delta REC_{it})/A_{it-1}] + \beta_{2i}(PPE_{it}/A_{it-1}), \qquad (5)$$

where:

ΔREC_{it} = Net receivable in year t less net receivable in year t-1 for firm i.

The parameters used to calculate nondiscretionary accruals are still estimated from original Jones (1991) Model. The only difference between the Jones Model and the modified version is that when calculating nondiscretionary accruals, the modified Jones Model subtracts the change in net receivables from the change in revenues. This process implicitly assumes that all changes in credit sales are due to earnings management. The reason is that it is easier to manipulate earnings through recognition of revenues on credit sales than on cash sales.

After a series of experiments, this study shows that all the models mentioned above are well specified for a random sample of event-years, but all lead to mis-specified tests when firm-years having extreme financial performances. Besides, if variables used to detect earnings management are correlated with firm's performances, all the models considered are potentially mis-specified. So it is important to control these factors. Finally, the modified version of the Jones Model developed by Dechow, Sloan, and Sweeney shows the most power to detect earnings management.

Hribar and Collins (2002)

Estimating accruals is a very common procedure in accounting literatures. Due to the data availability problem of cash flow statements, many people use the successive balance sheets to estimate accruals. But this method is based on a presumption that the changes in working capital components are related to the accrual component of revenues and expenses on the income statement. Once there are non-operating events, this presumption does not stand. The authors examine the accruals estimated both

from balance sheet changes and cash flow statements and demonstrate the errors caused by using balance sheets to estimate accruals.

The authors use three main non-operating events to examine the estimated accruals, which are mergers/acquisitions, divestitures, and foreign currency translations. They divide their sample into four subsamples: firm-years with a merger or acquisition, firm-years with discontinued operations greater than $10,000, firm-years with gain or loss on foreign currency translations greater than $10,000, and firm-years with none of the above events.

This paper shows that the accruals estimated from balance sheets in the "merger" subsample are positively biased, and negatively biased in the "discontinued operations" subsample. So the authors suggest using the cash flow statements to estimate accruals, especially when there are non-operating events in the sample firm-years.

2-2 Earnings Management around IPO process Literatures

Literatures about earnings management around large transactions and events are countless. This section reviews some earnings management around IPO process literatures because the topic of this study is earnings management for newly listed firms in Taiwan. This study observes the significantly positive discretionary current accruals in the event year-end for newly listed firms as the evidence in Teoh et al. (1998b) study. The difference between my study and Teoh et al. (1998b) is that they interpret these positive DCAs directly into earnings management for IPO firms. But this paper illustrates the potential biases related to the discretionary current accruals in the event year mentioned by Ball and Shivakumar (2007) and uses the DCAs in the event year -1 and -2 to examine the earnings management hypothesis instead of those in the event year.

Teoh, Welch, and Wong (1998b)

Based on Ritter (1991), "investors are periodically overoptimistic about the

earnings potential of young growth companies," this study examines whether issuers of initial public offerings inflate their earnings by accruals in the IPO year and the subsequent stock returns. The authors assume that the IPO process is a good timing for issuers to manage their earnings due to the asymmetry information between investors and issuers. They also assume that the investors cannot identify which IPO firms manipulate earnings, so the high earnings on the financial statements included in the prospectus directly translate into a higher offering price. When these IPO firms start to trade on the stock market and are unable to maintain the earnings level, the investors begin to realize they were too optimistic about these companies and start to realize the real values of these firms. This would be reflected on the stock prices and caused the poor stock return performances thereafter.

The sample in this study includes 1,649 IPO firms in the U.S. between 1980 and 1992. The financial statement information is taken from the IPO year-end (year 0), so the numbers on the financial statements include both pre- and post-IPO periods. Although the discretionary long-term accruals also represent earnings management, the authors emphasize the discretionary current accruals as the main variable because it is easier to control current accruals than long-term accruals. The nondiscretionary portions of total accruals reflect the change in business conditions of firms, so they are not considered proxies of earnings management. This paper uses the modified Jones Model to estimate the DCA at year 0 and divides the sample into four groups by DCA quartiles. Firms with highest DCA are included in the "aggressive" group and the group with lowest DCA is called "conservative".

This study examines the relation between IPO firms' earnings management and the long-term post-IPO stock underperformance. The empirical results show that the discretionary current accruals of IPO firms in year 0 are higher than non-issuers, and on average, firms classified in the most aggressive group have a 15% to 30% inferior performance than those classified in the most conservative group in the subsequent three years. In summary, the empirical results in the paper support the hypothesis that IPO firms inflate their earnings during the IPO process and the earnings management is related to the subsequent stock price performance.

Teoh, Wong, and Rao (1998c)

This paper examines mainly the issue-year earnings and the abnormal accruals in the IPO firms and the relation between the issue-year abnormal accruals and the subsequent stock returns.

The sample in this study consists of 1682 IPO firms going public between 1980 and 1990. IPO firms must meet the following criteria to be included: offer price > $1, gross proceeds > $1M, only common stock is offered, and the offering is handled by an investment banker. The methods used to estimate abnormal accruals in this paper include cross-sectional modified Jones (1991) model and Beneish (1994) M-score model. The operating performance is measured by three variables, return on sales of the IPO firms, industry-adjusted return on sales, and return on sales in relation to matched firms.

The empirical results reveal that the IPO firms report high earnings during the IPO process by reporting abnormal accruals; after the IPO, their earnings are significantly lower than non-issuing industry peers and matched non-issuers. Those IPO firms with the highest abnormal current accruals in the event year underperformed the most in the following three years; but the expected current accruals, abnormal long-term accruals, and expected long-term accruals do not have the forecast power. Besides, the IPO firms are more likely than their peers to adopt accounting policies which could increase their earnings. Finally, the evidence in this paper is consistent with Teoh et al. (1998b) that the more abnormal accruals of IPO firms have, the worse their subsequent stock returns.

Ball and Shivakumar (2007)

Unlike popular literatures in the earnings management territory, the authors hypothesize the IPO firms report their financial statements more conservatively, because when one firm is going to initial public offering, it faces a higher demand for reporting quality from a broad range of stakeholders, like internal auditors, independent auditors, boards, corporate lawyers, analysts, etc.

They also question the hypothesis and evidence of Teoh et al. (1998b) that firms inflate earnings during IPO year in order to get higher IPO prices. First, if IPO firms

inflate earnings by earnings management, they would attract the scrutiny from many market monitors, like auditors, analysts, as well as the regulatory, and might be detected. Second, poor reporting quality would cause the cost of capital to rise, which is not good for a growing firm. Third, the evidence from Teoh et al. (1998b) study is based on discretionary current accruals, which include the changes in working capital, estimated from modified Jones Model. The authors find that these accruals are unreliable due to the following reasons:

- The discretionary current accruals are too large to be reliable in Teoh et al. (1998b) sample and would be detected by market monitors.
- The accruals are estimated from balance sheet changes and are biased in the earnings inflation hypothesis.
- Using accruals in year 0 is too late to influence the IPO price.
- The DCA estimates are biased because of the high growth of these IPO firms and the IPO proceeds.
- Some unusually high discretionary accruals are caused by the low value of deflator, pre-IPO total assets.

This study re-examines the Teoh et al. (1998b) sample of 1,649 U.S. IPO firms from 1980 to 1992, calculates current accruals both from balance sheet and cash flow statement, and uses either the Jones Model or the following piecewise linear Jones model adapted from Ball and Shivakumar (2005, 2006) to estimate normal current accruals:

$$CA_{it} = \alpha_0 + \alpha_1 \Delta Sales_{it} + \alpha_2 CFO_{it} + \alpha_3 DCFO_{it} + \alpha_4 DCFO_{it} * CFO_{it} + \nu_{it}, \quad (6)$$

where:

CFO_{it} =Cash flow from operations,

$DCFO_{it}$ =Dummy indicator for negative cash flows that takes the value 1 if CFO_{it} <0 and 0 otherwise.

The authors use the discretionary current accruals in year-1 instead of year 0 to run regressions and to do analysis. The empirical results of this paper are consistent with the higher reporting quality hypothesis. The authors also conclude that using the

traditional ways to estimate discretionary accruals around large transactions and events are unreliable.

2-3 Earnings Management for Newly Listed Firms in Taiwan

This section reviews the related literatures about earnings management for newly listed firms in Taiwan because the sample in this paper includes newly listed firms in TSE market and GTS market. The differences between this paper and the others below are as follows. This paper assumes the discretionary current accruals have the better power to test earnings management hypothesis because the managers have greater flexibility and control over current than long-term accruals (Teoh et al. [1998b]). So this study uses the discretionary current accruals as the proxy for earnings management (Tai [1999]) instead of discretionary accruals (Jeng [1992], Su [1992], Lien [1993], Chen [1993], and Huang [1995]). This study finds the significantly positive discretionary current accruals in the event year-end, consistent with Huang (1995) and Tai (1999), and further examines the individual working capital components changes. This study assumes the discretionary current accruals in the event year -1 and -2 can better test the earnings management hypothesis for newly listed firms because the potential biases with the discretionary current accruals in the event year (not mentioned by relevant literatures in Taiwan) and the criteria for newly listed firms to qualify (Table 3.1). The studies below only focus on the newly listed firms in the TSE market, but the sample in my study includes the newly listed firms both in the TSE market and GTS market. The conclusions in this paper are consistent with Huang (1995) that firms do not engage in earnings management before newly listed but not with Su (1992), Lien (1993), Chen (1993), and Tai (1999). Due to the preceding reasons why this paper is different from following studies, I believe the variables, measurement periods, and methodology this paper adopts provide more reliable evidence to test whether firms engage in earnings management before newly listed.

Jeng (1992)

The sample in Jeng (1992) study includes 60 newly listed firms between 1986 and 1990. This study examines whether newly listed firms manipulate their earnings by using accruals before their listing in order to raise the stock price. The authors compare the average three years accruals of sample firms before listing with the average three years accruals post listing to see if there is significant difference.

The empirical results show that the average three years' accruals of sample firms before listing are significantly different from those post listing. However, from the perspective of each single sample firm, there are only 22 firms' averages three years accruals before listing are larger than those post listing. So there is no concrete conclusion in this study.

Su (1992)

This paper examines whether newly listed firms increase their earnings significantly before listing through discretionary accruals and which method the firms adopt to influent their accounting earnings. The sample in this study includes newly listed firms between 1985 and 1989. This paper uses the DeAngelo model to estimate the discretionary accruals and examines their fluctuations pre- and post-listing.

The results show that the sample firms' accounting earnings have significant increases before their listing but the discretionary accruals have no significant fluctuations. Moreover, the author examines the fluctuations of the earnings components and finds that the non-operating revenues have significant increases.

Lien (1993)

This study examines whether newly listed firms manipulate their earnings before listing in order to raise the stock prices. The sample includes newly listed firms between 1981 and 1990. The empirical results show that the newly listed firms tend to engage in earnings management through operating related accruals instead of changes in accounting method. The total accruals and operating related accruals fluctuate significantly in the period three years before listing and three years post listing. However, the non-operating revenues and extraordinary items have no such

fluctuations.

Chen (1993)

This study mainly examines whether newly listed firms manipulate their earnings before listing through discretionary accruals and in which period, and the relation between auditors' reputations and earnings management. The sample includes 70 newly listed firms between 1982 and 1991. The results show that the discretionary accruals of newly listed firms are significantly positive at the year before listing but there is no significant relation between auditors' reputations and earnings managements.

Huang (1995)

This study uses the discretionary accruals as a proxy to examine whether firms going listed in the Taiwan Stock Exchange (TSE) market engage in earnings management around event years, and also to analyze the pre- and post-listing performances. Furthermore, this paper examines the relation between the discretionary accruals and operating performance after listing, and the incentives for earnings management.

There are 135 newly listed firms (TSE) between 1985 and 1993 in the sample, and the author combines some similar industries into a new category, deletes the industries without enough observations. The final sample consists of six different industries. The discretionary accruals are estimated by using Jones Model and as a proxy of earnings management. Net income and operating cash flow are proxies of operating performance. The incentives for earnings management include firm age, listed period, and the quality of auditors and underwriters.

The empirical tests are performed by using univariate analysis, correlation analysis, and multivariate analysis. The results of empirical tests support the hypothesis that firms make income-increasing earnings management through discretionary accruals in the newly listed year and the next year as well. Net income and cash flow increase before listing, but decline gradually after listing. The relation between the extent of earnings management before listing and operating performance

of post-listing is insignificantly negative. The three incentives for earnings management are significantly associated with discretionary accruals in the first year after listing, but not in the event year.

Tai (1999)

This study examines whether newly listed firms engage in earnings management before listing and the subsequent stock returns. The sample includes 271 newly listed firms between 1982 and 1996. The proxies of earnings management include discretionary current accruals, nondiscretionary current accruals, discretionary long-term accruals, and nondiscretionary long-term accruals. The analysis methodology includes trend analysis, cumulative abnormal returns, Fama-French regression analysis, and Fama-MacBeth regression analysis. The empirical results show that the newly listed firms use discretionary current accruals to inflate their earnings at the listed year and the negative relation between the extent of earnings management and subsequent stock returns. Moreover, the discretionary current accruals is the better indicator to forecast the long-term stock returns than other three earnings management proxies.

Huang and Wu (2007)

This study links finance topics of initial public offerings and lockup period to examine the hypothesis that the timing of lockup expiration is crucial to the earnings management in the post-IPO period. The evidence shows a strong need of earnings management in the lockup period. Significantly positive discretionary accruals begin from the IPO quarter to the quarter right after expiration of first-stage lockup period. Furthermore, the discretionary accruals in the end of second-stage lockup period are also significantly positive. The results indicate that the lockup period is crucial to the findings of significant earnings management in the IPO year and the following year. This paper also examines five specific items of discretionary accruals. Among them, discretionary account receivables and discretionary inventories are most intensively used throughout IPO and both lockup periods.

Chapter 3. Research Methodology

3-1 Hypothesis Development

Firms can better reflect themselves by accrual-basis accounting, but the accrual-basis accounting also gives managers the opportunities to manipulate earnings. There are many relevant literatures about earnings management around large transactions and events (Healy [1985], DeAngelo [1986], Jones [1991], Teoh et al. [1998b]).

The process to be listed in the TSE or GTS market gives managers both the incentives and opportunities to manage their earnings. Rao (1993) indicates that there is almost no news coverage about the IPO firms before their IPO year. This scarcity of information causes the serious information asymmetry between issuers and investors, forces the public to heavily rely on the prospectus. Consequently, the accounting numbers in the prospectus directly translate into the IPO price. Firms can boost their earnings through accruals to raise the IPO price, just like borrow earnings from future periods. Moreover, the investors are unable to understand the extent of earnings management. Besides, in order to fulfill the criteria (Table 3.1) to be listed in the TSE or GTS market, managers also have incentives to manage their earnings.

However, the financial statements included in the prospectus should be audited by auditors who may notice if the firms manipulate their earnings. But we all know that the auditor is responsible only for the compliance with general accepted accounting principles, and not for the most accurate representation of the firm's condition. If firms manipulate their earnings but are still in accordance with GAAP, the auditor would still give the unqualified opinion reports.

In summary, due to the incentives and opportunities for firms to inflate earnings at the IPO year, Teoh et al. (1998b) examine this hypothesis and show that discretionary current accruals of IPO firms in the IPO year are significant higher than non-issuers. This study uses the DCA as a proxy of earnings management to test if firms inflate their earnings through accruals at the event year.

Later, Ball and Shivakumar (2007) challenge the popular belief that firms inflate their earnings at IPO and question both the hypothesis and evidence in Teoh et al. (1998b) study. Moreover, they give many reasons why the significant positive discretionary current accruals at the IPO year are not reliable and show that IPO firms report more conservatively at IPO.

The IPO process attracts a broad range of stakeholders' attention, such as analysts, underwriters, auditors, press, as well as enhanced regulatory scrutiny, all of them ask for higher reporting standards. And if the public believes that IPO firms may manipulate their earnings, there should be more serious monitors and detection risk for these firms. The inflation of earnings causes the subsequent deflation of earnings, and the poor reporting quality also raises the cost of capital. It is not good news for a growing firm needing external financing. Based on these reasons, Ball and Shivakumar (2007) question the earnings inflation hypothesis assumed by Teoh et al. (1998b).

Ball and Shivakumar (2007) also question the evidence in Teoh et al. (1998b) sample for the following reasons. The discretionary current accruals in Teoh et al. (1998b) sample are too large to be credible, and some of them are even negative. The negative values are not in accordance with the hypothesis that firms inflate earnings to get higher IPO prices. Hribar and Collins (2002) show that if there are non-operating events in firm-years, the accruals estimated from balance sheet changes would be biased, and suggest using accruals directly from cash flow statements. Due to the database constraint (Chapter 3.2), this paper still estimates the discretionary current accruals from balance sheet changes.

Ball and Shivakumar (2007) further show the bias in fitting the accruals model to out-of-sample data. When using Jones model to estimate the parameters for non-IPO firms and put the parameters in the IPO firms to calculate their discretionary current accruals, there is an implicit hypothesis that nondiscretionary current accruals of the IPO and non-IPO firms are determined in the same way. But the extent of relation between accruals and changes in revenues depends on the firm's stage in the life cycle. Ball and Shivakumar (2007) assume that IPO firms are likely to have been resource-constrained before the IPO, and then IPO proceeds relax such constraints,

making large increases in working capital, both unconditionally and conditionally on sales. This study examines this question by varying the parameters between newly listed firms and listed firms.

The accounting numbers in the IPO year-end (year 0) includes both pre- and post-IPO periods and are too late to influence the IPO prices. Further, once IPO firms get IPO proceeds, they are likely to change their working capital level and working capital components which are main factors to calculate accruals. Growth factor may cause positive accruals (income-increasing), no matter they are calculated from successive balance sheet changes or cash flow statements. However, growth may not affect the discretionary current accruals, because the Jones model uses change in sales to control it. Teoh et al. (1998b) use modified Jones model to estimate DCA, which is subtracting the changes in accounts receivable from changes in sales, this procedure implicitly assumes that all the credit sales are fraudulent. In summary, refer to Ball and Shivakumar (2007), there are many problems when using the event year-end (year 0) accounting numbers to estimate discretionary current accruals.

Finally, although the incentives and opportunities for newly listed firms to manipulate their earnings at IPO process seem reasonable, there are still many disadvantages for firms to manage their earnings. Newly listed firms are usually the hot news in Taiwan and certainly attract many stakeholders and the public's attention, such as auditors, analysts, underwriters, and the press. If these firms engage in earnings management, the chance to be caught is high due to the monitors of the regulatory bureau. There is also a risk of subsequent detection, and the litigation problem and the damage to their reputations would be severe. Furthermore, earnings management can only borrow earnings from later periods and the poor reporting quality could also increase the cost of capital, which is worrisome for newly listed firms that need external financing.

Both of the earnings management hypothesis and no earnings management hypothesis have its reasons and are supported by literatures. This study does not take side in the first, and adopts the methodology introduced in the chapter 3-3 to examine whether newly listed firms in the TSE and GTS markets engage in earnings management.

Figure 3.1 shows the flow chart for applicant firms to be listed in the TSE market. The flow chart is taken from the Taiwan Stock Exchange Corporation website.[2] The unreported process for firms to be listed in the GTS market is similar.

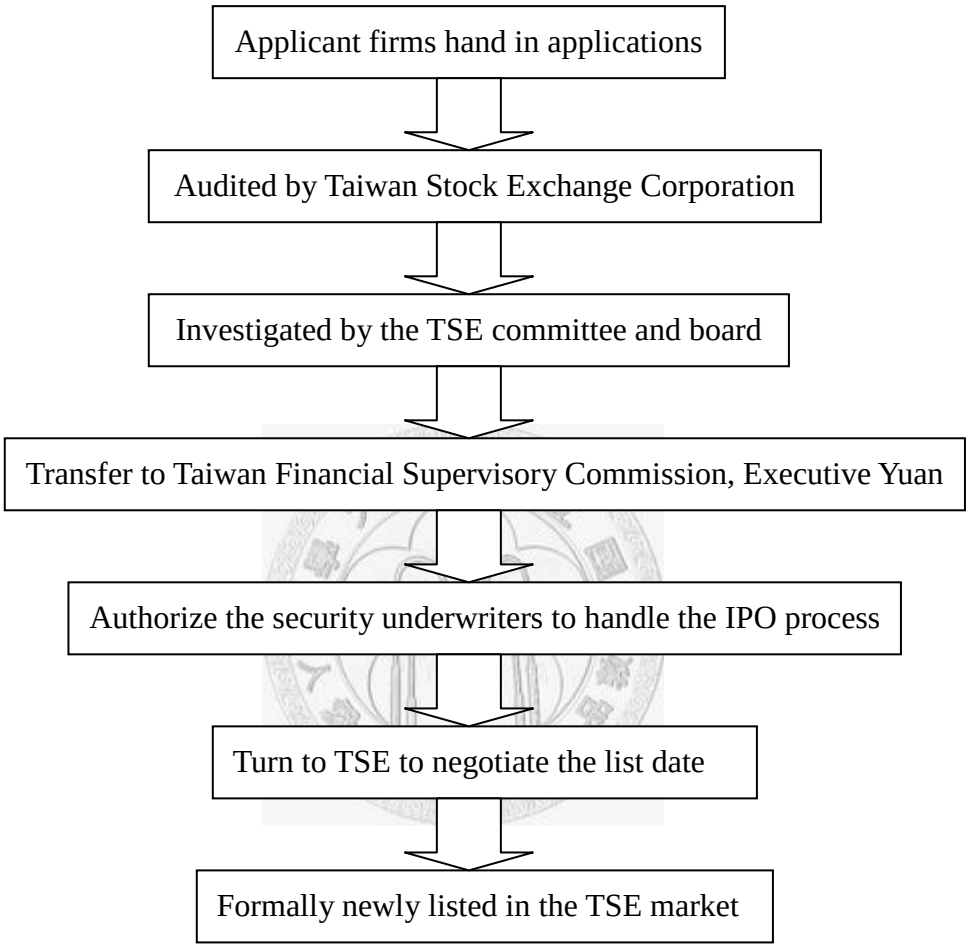

Figure 3.1: Listed Process Flow Chart

This study also organizes the criteria for applicant firms to be listed in TSE and GTS markets in Table 3.1. It shows that the primary requirements for the applicant firms are duration of corporate existence, paid-in capital, profitability, and dispersion of shareholdings. The motivations of this study are derived from the profitability requirements that applicant firms have to achieve in the most recent two years (year -1 and -2).

[2] http://www.tse.com.tw/

Table 3.1: Criteria for applicant firms to be listed in TSE and GTS markets

Requirements	TSE market criteria[3]	GTS market criteria[4]
Duration of corporate existence	More than 3 years incorporated and registered under the Company Act	More than 2 years incorporated and registered under the Company Act
Capital stock	NT$600 million (paid-in capital)	NT$50 million (paid-in capital)
Profitability (income before tax of the share capital)	Does not have any accumulated deficit in the final accounting for the most recent fiscal year, and meet either of the following criteria: 1. Both of most recent 2 fiscal years: 6% or average 6% (most recent fiscal year larger than preceding fiscal year) 2. Both of most recent 5 fiscal years: 3%	Does not have any accumulated deficit in the final accounting for the most recent fiscal year, and meet the following criteria: Both of most recent 2 fiscal years: 3% or average 3% (most recent fiscal year larger than preceding fiscal year) Income before tax shall not be less than NT$4 million in the most recent fiscal year
Dispersion of shareholdings	1. The number of holders of registered shares shall be 1,000 or more 2. There are not less than 500 registered shareholders holding from 1,000 shares to 50,000 shares 3. The total number of shares held by such shareholders is 20% or more of the total issued shares, or at least 10 million shares	1. There are not less than 300 registered shareholders holding from 1,000 shares to 50,000 shares 2. The total number of shares held by such shareholders is 10% or more of the total issued shares or more than 5 million shares
Others		Stocks shall have been traded on the emerging stock market for six months or more

[3] Data is from Taiwan Stock Exchange Corporation Rules Governing Review of Securities Listings.
[4] Data is from GreTai Securities Market Rules Governing Review of Securities Traded on Over-the-Counter Markets.

3-2 Variables Measurement

Current Accruals (CA)

Although managers can manipulate earnings through current and long-term accruals, they have greater flexibility and control on the current portion. So this study focuses only on the current accruals. Based on the common definition of current accruals in the earnings management literatures (Jones [1995], Teoh et al. [1998b]), this study calculates the current accruals by using the following formula:

$$\begin{aligned} CA = {} & \Delta[\text{AccountsReceivable} + \text{Inventory} + \text{OtherCurrentAssets}] \\ & - \Delta[\text{AccountsPayable} + \text{TaxPayable} + \text{OtherCurrentLiabilities}], \end{aligned} \tag{7}$$

where:

CA : Current accruals calculated from balance sheet changes.

Discretionary and Nondiscretionary Current Accruals (DCA) (NDCA)

Accruals can be separated into two portions, discretionary and nondiscretionary. Jones (1991) assumes that the nondiscretionary portion of accruals is caused by the changes of firms' business conditions instead of manipulations, and uses change in sales to control the effects. This study uses the discretionary current accruals as a primary proxy of earnings management due to the greater flexibility and easier control on it. This paper uses the following modified version (Teoh et al. [1998b]) of the Jones model to estimate the nondiscretionary current accruals:

$$\frac{CA_{it}}{TA_{it-1}} = \alpha_0\left(\frac{1}{TA_{it-1}}\right) + \alpha_1\left(\frac{\Delta Sales_{it}}{TA_{it-1}}\right) + \varepsilon_{it}, \tag{8}$$

$$NDCA_{it} = \hat{\alpha}_0\left(\frac{1}{TA_{it-1}}\right) + \hat{\alpha}_1\left(\frac{\Delta Sales_{it} - \Delta TR_{it}}{TA_{it-1}}\right), \tag{9}$$

where:

CA_{it} : Current accruals in year t for firm i,

TA_{it-1} : Total assets in year t-1 for firm i,

$\Delta Sales_{it}$: Sales in year t less sales in year t-1 for firm i,

ΔTR_{it} : Accounts receivable in year t less accounts receivable in year t-1 for firm i,

ε_{it} : Residuals in year t for firm i.

Using the lagged total assets as a deflator is trying to decrease the problem of heteroskedasticity.

For each sample observation, this paper uses all the listed firms' data with the same industry-year to run the regression, but drops the newly listed year observations, then put the parameters into the second formula to estimate the NDCA. Subtracting the change in accounts receivable from change in sales implicitly assumes that all the changes in credit sales are due to earnings management (Dechow et al. [1995]). Finally, the discretionary current accruals in year t for firm i is the difference between CA/TA_{t-1} and NDCA:

$$DCA_{it} = \frac{CA_{it}}{TA_{it-1}} - NDCA_{it}. \quad (10)$$

Net Income (NI) and Cash Flow from Operations (CFO)

Besides examining the discretionary current accruals around the newly listed period, this study also observes the earnings and cash flow from operations both pre- and post-listed years to see the changes of firms' operating performances. These two accounting numbers are directly from financial statements and deflated by the previous year's total assets. The industry-adjusted net income is obtained by subtracting the same industry-year median from the sample firms' net income. The way to calculate the industry-adjusted cash flow from operations is the same. The formulas are:

$$Industry-adjustedNI_{it} = \frac{NI_{it}}{TA_{it-1}} - \frac{\overline{NI_{it}}}{\overline{TA_{it-1}}}, \quad (11)$$

$$Industry-adjustedCFO_{it} = \frac{CFO_{it}}{TA_{it-1}} - \frac{\overline{CFO_{it}}}{\overline{TA_{it-1}}}. \quad (12)$$

Time Line for Earnings Management

This study mainly examines the discretionary current accruals around newly listed period and also observes the changes of earnings and operating cash flows, so the measurement time period are important. As shown in Figure 3.2, year 0 represents the first fiscal year-end of the newly listed firms while year -1 means the last fiscal year-end before going listed.

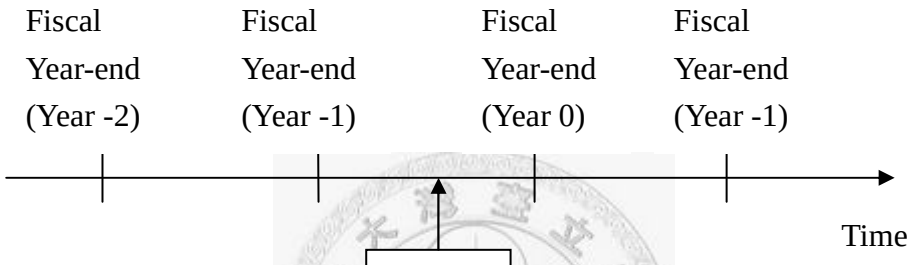

Figure 3.2: Time Line

3-3 Analysis Methodology

This study uses the modified version of Jones model to estimate the discretionary current accruals for sample firms around the newly listed years, and also calculates the industry adjusted net income and operating cash flow as two indicators for firms' operating performance. This paper lists these three variables from two years before going listed (year -2) to subsequent four years (year 4) to examine the relation between discretionary current accruals and industry adjusted net income or operating cash flow. This study also calculates the p-value of Wilcoxon signed-rank test for these variables to test the significance of discretionary current accruals at the event year (year 0). The sample firms are separated into four groups based on the DCA

quartiles at year 0 to avoid the linear parameterization of regressions mentioned by Teoh et al. (1998b). Teoh et al. (1998b) interpret that the significantly positive DCA and accounting earnings at the event year-end are induced by earnings management. But this paper casts doubt about their interpretations as following reasons.

First, the discretionary current accruals of sample firms in the “aggressive” group are too large to be reliable. It is not possible that firms inflate their account receivables and inventories in such magnitude, which surely would be detected.

Second, the accounting numbers in the event year-end includes both pre- and post-listing period. That means any changes in working capital in the event year would be considered earnings management. The process of going listed in the stock market may cause the sample firms’ working capital levels to change because the proceeds from this process may relax the capital constraints of newly listed firms (Ball and Shivakumar 2007).

Third, Hribar and Collins (2002) show that the current accruals estimated from successive balance sheets would be biased if there are non-operating events, such as acquisition or divestiture. Hribar and Collins (2002) suggest that using cash flow statements to estimate current accruals is better. But due to the TEJ database constraint, the formulas used to calculate current accruals from balance sheets and cash flow statements are not the same. So, this paper is not going to test these potential biases related to discretionary current accruals estimated from balance sheet changes.

This paper then conducts a detailed examination of the individual working capital components of the accruals in the event year and evaluates their changes and reasonableness.

Due to the potential problems related to the accounting numbers at the event year-end mentioned in previous paragraphs when it goes to the earnings management hypothesis. Hribar and Collins (2002) demonstrate that the last financial statements issued prior to the IPO (year -1) offer a more valid test of the earnings management and conservative reporting hypothesis. Table 3.1 shows that if firms want to be listed in the TSE or GTS markets, they have to qualify the profitability criteria in most recent two years (year -1 and -2). This study then estimates the discretionary current

accruals in event year -1 and -2 for sample firms. The discretionary current accruals are estimated by using the modified Jones model. This paper examines these discretionary current accruals to see whether the newly listed firms engage in earnings management prior to their listing in the TSE and GTS markets.

Furthermore, this study also tests whether firms report conditionally conservatively in their last two financial statements before going listed in the TSE and GTS market. Accounting conservatism is a popular topic in accounting literatures. Basu (1997) defines conservatism as capturing accountants' tendency to require a higher degree of verification for recognizing good news than bad news in financial statements. Under his interpretation of conservatism, earnings reflects bad news more quickly than good news. Accounting conservatism is divided into two general ways. First, conservatism can be unconditional (or news independent), meaning that the accounting process determined at the inception of assets and liabilities yield expected unrecorded goodwill. Second, conservatism can be conditional (or news dependent), meaning that book values are written down under sufficiently adverse circumstances but not written up under favorable circumstances, with the latter being the conservative behavior. Beaver and Ryan (2005) illustrate some examples for unconditional conservatism, such as immediate expensing of the costs of most internally developed intangibles and historical cost accounting for positive net present value projects. Examples for conditional conservatism include lower of cost or market accounting for inventory and impairment accounting for long-lived tangible and intangible assets.

The role of accruals in Dechow et al. (1998) is to mitigate noise in operating cash flow. For example, purchasing inventory by cash would cause the negative operating cash flow but inventory would also rise based on the matching principle. The primary function of working capital accruals is thus to make the earnings less noisy than cash flow from operations. One implication is that the current accruals and cash flow from operations are negatively correlated.

Ball and Shivakumar (2005) provide a second role for accruals, timely recognition of economic gains and losses, and hypothesize it is a source of positive but asymmetric correlation between accruals and cash flows. The positive correlation

between accruals and cash flows arises because cash flows from a durable asset tend to correlated over time. For example, an investment experiencing decreased current period cash flow is likely to be experiencing a downward revision in its expected future cash flows, and which is accomplished by accruals.

Due to the conditional conservatism, economic losses are more likely to be recognized on a timely basis as unrealized accruals, economic gains are more likely to be recognized when realized as cash basis. This asymmetry implies that the positive correlation between cash flows and accruals caused by the second role of accruals is greater in the case of losses.

This paper uses the following regression adapted from Ball and Shivakumar (2005, 2006, 2007) to examine the asymmetry and conditional conservatism:

$$\begin{aligned} CA_{it} = \; & \alpha_0 + \alpha_{10} DTSE_{it} + \alpha_{20} DGTS_{it} \\ & + \alpha_1 \Delta Sales_{it} + \alpha_{11} DTSE_{it} * \Delta Sales_{it} + \alpha_{21} DGTS_{it} * \Delta Sales_{it} \\ & + \alpha_2 CFO_{it} + \alpha_{12} DTSE_{it} * CFO_{it} + \alpha_{22} DGTS_{it} * CFO_{it} \\ & + \alpha_3 DCFO_{it} + \alpha_{13} DTSE_{it} * DCFO_{it} + \alpha_{23} DGTS_{it} * DCFO_{it} \\ & + \alpha_4 DCFO_{it} * CFO_{it} + \alpha_{14} DTSE_{it} * DCFO_{it} * CFO_{it} + \alpha_{24} DGTS_{it} * DCFO_{it} * CFO_{it} + \kappa_{it}, \end{aligned} \tag{13}$$

where:

CA_{it} : Current accruals in year t for firm i (scaled by beginning total assets),

$\Delta Sales_{it}$: Sales in year t less sales in year t-1 for firm i (scaled by beginning total assets),

CFO_{it} : Cash flow from operations in year t for firm i (scaled by beginning total assets),

$DCFO_{it}$: Dummy variable, takes 1 if CFO < 0 and 0 otherwise,

$DTSE_{it}$: Dummy variable, takes 1 in event year -1 or -2 for firms newly listed in TSE,

$DGTS_{it}$: Dummy variable, takes 1 in event year -1 or -2 for firms newly listed in GTS.

This model provides for both roles of accruals, mitigating of noise in cash flow (Dechow et al. [1998]) and asymmetric recognition of unrealized gains and losses (Ball and Shivakumar [2005]). This paper predicts a negative coefficient for cash flow

α_2 as in Dechow et al. (1998) to show the first role of accruals (mitigating noises in cash flows) and a positive incremental coefficient α_4 for negative cash flows because accrued losses are more likely in periods of negative cash flows (conditional conservatism). The greater (less) conditional conservatism in the event year -1 or -2 relative to those of listed firms implies positive (negative) coefficients α_{14} and α_{24}. This would indicate greater (less) incremental sensitivity of current accruals to negative cash flows for the newly listed firms than the α_4 coefficient for already listed firms. The coefficients α_{10} and α_{20} are used to capture any incremental accruals of the newly listed firms that are not explained by other variables in the model. The coefficients α_{10} through α_{14} are used to let the coefficients vary between the newly listed firms in the TSE market and listed firms while α_{20} through α_{24} are for the newly listed firms in the GTS market.

Finally, Ball and Shivakumar (2007) mention that when using the modified Jones model to estimate the non-discretionary current accruals of sample firms, there is an implicit assumption that the non-discretionary current accruals of newly listed and listed firms are determined in the same way, which seems unlikely. Ball and Shivakumar (2007) assume that the sensitivity of accruals to changes in revenue depends on a firm's stage in the life cycle and the proceeds from the stock market may change the working capital levels of newly listed firms. Hence the event year is likely to exhibit large increases in working capital both unconditionally and conditionally on sales. This paper uses following regression to illustrate this out-of-sample estimation problem:

$$\begin{aligned} CA_{it} = {} & \alpha_0 + \alpha_{10} DTSE_{it} + \alpha_{20} DGTS_{it} \\ & + \alpha_1 \Delta Sales_{it} + \alpha_{11} DTSE_{it} * \Delta Sales_{it} + \alpha_{21} DGTS_{it} * \Delta Sales_{it} + \varepsilon_{it}, \end{aligned} \tag{14}$$

where:

CA_{it} : Current accruals in year t for firm i (scaled by beginning total assets),

$\Delta Sales_{it}$: Sales in year t less sales in year t-1 for firm i (scaled by beginning total assets),

$DTSE_{it}$: Dummy variable for firms newly listed in TSE market at year 0,

$DGTS_{it}$: Dummy variable for firms newly listed in GTS market at year 0.

This regression is estimated separately for industry-specific data and also pooled data, allowing the coefficients to vary between listed firms and newly listed firms in TSE or GTS market.

This paper assumes that the newly listed firms are in the high growth stage of their life cycles compared to those firms already listed in the stock market, and assumes that the proceeds from the listing process relax their capital constraints. Hence the newly listed year is likely to exhibit large increases in working capital unconditionally and conditionally on sales. This implies that the incremental coefficients α_{10}, α_{20}, α_{11}, and α_{21} are all positive.

3-4 Sample Selection and Data

The initial sample includes 554 companies which get the final approval of the Securities and Futures Bureau to be newly listed in the Taiwan Stock Exchange Market, and 822 companies newly listed in the GreTai Securities Market between 1992 and 2006. Due to the following reasons, the final sample consists of 499 firms newly listed in TSE market and 744 firms newly listed in GTS market. Table 3.4.1 shows the process of sample selection.

1. Excluding the “Finance and Insurance” industry because of their special characteristics.
2. Excluding the “Others” industry, because of their varying characteristics.
3. Excluding the “Glass and Ceramics”, “Paper and Pulp”, “Automobile”, “Oil and Gas and Electricity” industries. This study uses the cross-sectional modified Jones Model to calculate the nondiscretionary portion of current accruals, which is using the same industry and same year-listed firms to estimate the parameters, so every regression should have enough observations for the accuracy and confidence purposes of estimation. There are less than 10 listed firms in each industry-year for the excluded industries.
4. Excluding 30 firms transferred from TSE market to GTS market due to their motivations to be listed in GTS market are not the same with other firms in the GTS market.
5. Excluding the sample firms with missing data in the TSE or GTS year (year 0).

Tables 3.4.2 and 3.4.3 show the sample characteristics by industry distribution and time distribution separately. The sample firms in the “Electronics” industry account for over 60% of all the sample firms (62.3% in TSE sample and 71.5% in GTS sample), which is consistent with other literatures in Taiwan (Huang [1995] and Tai [1999]).

Table 3.4.1: Sample selection

	TSE market	GTS market
Population of newly listed firms, 1992-2006	554	822
Exclusions:		
Market transfer from TSE to GTS		(30)
Industries	(40)	(40)
Data availability	(15)	(8)
Final sample	499	744

Table 3.4.2: Sample Characteristics (Industry Distribution)

Industry	TEJ code	TSE sample	%	GTS sample	%
Foods	12	13	2.6	6	0.8
Textiles	14	29	5.8	18	2.4
Electric and Machinery	15	32	6.4	39	5.2
Electrical and Cable	16	7	1.4	6	0.8
Electronics	23	311	62.3	532	71.5
Plastics	13	11	2.2	10	1.3
Chemicals, Biotech and Healthcare	17	21	4.2	50	6.7
Rubber	21	3	0.6	3	0.4
Cement	11	1	0.2	0	0.0
Steel and Iron	20	23	4.6	19	2.6
Building Material and Construction	25	34	6.8	36	4.8
Shipping and Transportation	26	9	1.8	10	1.3
Tourism	27	1	0.2	6	0.8
Trading and Consumers' Goods Industry	29	4	0.8	9	1.2
Total		499	100.0	744	100.0

Table 3.4.3: Sample Characteristics (Time Distribution)

TSE (GTS) year	TSE sample	%	GTS sample	%
1992	25	5.0	2	0.3
1993	23	4.6	2	0.3
1994	23	4.6	1	0.1
1995	36	7.2	9	1.2
1996	29	5.8	22	3.0
1997	17	3.4	34	4.6
1998	21	4.2	71	9.5
1999	24	4.8	85	11.4
2000	72	14.4	89	12.0
2001	61	12.2	86	11.6
2002	72	14.4	97	13.0
2003	42	8.4	76	10.2
2004	33	6.6	85	11.4
2005	10	2.0	51	6.9
2006	11	2.2	34	4.6
Total	499	100.0	744	100.0

This study uses the Taiwan Economic Journal (TEJ) industry categories to do the cross-sectional analysis, so there are 14 different industries in the sample. The discretionary current accruals are estimated by different industry-years. However, when it goes to the conditional conservatism test and out-of-sample test, using these 14 different industries to run the industry-specific regressions causes a problem. That is, there are not enough observations for the dummy variables (DTSE, DGTS). Due to the problem, this study makes industry combination procedure adopted by Huang (1995) only for the two tests mentioned above. Table 3.4.4 shows the industry adjustments process. This study combines the "Electric and Machinery", "Electrical and Cable", and "Electronics" into the "Electrical" industry; the "Plastics", "Chemicals, Biotech and Healthcare", and "Rubber" into the "Plastics and Chemicals" industry; the "Cement", "Steel and Iron", and "Building Material and Construction" into the "Building Material and Construction" industry; the "Shipping and Transportation", "Tourism", and "Trading and Consumers' Goods" into the

"Services and Sales" industry.

Table 3.4.4: Industry Adjustments

TEJ Industry Category (for DCA)	New Industry (only for out-of-sample and conditional conservatism tests)
Foods	Foods
Textiles	Textiles
Electric and Machinery Electrical and Cable Electronics	Electrical
Plastics Chemicals, Biotech and Healthcare Rubber	Plastics and Chemicals
Cement Steel and Iron Building Material and Construction	Building Material and Construction
Shipping and Transportation Tourism Trading and Consumers' Goods Industry	Services and Sales

The financial statements, accounting numbers, the dates of firms newly listed in TSE or GTS market, and other relevant data are mainly from Taiwan Economic Journal (TEJ) database. In case of important data missing, this paper turns to Market Observation Post System (MOPS) website[5] for the information.

[5] http://mops.tse.com.tw/

Chapter 4. Empirical Results and Analysis

This chapter is organized into the following sections. Section 1 shows the pair-wise correlations of the variables. Section 2 examines the reasonableness of the cross-sectional modified Jones model by industries that this study used to estimate discretionary current accruals. Section 3 shows the patters of discretionary current accruals and two operating performance indicators from event year -2 to event year 4. Section 4 examines the working capital components changes in the event year (year 0) and demonstrates that the discretionary current accruals in the year 0 are not reliable. Section 5 shows the discretionary current accruals in the event year -1 and -2 that this study used to test whether firms engage in earnings management before newly listed in the TSE and GTS markets. Section 6 depicts the trend of the profitability index for newly listed firms from event year -10 to event year 5. Section 7 shows that the sample firms report even more conditionally conservative than other listed firms in year -1 and -2 by using a regression analysis. Finally, this paper also examines the out-of-sample estimation biases mentioned by Ball and Shivakumar (2007).

4-1 Pair-wise Correlations

Table 4.1 lists the pair-wise correlations of variables in this study. The discretionary current accruals are significantly negatively correlated with cash flow from operations and positively correlated with change in sales. The results are consistent with Teoh et al. (1998b) and Ball and Shivakumar (2007). There is no obvious correlation between discretionary current accruals and market value. Table 4.3 Panel B also shows the evidence that DCAs are not correlated with market value when the DCAs are categorized into four groups.

Table 4.1: Pair-wise correlations

Variables	DCA	CFO	ΔSales	MV	BV/MV
DCA	1.000				
CFO	-0.544***	1.000			
ΔSales	0.093***	-0.049***	1.000		
MV	-0.003	0.126***	0.055***	1.000	
BV/MV	0.014	-0.024**	-0.028***	-0.027**	1.000

- DCA: Discretionary current accruals.
- CFO: Cash flow from operations.
- ΔSales: Changes in sales.
- MV: Firm's market value.
- BV/MV: Firm's book value to market value.
- ***Significant at 1% level. **Significant at 5% level.

4-2 Cross-Sectional Modified Jones Model

This study adopts the cross-sectional modified Jones model to estimate the nondiscretionary current accruals and then calculate the discretionary current accruals, which are the primary proxies of the earnings management. Before analyzing the patterns of discretionary current accruals for newly listed firms around event period, the study examines the reasonableness of this model by industries first. Table 4.2 shows the descriptive statistics of the results.

From the perspective of all industries as a whole, the mean adjusted R-squared is 23.96%, and for the coefficient of the change in sales variable, there are over 50% of observations not significant at 5% level based on t-tests.[6] The explanatory power of the model for all observations is low, but the direction of the coefficient of change in sales variable is in accordance with expectation that accruals are positively correlated with change in sales.

From the perspective of each industry, the "Electronics" industry has the highest mean and median adjusted R-squared (36.73% and 34.57%), and the change in sales

[6] Generally, if the absolute value of t is greater than 2, the variable is significant at 5%.

variable is significant at 5% level for all the observations[7] based on t-tests. It reveals that the change in sales has a high explanatory power for nondiscretionary current accruals in the “Electronics” industry. The “Trading and Consumers' Goods” Industry has the lowest mean and median adjusted R-squared (8.91% and -4.47%), and the change in sales variable is not significant at 5% level for over 75% of observations based on t-tests. It shows that the explanatory power of the explanatory variable is quite low in the “Trading and Consumers' Goods” industry. Table 4.2 reveals the variations in explanatory powers among industries. However, the direction of the coefficient of the explanatory variable (change in sales) is in accordance with expectation.

When using the cross-sectional model to estimate nondiscretionary current accruals, the explanatory power of each regression becomes important. Moreover, the model uses change in sales as a variable to control the fluctuation of firms’ business conditions, which means if change in sales cannot catch the nondiscretionary portion of current accruals, the explanatory power of the regression would decline and DCA would be biased. Nevertheless, there is no perfect model to estimate discretionary current accruals in the literatures. This paper still uses the cross-sectional modified Jones model to estimate DCA (Teoh et al. [1998b]).

[7] Even the smallest t value for change in sales is 4.16 which is greater than 2.

Table 4.2: Descriptive statistics of modified Jones Model estimations by industries

$$\frac{CA_{it}}{TA_{it-1}} = \alpha_0\left(\frac{1}{TA_{it-1}}\right) + \alpha_1\left(\frac{\Delta Sales_{it}}{TA_{it-1}}\right) + \varepsilon_{it},$$

where:

CA_{it} : Current accruals in year t for firm i,

TA_{it-1} : Total assets in year t-1 for firm i,

$\Delta Sales_{it}$: Sales in year t less sales in year t-1 for firm i,

ε_{it} : Residuals in year t for firm i.

Industry: Foods

	α_0	$t(\alpha_0)$	α_1	$t(\alpha_1)$	Adj. R^2 (%)
Mean	18743.6	0.8143	0.2072	2.7537	33.33
Std. Dev.	28428.9	1.2044	0.3153	3.5501	28.23
Median	19625.4	1.2156	0.1120	2.2161	28.64
Minimum	-33195.6	-1.3876	-0.1822	-3.8575	-2.6
Q1	8106.6	0.2544	0.0795	0.7023	10.34
Q3	36287.1	1.9243	0.2089	3.9997	66.78
Maximum	86804.7	2.3194	1.2142	11.7504	83.19

Industry: Textiles

	α_0	$t(\alpha_0)$	α_1	$t(\alpha_1)$	Adj. R^2 (%)
Mean	1272.9	0.2507	0.2216	3.8747	19.04
Std. Dev.	84440.2	1.4544	0.4747	7.1040	25.77
Median	12823.7	0.8304	0.1616	1.8575	8.96
Minimum	-280310.8	-2.9083	-0.2798	-1.7214	-2.8
Q1	-2129.8	-0.1725	0.0784	1.1676	3.76
Q3	44856.1	1.2492	0.2245	4.4371	24.5
Maximum	98990.8	1.9124	1.8467	28.3136	95.91

Industry: Electric and Machinery

	α_0	$t(\alpha_0)$	α_1	$t(\alpha_1)$	Adj. R^2 (%)
Mean	15516.8	0.4277	0.2711	2.6688	27.06
Std. Dev.	50877.4	1.3489	0.2241	2.2045	24.87
Median	4013.6	0.1903	0.2267	2.6263	21.26
Minimum	-95615.4	-1.7724	-0.0822	-0.8447	-9.15
Q1	-14451.8	-0.3978	0.1405	1.0208	13.87
Q3	62225.4	1.5282	0.4396	3.5875	43.97
Maximum	112835.2	2.5713	0.6939	8.1977	77.45

Table 4.2 (continued)

Industry: Electrical and Cable

	α_0	$t(\alpha_0)$	α_1	$t(\alpha_1)$	Adj. R^2 (%)
Mean	-3173.1	-0.0830	0.2457	2.1928	31.52
Std. Dev.	170953.4	1.8442	0.1858	1.9215	31.26
Median	-6426.1	-0.1926	0.2571	1.8845	29.14
Minimum	-352571.8	-3.3049	-0.1302	-0.4186	-24.62
Q1	-48282.2	-1.0497	0.1905	0.5331	3.17
Q3	52906.3	1.8818	0.3491	4.1092	63.99
Maximum	395693.1	2.7843	0.5272	5.4380	77.33

Industry: Electronics

	α_0	$t(\alpha_0)$	α_1	$t(\alpha_1)$	Adj. R^2 (%)
Mean	17749.6	1.1603	0.1790	8.9595	36.73
Std. Dev.	17558.6	1.0628	0.0685	3.8951	16.8
Median	15756.6	0.8928	0.1625	7.8374	34.57
Minimum	-392.0	-0.0590	0.0656	4.1641	13.13
Q1	2810.8	0.5019	0.1262	5.9257	24.4
Q3	26540.6	1.5890	0.2533	11.9952	56.25
Maximum	55317.8	4.0081	0.2874	16.5283	62.92

Industry: Plastics

	α_0	$t(\alpha_0)$	α_1	$t(\alpha_1)$	Adj. R^2 (%)
Mean	8980.3	0.2153	0.1618	1.7139	20.46
Std. Dev.	48592.4	1.6053	0.1897	1.7670	22.69
Median	6492.3	0.3380	0.1040	1.3807	15.28
Minimum	-61350.9	-2.1657	-0.0734	-1.1251	-6.43
Q1	-26644.3	-0.9956	0.0321	0.3528	2.46
Q3	30673.3	1.3562	0.3028	3.3293	39.88
Maximum	137761.9	2.9166	0.6255	5.0106	59.43

Industry: Chemicals, Biotech and Healthcare

	α_0	$t(\alpha_0)$	α_1	$t(\alpha_1)$	Adj. R^2 (%)
Mean	23914.9	1.1805	0.1861	2.0112	18.49
Std. Dev.	32886.8	1.6445	0.2056	1.8658	20.57
Median	15727.8	1.0058	0.1829	1.9469	17.39
Minimum	-26242.9	-1.5835	-0.0983	-1.2453	-7.84
Q1	-1218.6	-0.1662	0.0628	0.5765	0.26
Q3	46118.5	2.3855	0.2342	4.0051	34.78
Maximum	80432.5	4.9328	0.7113	4.4989	56.98

Table 4.2 (continued)

Industry: Rubber

	α_0	$t(\alpha_0)$	α_1	$t(\alpha_1)$	Adj. R^2 (%)
Mean	36734.6	0.3949	-0.0531	0.1404	28.44
Std. Dev.	120058.3	2.1784	0.2229	1.4055	29.2
Median	4038.0	0.0770	-0.0161	-0.0460	37.47
Minimum	-121183.2	-3.6022	-0.4970	-1.6880	-17.45
Q1	-46875.5	-1.0775	-0.1952	-1.0410	2.02
Q3	112714.3	2.2630	0.1044	0.7896	55.46
Maximum	352038.3	4.2137	0.2402	3.8434	69.89

Industry: Cement

	α_0	$t(\alpha_0)$	α_1	$t(\alpha_1)$	Adj. R^2 (%)
Mean	-55884.0	-0.2049	0.0911	0.7180	22.03
Std. Dev.	132149.5	1.2329	0.7024	1.7096	31.12
Median	-25845.2	-0.4939	0.3365	0.9789	28.54
Minimum	-338857.1	-1.7275	-2.1800	-3.7601	-18
Q1	-156615.8	-1.2332	0.0957	0.4178	-5.93
Q3	23105.5	0.3213	0.4581	1.9251	49.42
Maximum	136164.8	3.1289	0.7441	2.7846	80.19

Industry: Steel and Iron

	α_0	$t(\alpha_0)$	α_1	$t(\alpha_1)$	Adj. R^2 (%)
Mean	20317.7	0.4227	0.2367	2.8665	26.08
Std. Dev.	55465.1	0.9151	0.2223	2.4945	26.47
Median	12623.6	0.3364	0.2431	2.6811	23.48
Minimum	-66333.0	-0.9289	-0.0849	-0.4708	-7.62
Q1	-5305.7	-0.1948	0.1303	1.1385	1.04
Q3	37518.0	1.1861	0.3153	4.2955	56.32
Maximum	154279.5	2.1579	0.8462	8.0433	68.02

Industry: Building Material and Construction

	α_0	$t(\alpha_0)$	α_1	$t(\alpha_1)$	Adj. R^2 (%)
Mean	201098.7	1.1971	0.3763	1.5117	18.86
Std. Dev.	317985.8	2.5461	0.4458	1.7077	19.12
Median	196085.3	1.4831	0.1557	1.2867	15.85
Minimum	-161809.0	-3.1336	-0.2075	-2.3343	-3.59
Q1	-12800.8	-0.1172	0.1465	0.6881	2.01
Q3	340508.0	2.1313	0.5663	3.1904	32.21
Maximum	1144346.0	7.9978	1.3746	4.1716	68.48

Table 4.2 (continued)

Industry: Shipping and Transportation

	α_0	t(α_0)	α_1	t(α_1)	Adj. R^2 (%)
Mean	8533.2	0.0936	0.0640	1.7457	18.04
Std. Dev.	47137.0	1.1647	0.4837	5.4739	29.61
Median	6191.5	0.2502	0.0849	0.7093	5.94
Minimum	-69385.7	-1.8137	-1.3255	-5.0054	-13.82
Q1	-32046.4	-0.8617	-0.0099	-0.2403	-0.35
Q3	36056.5	1.0779	0.3337	2.0276	30.78
Maximum	115947.6	1.8233	0.9457	20.1445	95.29

Industry: Tourism

	α_0	t(α_0)	α_1	t(α_1)	Adj. R^2 (%)
Mean	-305.8	-0.4012	0.1000	-1.0117	26.42
Std. Dev.	25469.8	1.8365	0.6482	2.2185	42.44
Median	-2841.7	-0.3217	-0.0532	-1.3604	28.8
Minimum	-37614.7	-3.9056	-0.5258	-5.1161	-45.47
Q1	-11820.3	-1.2338	-0.1401	-2.7413	-23.08
Q3	5650.9	0.5003	0.1465	0.4028	69.14
Maximum	77278.3	3.6908	2.2886	3.9980	81.19

Industry: Trading and Consumers' Goods Industry

	α_0	t(α_0)	α_1	t(α_1)	Adj. R^2 (%)
Mean	2177.6	-0.0316	0.0734	0.8674	8.91
Std. Dev.	101393.9	1.2505	0.2552	2.2302	30.41
Median	3223.4	0.0575	0.0149	0.0708	-4.47
Minimum	-238133.7	-2.0424	-0.2210	-1.5897	-24.81
Q1	-61057.7	-1.0605	-0.1069	-0.5402	-10.45
Q3	40233.9	0.9325	0.1008	1.4349	32.64
Maximum	213625.4	2.4947	0.6078	6.9439	84.54

Industry: All

	α_0	t(α_0)	α_1	t(α_1)	Adj. R^2 (%)
Mean	21119.8	0.3883	0.1686	2.2152	23.96
Std. Dev.	125828.9	1.6143	0.3806	3.8490	27.78
Median	8380.7	0.3495	0.1471	1.4062	20.97
Minimum	-352571.8	-3.9056	-2.1800	-5.1161	-45.47
Q1	-17370.3	-0.5784	0.0269	0.2228	1.74
Q3	42253.8	1.3711	0.2768	3.5804	44.71
Maximum	1144346.0	7.9978	2.2886	28.3136	95.91

4-3 Time-Series and Cross-sectional Characteristics of DCA

Table 4.3, Panel A, reports the time-series distribution of discretionary current accruals, the key measure of earnings management in this study, and two accounting performance measures, industry-adjusted net income and cash flow from operations as a percentage of lagged total assets from two years before event year (year -2) to subsequent four years (year 4). The median discretionary current accruals are at peak in year 0 (1.86% and 2.27%) and decline year by year, even become negative in year 4 (-0.51% and -1.24%). They are significantly positive in year 0 and year 1 for both TSE and GTS samples. The median industry-adjusted net income is significantly positive in year 0 (4.81% and 4.41%) and decline dramatically by year 4 (0.00% and -0.72%). The median cash flow from operations are at peak in the event year -1 (5.28% and 3.08%) and decline subsequently. The patterns of operating cash flows may indicate that the newly listed firms have good operating performances before listed in the stock market and apply for listing, but perform worse and worse after listed in the stock market. The patterns of these three variables and their significance are similar in TSE sample and GTS sample. These patterns are consistent with Tai (1999) study that newly listed firms have significantly positive discretionary current accruals and cause the high reported net income in year 0. The time series patterns of mean discretionary current accruals, reported net income, and operating cash flows are similar to the medians (the numbers are not reported in the table). The median net incomes in event year 0, -1, and -2 are all significantly positive, but the discretionary current accruals are only significantly positive in the event year. There is no evidence that sample firms inflate their earnings by accruals in event year -1 and -2.

Table 4.3, Panel B, shows the summary statistics of firm characteristics by DCA quartile. In order to avoid the linear parameterization of regressions, this paper separates firms' accruals in year 0 into four groups by DCA quartile. The "conservative" group contains the lowest 25% of DCAs while the "aggressive" group contains the highest 25% of DCAs. The variations within the "conservative" (8.83% and 12.12%) and "aggressive" (14.8% and 15.49%) groups are considerably larger

than the two middle groups, so the group median discretionary current accruals are more representative than group means. From table 4.3 panel B, the most obvious difference between TSE sample and GTS sample is that the firms' sizes in the TSE market are bigger than those in the GTS sample (3722M versus 1452M) because firms want to be listed in the TSE market usually have larger firm scales than those with GTS market.

In summary, Teoh et al. (1998b) and Tai (1999) interpret the patterns observed in Table 4.3 Panel A and significantly positive discretionary current accruals in the event year-end observed in Table 4.3 Panel B into earnings management for newly listed firms. However, this study casts doubt about the reliability of discretionary current accruals in the event year. So, this paper examines the fluctuations of the individual working capital components at the event year in the following section and then back to discusses the discretionary current accruals in the event year -1 and -2.

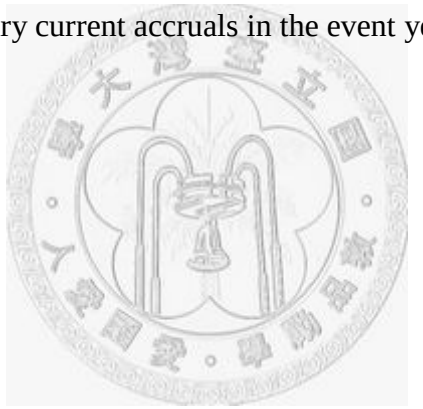

Table 4.3: Time-Series and Cross-sectional Characteristics of DCA

Panel A: Time-Series Distribution of Accruals and Accounting Performance (as a percentage of total assets in the prior year)

TSE sample

Year	-2	-1	0	1	2	3	4
Discretionary current accruals (DCA)							
Median	-0.37	0.33	1.86	1.08	0.29	0.16	-0.51
p (sign-rank)	0.6817	0.1814	0.0000	0.0008	0.1631	0.9750	0.0680
N	473	499	499	487	474	438	394
Industry-adjusted net income							
Median	4.65	5.59	4.81	2.60	1.00	0.26	0.00
p (sign-rank)	0.0000	0.0000	0.0000	0.0000	0.0010	0.2391	0.8204
N	473	499	499	487	474	438	394
Industry-adjusted cash flows from operation							
Median	2.98	5.28	2.81	1.43	0.86	1.49	1.13
p (sign-rank)	0.0000	0.0000	0.0000	0.0028	0.0224	0.0004	0.0393
N	473	499	499	487	474	438	394

Table 4.3 (continued)

Panel A: Time-Series Distribution of Accruals and Accounting Performance (as a percentage of total assets in the prior year)

GTS sample

Year	-2	-1	0	1	2	3	4
Discretionary current accruals (DCA)							
Median	-0.56	-0.27	2.27	0.79	0.48	0.01	-1.24
p (sign-rank)	0.0973	0.8377	0.0000	0.0000	0.3868	0.4309	0.0021
N	742	744	744	707	650	557	465
Industry-adjusted net income							
Median	4.07	4.94	4.41	2.14	0.58	-0.17	-0.72
p (sign-rank)	0.0000	0.0000	0.0000	0.0000	0.0251	0.6553	0.0208
N	742	744	744	707	650	557	465
Industry-adjusted cash flows from operation							
Median	1.62	3.08	1.15	0.62	0.15	0.11	-0.13
p (sign-rank)	0.0080	0.0000	0.2397	0.3127	0.1648	0.4661	0.9660
N	742	744	744	707	650	557	465

- Year 0 is the first listed year-end.
- The formula for industry adjusted net income is $\frac{NI_{it}}{TA_{it-1}} - \frac{\overline{NI_{it}}}{\overline{TA_{it-1}}}$: Subtracting the same industry-year median from the sample firms' net income, the way to calculate industry-adjusted cash flow from operations is the same.
- P-value is for the Wilcoxon signed-rank two tailed test.

Table 4.3 (continued)

Panel B: Summary Statistics of Firm Characteristics in TSE/GTS year by DCA Quartile

TSE sample

	Variable	DCA%			MV($m)	B/M(%)	E/P(%)	NI/TA_{-1}(%)
	Units	Median	Mean	Std. Dev.	Median	Median	Median	Median
Conservative Q1 (DCA<-3.9%)	125	-8.91	-11.40	8.83	4392	0.04	10.22	10.60
Quartile 2 (-3.9%<DCA<1.87%)	125	-0.82	-0.95	1.56	3571	0.05	9.95	9.01
Quartile 3 (1.87%<DCA<8.2%)	125	4.65	4.57	1.99	3643	0.05	9.97	10.27
Aggressive Q4 (DCA>8.2%)	124	14.90	19.56	14.80	3745	0.04	9.11	9.27
All firms	499	1.86	2.91	14.14	3722	0.05	9.87	9.46

GTS sample

	Variable	DCA%			MV($m)	B/M(%)	E/P(%)	NI/TA_{-1}(%)
	Units	Median	Mean	Std. Dev.	Median	Median	Median	Median
Conservative Q1 (DCA<-3.27%)	186	-8.01	-12.31	12.12	1421	0.05	10.66	8.85
Quartile 2 (-3.27%<DCA<2.28%)	186	0.07	-0.15	1.62	1462	0.05	8.24	9.43
Quartile 3 (2.28%<DCA<9.1%)	186	5.24	5.29	2.01	1468	0.05	9.78	10.18
Aggressive Q4 (DCA>9.1%)	186	17.60	21.70	15.49	1432	0.05	10.21	9.22
All firms	744	2.27	3.63	15.73	1452	0.05	9.71	9.35

- MV: Market value
- B/M: Book value/market value
- E/P: Earnings per share/stock price
- NI/TA_{-1}: Net income in event year/lagged total assets

4-4 Current Accruals Components for sample firms in year 0

Accounting numbers in the year 0 include both pre- and post-listed periods, it is too late to affect the stock price and not in accordance with the incentives that firms want to increase stock prices by inflating earnings. The changes in working capital from the last financial statements before listed in the stock market to the first year-end after the event are taken as indicating earnings management. However, those firms apply to be listed in the stock market may undergo unusual growth in production and sales, which mechanically causes positive accruals [Fairfield et al. (2003)]. Further, firms prior to publicly trading their stocks on average have been resource constrained, and they probably get the capital from the market after they are listed in the stock market. Any use of the proceeds to boost the working capital level is likely to be considered the earnings management if the discretionary current accruals are estimated using year 0 data. This kind of current accruals just reflects the firm's decision to invest in operating activities instead of managing earnings.

Table 4.4, Panel A, reports mean and median changes in total assets and individual working capital components in year 0, categorized by DCA quartile. Firms in the "aggressive" group increase their mean and median total assets by 47.22% and 37.35% in TSE sample, 46.62% and 37.59% in GTS sample, revealing that the growth in assets in this group is obviously higher than in other three groups. Firms in the "aggressive" group increase their accounts receivable on average by 12.00% (TSE) and 14.25% (GTS) of lagged total assets in the event year, while average pre-listed accounts receivable are only 20.38% (TSE) and 27.04% (GTS) of lagged total assets. These firms also show the inventories increased by 12.81% (TSE) and 11.87% (GTS) on average, while the average inventories in the year -1 are only 24.04% (TSE) and 20.83% (GTS) of total assets. Firms in the TSE sample and GTS sample exhibit the similar fluctuations of their individual working capital components. The changes of accounts receivable and inventories can explain half of the changes in total assets in the "aggressive" group. Both of these two variables are components of current accruals, Teoh et al. (1998b) interpret the increases as discretionary current accruals,

representing the earnings management. However, it is doubtful to inflate accounts receivable and inventories in such magnitudes without being detected.

Table 4.4, Panel B, reports the mean and median changes of individual working capital components as a percentage of their own pre-listed levels. It is not surprising to find out the firms in the “aggressive” group have the highest increase in working capital assets, but the magnitudes of changes are much larger than expected. For example, the mean and median accounts receivable grow by 77.6% and 47.63% in TSE sample, 77.61% and 44.05% in GTS sample. The huge increase is also detected in the inventories and other current assets, the mean growth of other current assets even reach 670.75%. The tremendous growth in working capital assets for quartile 4 is more likely to arise from investment in working capital assets than from earnings management. Such magnitudes of growth in working capital items would require fraudulent attempts and would be easily detected.

In the unreported data, this study finds that there are about 37% of TSE sample firms and 33% of GTS sample firms acquire cash from either resell their treasury stock or seasonal equity offering in the event year. The median cash inflows from these two ways are 0.15 in TSE sample and 0.17 in GTS sample (scaled by lagged total assets). From the perspective of each quartile, the medians in “aggressive” group are 0.22 (TSE) and 0.25 (GTS), much higher than other three groups. This may imply that firms in the “aggressive” group have much higher cash inflow from resell their treasury stock or seasonal equity offering in the event year and invest some of them into their working capital assets, which is consistent with the evidence in previous paragraph.

Firms in the quartile 1 generally show increases in the working capital liabilities higher than the other three groups. The median growth in accounts payable, tax payable and other current liabilities are 27.46%, 2.42%, and 29.87% in the TSE sample, all of them are larger than those in other groups. And the mean growth in accounts payable, tax payable and other current liabilities are 90.12%, 154.98%, and 603.44% in GTS market, the largest in all the quartiles. These increases in working capital liabilities suggest that firms classified as “conservative” may fund their growth in the current liabilities due to the better credit rating.

Table 4.4, Panel C, reports the 5 lowest and 5 highest DCA firms and their changes of individual components of current accruals as a percentage of lagged total assets. Firms in the “aggressive” group usually exhibit a large increase in current assets while firms in the “conservative” group exhibit the increase in current liabilities. These patterns are observed in table 4.4 Panel C. For example, firm 5505 and 2548 increase their inventories by 121.85% and 119.85% respectively. Firm 3020 and 8710 increase their accounts receivable by 88.73% and 95.55% respectively. All the increases are much larger than other firms. Firm 8078 and 3260 increase their accounts payable by 61.58% and 64.69%, larger than other firms.

In summary, the evidence found in this section is more consistent with that firms change their working capital levels than earnings management. The newly listed firms in the “aggressive group” tend to invest some of their proceeds into working capital assets, especially inventory, causing the event year’s discretionary current accruals to be positive. The newly listed firms in the “conservative” group tend to expand their working capital liabilities, causing the event year’s discretionary current accruals to be negative. The empirical evidence in GTS sample is similar to those in TSE sample.

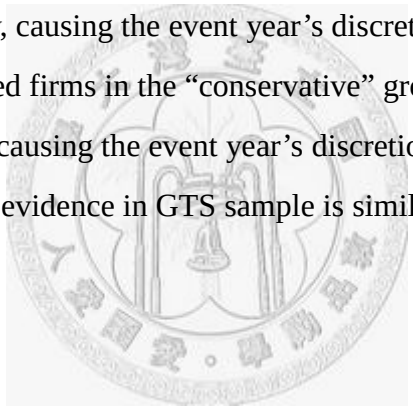

Table 4.4: Current Accrual Components in the newly listed year

Panel A: Total Assets and Working capital components: Pre-TSE/GTS levels and TSE/GTS-year changes (% of pre-TSE/GTS total assets)

TSE sample

Earnings Management Quartiles	Total assets year-1 ($millions)	ΔTotal assets year 0	Accounts receivable year-1	ΔAccounts receivable year 0	Inventory year-1	ΔInventory year 0	Other current assets year-1	ΔOther current assets year 0	Accounts payable year-1	ΔAccounts payable year 0	Taxes payable year-1	ΔTaxes payable year 0	Other current liabilities year-1	ΔOther current liabilities year 0
Quartile Means:														
1	6.08	25.47	22.47	2.50	20.17	0.53	2.16	0.03	14.69	5.77	0.99	0.40	0.63	0.31
2	6.87	21.08	18.97	2.03	12.50	1.11	1.88	-0.02	11.50	1.70	1.20	-0.09	0.70	-0.17
3	7.64	27.74	18.89	5.90	13.77	3.99	1.91	0.35	11.45	3.12	1.29	-0.11	0.61	0.11
4	3.40	47.22	20.38	12.00	24.04	12.81	2.61	2.61	12.22	4.38	1.13	0.13	0.56	0.29
Quartile Medians:														
1	2.65	18.07	20.99	1.14	16.44	0.48	0.96	0.08	12.93	3.22	0.76	0.06	0.25	0.08
2	2.36	14.31	18.28	0.82	10.81	0.57	0.87	0.01	8.87	0.53	0.88	-0.01	0.29	0.01
3	2.10	23.03	17.02	4.91	11.03	2.04	0.95	0.18	8.81	0.97	0.93	-0.04	0.23	0.01
4	2.47	37.35	18.83	9.05	17.41	8.67	1.52	0.89	11.92	2.02	0.89	-0.06	0.20	0.03

Table 4.4 (continued)

Panel A: Total Assets and Working capital components: Pre-TSE/GTS levels and TSE/GTS-year changes (% of pre-TSE/GTS total assets)

GTS sample

Earnings Management Quartiles	Total assets year-1 ($millions)	ΔTotal assets year 0	Accounts receivable year-1	ΔAccounts receivable year 0	Inventory year-1	ΔInventory year 0	Other current assets year-1	ΔOther current assets year 0	Accounts payable year-1	ΔAccounts payable year 0	Taxes payable year-1	ΔTaxes payable year 0	Other current liabilities year-1	ΔOther current liabilities year 0
Quartile Means:														
1	2.21	22.12	23.07	2.46	17.87	0.54	3.19	-0.04	13.76	4.92	1.15	0.54	0.54	0.67
2	2.81	23.88	20.98	3.91	15.33	2.01	2.43	-0.02	12.54	2.00	1.32	-0.02	0.59	0.22
3	2.04	25.96	23.19	6.27	16.11	3.53	2.47	0.67	14.03	1.56	1.29	0.23	0.65	0.02
4	1.38	46.62	27.04	14.25	20.83	11.87	2.94	2.87	17.52	3.27	1.53	0.29	0.45	0.13
Quartile Medians:														
1	1.15	15.99	22.43	1.50	13.65	0.43	1.85	0.06	11.87	2.01	0.80	0.12	0.23	0.03
2	0.99	15.17	19.11	2.53	12.60	1.05	1.21	0.05	10.12	1.13	0.96	-0.03	0.20	0.04
3	1.07	21.11	21.61	5.36	15.02	2.38	1.20	0.31	12.01	1.11	1.01	0.00	0.23	0.01
4	1.10	37.59	25.55	11.82	16.65	7.45	1.99	0.95	15.07	2.65	0.99	0.12	0.16	0.06

- Quartile 1 is the “conservative” group, which includes firms with lowest DCA in year 0.
- Quartile 4 is the “aggressive” group, which includes firms with highest DCA in year 0.

Table 4.4 (continued)

Panel B: Working Capital Components: TSE/GTS changes (% of pre-TSE/GTS level of the individual component)

TSE sample

Earnings Management Quartiles	Accounts receivable	Inventory	Other current assets	Accounts payable	Taxes payable	Other current liabilities
Mean % change in TSE year 0 (only firms with non-zero levels in pre-TSE year):						
1	16.44	11.75	291.49	41.59	93.84	357.46
2	14.18	15.24	285.87	21.03	97.72	110.08
3	41.84	48.22	152.09	28.23	56.23	389.44
4	77.60	67.24	670.75	67.67	284.80	461.09
Median % change in TSE year (all firms):						
1	7.48	2.98	14.43	27.46	2.42	29.87
2	6.62	7.17	23.89	8.54	-16.83	4.30
3	28.13	22.17	29.33	11.73	-13.67	11.65
4	47.63	46.64	46.20	20.28	-25.41	27.22

GTS sample

Earnings Management Quartiles	Accounts receivable	Inventory	Other current assets	Accounts payable	Taxes payable	Other current liabilities
Mean % change in GTS year 0 (only firms with non-zero levels in pre-GTS year):						
1	17.53	16.08	322.45	90.12	154.98	603.44
2	43.01	25.81	118.62	28.69	120.53	572.34
3	48.47	42.00	137.13	24.94	107.80	594.14
4	77.61	62.28	332.51	31.81	70.61	376.04
Median % change in GTS year (all firms):						
1	7.40	0.01	6.00	25.38	29.08	2.47
2	14.42	12.30	11.02	17.61	-20.19	19.39
3	26.85	18.40	26.92	10.71	-24.99	2.67
4	44.05	43.90	64.99	21.16	-1.21	33.21

- Quartile 1 is the “conservative” group, which includes firms with lowest DCA in year 0.
- Quartile 4 is the “aggressive” group, which includes firms with highest DCA in year 0.

Table 4.4 (continued)

Panel C: Ten extreme DCA firms in the sample: Changes in working capital items, % of pre-TSE/GTS total assets

TSE sample

Stock code	Name	Year 0	DCA (%)	Total Assets (Year -1) ($ million)	ΔAccounts receivable year 0 (%)	ΔInventory year 0 (%)	ΔOther current assets year 0 (%)	ΔAccounts payable year 0 (%)	ΔTaxes payable year 0 (%)	ΔOther current liabilities year 0 (%)
5 Smallest DCA (%) firms:										
1808	國賓大	1994	-59.50	1.17	9.28	3.08	0.09	28.27	0.47	0.43
8725	三采	1995	-44.83	3.36	2.23	-26.01	-1.62	14.11	.	0.03
8078	華寶	2003	-43.65	4.42	27.31	10.69	3.97	61.58	-1.16	1.75
6189	豐藝	2004	-39.85	3.05	5.19	10.89	0.07	23.52	.	-0.67
2356	英業達	1996	-34.55	8.67	28.42	-3.70	1.44	11.39	8.38	7.01
5 Largest DCA (%) firms:										
3052	夆典	1995	48.45	1.13	13.44	41.90	1.23	1.86	-0.40	0.13
2518	長億	1993	70.98	3.90	3.32	71.52	0.86	3.62	-2.32	1.50
2538	基泰	1996	73.50	2.60	-2.16	78.73	3.45	-10.66	0.25	0.45
3020	奇普仕	2002	76.06	2.33	88.73	11.05	7.39	20.06	2.79	0.10
2539	櫻建	1997	100.16	1.99	12.54	85.47	3.41	6.87	0.74	.

Table 4.4 (continued)

Panel C: Ten extreme DCA firms in the sample: Changes in working capital items, % of pre-TSE/GTS total assets

GTS sample

Stock code	Name	Year 0	DCA (%)	Total Assets (Year -1) ($ million)	ΔAccounts receivable year 0 (%)	ΔInventory year 0 (%)	ΔOther current assets year 0 (%)	ΔAccounts payable year 0 (%)	ΔTaxes payable year 0 (%)	ΔOther current liabilities year 0 (%)
5 Smallest DCA (%) firms:										
2546	根基	1998	-92.56	1.31	9.63	23.49	-1.30	24.85	0.41	0.77
3260	威剛	2004	-77.72	2.79	38.60	19.36	-3.11	64.69	-0.29	.
5511	德昌	1998	-60.25	1.71	0.18	-0.12	-0.79	25.45	-0.69	.
8112	至上	2004	-55.03	3.95	-14.25	-2.43	-9.81	2.56	-0.50	2.10
5528	廣大	1995	-52.61	8.79	14.79	-29.47	-0.99	-3.16	0.14	0.63
5 Largest DCA (%) firms:										
2544	益鼎光電	1998	72.55	164.29	0.45	78.25	1.91	1.67	0.94	0.55
5505	和旺	1998	84.67	328.02	0.29	121.85	6.72	9.35	0.22	0.61
8710	易欣	1998	86.61	162.80	95.55	56.10	31.57	14.01	2.82	-0.02
9960	邁達康	2004	88.13	151.88	1.28	52.08	-0.04	3.75	1.39	0.19
2548	華固	2000	122.70	241.49	9.90	119.85	-0.24	7.02	-0.68	-0.02

4-5 Discretionary Current Accruals in the event year -1 and -2

After examining the fluctuations of the individual working capital components in the previous section and illustrating the problems addressed by Ball and Shivakumar (2007) when using the event year accruals as the proxy of earnings management, this paper estimates accruals from the different year to test the hypothesis. Hribar and Collins (2002) demonstrate accruals estimated from the last financial statements before IPO (year -1) offer a more valid test for the earnings management hypothesis. Table 3.1 shows that firms have to fulfill the most recent two years profitability requirement to be listed in the TSE and GTS markets.

This study then estimates the discretionary current accruals for sample firms by using their last two financial statements before going listed in the TSE or GTS market (year -1 and -2). The current accruals are from balance sheet changes and the "normal" current accruals are estimated by using the modified Jones model. I delete 68 TSE sample firms because of their pre-listed in TSE market years are the event years of their GTS market years. For example, firm 2357 was newly listed in the GTS market in 2000 and then newly listed in the TSE market in 2001. This paper excludes these samples in this test in order to diminish their potential impact on the year -1 DCAs.

Although Table 4.3 already shows the median discretionary current accruals for sample firms from year -2 to year 4, table 4.5 focus on the event year -1 and -2 DCAs and reports more detailed summary statistics. For firms in the TSE sample, their mean and median discretionary current accruals in event year -1 and -2 are all negative except median DCA in year -1. All of them are not statistically significant. For firms in the GTS sample, their mean and median discretionary current accruals in event year -1 and -2 are all insignificantly negative. And this table also reveals that the numbers in the year -2 are smaller than year -1, it may suggest that firms are likely to report more conservatively in year -2 than in year -1. The mean and median DCAs in the event year -1 and -2 are all smaller in the GTS sample, it may suggest that GTS sample firms are more conservative in year -1 and -2 than TSE sample firms.

There is no evidence showing that firms' discretionary current accruals are positive in the two years before being newly listed in the stock market, representing that firms do not engage in earnings management or inflate their earnings through accruals in order to be listed in the TSE and GTS markets. The empirical evidence found in this section is consistent with no earnings management for the newly listed firms.

Table 4.5: Discretionary Current Accruals in event year -1 and -2 for sample firms

$$\frac{CA_{it}}{TA_{it-1}} = \alpha_0\left(\frac{1}{TA_{it-1}}\right) + \alpha_1\left(\frac{\Delta Sales_{it}}{TA_{it-1}}\right) + \varepsilon_{it}\,.$$

Modified Jones model: $NDCA_{it} = \hat{\alpha}_0\left(\frac{1}{TA_{it-1}}\right) + \hat{\alpha}_1\left(\frac{\Delta Sales_{it} - \Delta TR_{it}}{TA_{it-1}}\right).$

$$DCA_{it} = \frac{CA_{it}}{TA_{it-1}} - NDCA_{it}\,.$$

The variables above are defined in the previous sections.

TSE sample

	Event year -1	Event year -2
Observations	431	405
Mean DCA	-0.0005	-0.0090
t-statistics	-0.0679	-0.6545
Median DCA	0.0003	-0.0046
% Positive DCA	50.12	48.15
Sign test (p-value)	0.7479	0.4882

GTS sample

	Event year -1	Event year -2
Observations	744	742
Mean DCA	-0.0094	-0.0109
t-statistics	-1.1915	-1.2161
Median DCA	-0.0027	-0.0056
% Positive DCA	49.06	47.30
Sign test (p-value)	0.8377	0.0973

4-6 Profitability index for newly listed firms around the event year

Table 3.1 shows that the newly listed firms have to qualify the profitability requirement to be listed in the TSE and GTS markets. The profitability index that the stock markets used to measure these criteria is income before tax divided by the share capital. For newly listed firms in the TSE market, they need to fulfill the most recent two (6%) or five (3%) fiscal years' profitability requirement. For newly listed firms in the GTS market, they need to fulfill the most recent two (3%) fiscal years' profitability requirement.

In order to examine whether firms engage in earnings management before newly listed by observing the fluctuations of these indexes, this paper calculates these indexes for the newly listed firms ten years before the event year to subsequent five years. Table 4.6 shows the mean and median profitability index from event year -10 to event year 5, and this paper also depicts the trend of them in figure 4.6.

Figure 4.6 reveals that the trends of mean and median profitability indexes are rising continuously from ten years before the event and at the peak in the event year -1, then dropping continuously in five subsequent years. Most importantly, the profitability indexes in table 4.6 are all above the minimum requirements set by TSE and GTS markets (6% for TSE and 3% for GTS). This implies that firms do not have to manipulate their earnings in order to pass the minimum requirement of the profitability index. And the indexes for TSE sample firms are larger than GTS sample firms in both mean and median, this may imply that firms apply to be listed in the TSE market perform better than those in the GTS market around the event year. The trends of the indexes imply that firms are at their best business conditions when applying for newly listing in the TSE and GTS markets. And the subsequent downward trend of the index may imply that the subsequent underperformance for newly listed firms, which is consistent with Huang (1995) and Tai (1999).

Table 4.6: Profitability index for newly listed firms around the event year

TSE sample

Event year	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5
MEAN (IBT/SC)	0.20	0.18	0.21	0.25	0.28	0.26	0.32	0.33	0.35	0.37	0.32	0.22	0.18	0.15	0.14	0.10
MEDIAN (IBT/SC)	0.12	0.11	0.11	0.13	0.16	0.18	0.22	0.24	0.26	0.29	0.26	0.18	0.15	0.12	0.12	0.11
N	140	220	316	396	453	472	490	497	498	499	499	488	477	441	397	324

GTS sample

Event year	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5
MEAN (IBT/SC)	0.10	0.10	0.16	0.10	0.15	0.18	0.24	0.27	0.31	0.32	0.28	0.20	0.15	0.12	0.09	0.11
MEDIAN (IBT/SC)	0.06	0.06	0.08	0.07	0.09	0.11	0.14	0.19	0.23	0.25	0.24	0.17	0.13	0.10	0.10	0.10
N	141	210	337	551	653	694	730	742	744	744	744	709	656	562	481	371

- IBT/SC= Income before tax divided by share capital (the formula for profitability criteria in table 3.1).

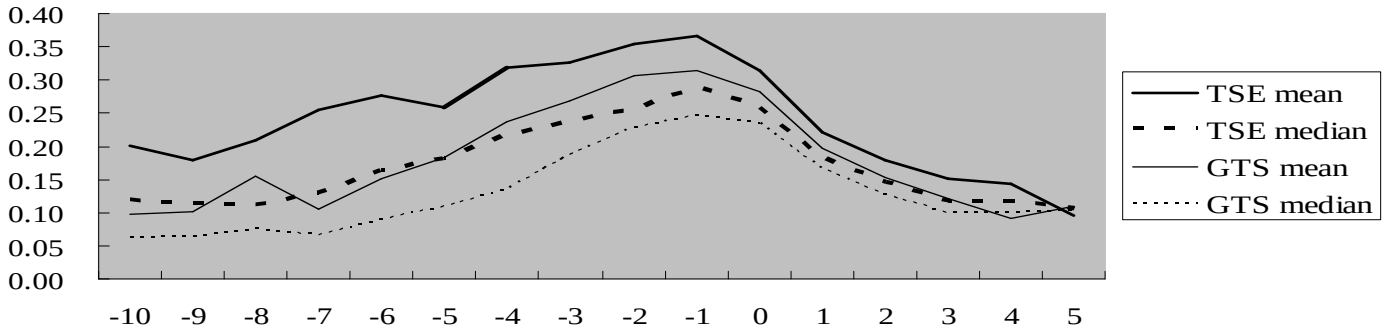

Figure 4.6: Profitability index trend for newly listed firms

4-7 Conditional Conservatism in event year -1 and -2

Furthermore, this study tests whether firms report conditionally conservatively in their last two financial statements before being listed in the TSE and GTS markets, using a regression adapted from Ball and Shivakumar (2005, 2006, 2007):

$$\begin{aligned} CA_{it} = \; & \alpha_0 + \alpha_{10} DTSE_{it} + \alpha_{20} DGTS_{it} \\ & + \alpha_1 \Delta Sales_{it} + \alpha_{11} DTSE_{it} * \Delta Sales_{it} + \alpha_{21} DGTS_{it} * \Delta Sales_{it} \\ & + \alpha_2 CFO_{it} + \alpha_{12} DTSE_{it} * CFO_{it} + \alpha_{22} DGTS_{it} * CFO_{it} \\ & + \alpha_3 DCFO_{it} + \alpha_{13} DTSE_{it} * DCFO_{it} + \alpha_{23} DGTS_{it} * DCFO_{it} \\ & + \alpha_4 DCFO_{it} * CFO_{it} + \alpha_{14} DTSE_{it} * DCFO_{it} * CFO_{it} + \alpha_{24} DGTS_{it} * DCFO_{it} * CFO_{it} + \kappa_{it}, \end{aligned} \tag{15}$$

where $DTSE_{it}$ takes the value 1 in event year -1 or -2 for TSE sample firms and $DGTS_{it}$ takes the value 1 in the event year -1 or -2 for GTS sample firms. All other variables are as defined earlier. The regression is estimated from a pooled sample, including all event year -1 or -2 data for newly listed firms and all listed firms during the sample period (1992~2006) with available data in TEJ database. Current accruals are estimated from balance sheet changes. An advantage of this regression is that the parameters for calculating "normal" accruals of newly listed firms are not estimated out of sample, because the regression allows the coefficients to vary between listed firms, TSE sample firms, and GTS sample firms.

This model provides for both roles of accruals, mitigating of noise in cash flow (Dechow et al. [1998]) and asymmetric recognition of unrealized gains and losses (Ball and Shivakumar [2005]). This paper predicts a negative coefficient for cash flow α_2 as in Dechow et al. (1998) to show the first role of accruals (mitigating noises in cash flows) and a positive incremental coefficient α_4 for negative cash flows because accrued losses are more likely in periods of negative cash flows (conditional conservatism). The greater (less) conditional conservatism in the event year -1 or -2 relative to those of listed firms implies positive (negative) coefficients α_{14} and α_{24}. This would indicate greater (less) incremental sensitivity of current accruals to negative cash flows for the newly listed firms than the α_4 coefficient for already

listed firms. The coefficients α_{10} and α_{20} are used to capture any incremental accruals of the newly listed firms that are not explained by other variables in the model. The coefficients α_{10} through α_{14} are used to let the coefficients vary between the newly listed firms in the TSE market and listed firms while α_{20} through α_{24} are for the newly listed firms in the GTS market.

The results are in table 4.7. The adjusted R-squared are both over 60%, meaning the explanatory power of the regression is high. The significantly negative α_4 (-0.8 and -0.801) coefficient is not consistent with Ball and Shivakumar (2007) study, reflecting that there are no conditional conservatism for listed firms in my sample. More importantly, the significantly positive α_{14} (0.275 and 0.3) and α_{24} (0.253 and 0.524) imply that the greater conditional conservatism for newly listed firms in the event year -1 and -2 relative to those of already listed firms.

Instead of using the pooled data, this paper also runs the regression by TSE sample and GTS sample separately. For TSE sample, the regression only includes firms listed in TSE market. For GTS sample, the regression only includes firms listed in GTS market. The results are not reported and are similar to the evidence found in Table 4.7. This paper also runs the regression by each industry and each year, the unreported results are similar to Table 4.7.

After examining the evidence in section 5, 6, and 7 of this chapter, the empirical results in this paper are consistent with the hypothesis that firms do not engage in earnings management before newly listed in the TSE and GTS markets. Section 7 shows that the newly listed firms report even more conditionally conservatively in year -1 and -2 than other listed firms. Finally, this paper illustrates the potential out-of-sample estimation biases by using this paper's sample in the following section.

Table 4.7: Conditional conservatism in event year -1 and -2

$$
\begin{aligned}
CA_{it} = \; & \alpha_0 + \alpha_{10} DTSE_{it} + \alpha_{20} DGTS_{it} \\
& + \alpha_1 \Delta Sales_{it} + \alpha_{11} DTSE_{it} * \Delta Sales_{it} + \alpha_{21} DGTS_{it} * \Delta Sales_{it} \\
& + \alpha_2 CFO_{it} + \alpha_{12} DTSE_{it} * CFO_{it} + \alpha_{22} DGTS_{it} * CFO_{it} \\
& + \alpha_3 DCFO_{it} + \alpha_{13} DTSE_{it} * DCFO_{it} + \alpha_{23} DGTS_{it} * DCFO_{it} \\
& + \alpha_4 DCFO_{it} * CFO_{it} + \alpha_{14} DTSE_{it} * DCFO_{it} * CFO_{it} + \alpha_{24} DGTS_{it} * DCFO_{it} * CFO_{it} + \kappa_{it},
\end{aligned}
$$

where:

CA_{it} : Current accruals in year t for firm i (scaled by beginning total assets),

$\Delta Sales_{it}$: Sales in year t less sales in year t-1 for firm i (scaled by beginning total assets),

CFO_{it} : Cash flow from operations in year t for firm i (scaled by beginning total assets),

$DCFO_{it}$: Dummy variable, takes 1 if CFO < 0 and 0 otherwise,

$DTSE_{it}$: Dummy variable, takes 1 in event year -1 or -2 for firms newly listed in TSE,

$DGTS_{it}$: Dummy variable, takes 1 in event year -1 or -2 for firms newly listed in GTS.

Variable	Predicted	Event year -1			Event year -2		
	Sign	Coef.	t-stat	P>t	Coef.	t-stat	P>t
Intercept (α_0)	?	0.009	4.66	0.00	0.013	6.48	0.00
DTSE (α_{10})	?	0.044	5.12	0.00	0.091	12.19	0.00
DGTS (α_{20})	?	0.024	3.73	0.00	0.033	4.60	0.00
ΔSales (α_1)	+	0.118	36.45	0.00	0.095	32.05	0.00
DTSE*ΔSales (α_{11})	?	-0.079	-10.67	0.00	-0.045	-6.06	0.00
DGTS*ΔSales (α_{21})	?	-0.012	-1.74	0.08	-0.009	-1.76	0.08
CFO (α_2)	-	-0.233	-15.55	0.00	-0.200	-12.94	0.00
DTSE*CFO (α_{12})	?	0.042	0.91	0.36	-0.310	-8.53	0.00
DGTS*CFO (α_{22})	?	0.013	0.36	0.72	-0.060	-1.55	0.12
DCFO (α_3)	?	-0.021	-7.09	0.00	-0.004	-1.29	0.20
DTSE*DCFO (α_{13})	?	0.069	4.77	0.00	-0.043	-2.81	0.01
DGTS*DCFO (α_{23})	?	0.056	4.82	0.00	0.089	7.87	0.00
DCFO*CFO (α_4)	+	-0.800	-42.04	0.00	-0.801	-38.51	0.00
DTSE*DCFO*CFO (α_{14})	+	0.275	3.41	0.00	0.300	4.80	0.00
DGTS*DCFO*CFO (α_{24})	+	0.253	3.78	0.00	0.524	11.11	0.00
Adj. R^2 (%)		63.76			62.6		
No. of observations		8954			8736		
No. of TSEs		439			405		
No. of GTSs		744			742		

4-8 Out-of-sample test

Ball and Shivakumar (2007) mention that there are potential biases in discretionary current accruals for sample firms when using the out-of-sample observations to estimate them, so this section tests if these potential biases exist in my sample. This study uses the cross-sectional modified Jones model to estimate discretionary current accruals. That is using the same industry-year's observations except for newly listed firms to estimate the parameters of the model, and then applying these parameters to calculate the sample firms' discretionary current accruals. This kind of out-of-sample estimation assumes the nondiscretionary portions of current accruals are determined in the same way among listed firms and newly listed firms. But the sensitivity of current accruals to changes in sales is likely to depend on the stage of a firm in its life cycle. It is obvious that the newly listed firms are not in the same stages with the already listed firms. Firms may be resource-constrained and invest less in their working capital such as accounts receivable and inventories before being listed in the stock market. After being listed in the stock market, they may get the capital from the investors and invest part of it into the working capital.

To test this out-of-sample estimation problem, this paper re-estimates the modified Jones model by using all the listed firms' data between the sample period (1992~2006), and allowing the coefficients of intercept and change in sales to vary between observations of listed years, observations of newly listed years in TSE market and observations of newly listed years in GTS market. In order to focus on the accruals' effect in the event year, the sample firms are only included in the event year. The regression is:

$$\begin{aligned} CA_{it} &= \alpha_0 + \alpha_{10} DTSE_{it} + \alpha_{20} DGTS_{it} \\ &\quad + \alpha_1 \Delta Sales_{it} + \alpha_{11} DTSE_{it} * \Delta Sales_{it} + \alpha_{21} DGTS_{it} * \Delta Sales_{it} + \varepsilon_{it}. \end{aligned} \tag{16}$$

The current accruals are estimated from balance sheet changes and the definitions of variables are included in the table 4.8. This regression is estimated by using pooled data and industry-specific data as well. In order to have enough

observations for dummy variables, this paper here merges some industries into a new industry category (Huang [1995]). After this procedure, there are at least 5 TSE and 5 GTS sample firms in each industry, refer to the sample selection and data section.

This paper assumes that the newly listed firms are in the high growth stage of their life cycles compared to those firms already listed in the stock market, and assumes that the proceeds from the listing process relax their capital constraints. Hence the newly listed year is likely to exhibit large increases in working capital unconditionally and conditionally on sales. This implies that the incremental coefficients α_{10}, α_{20}, α_{11}, and α_{21} are all positive.

The results are shown in table 4.8. From the perspective of pooled data, the incremental intercept α_{10} and α_{20} are all significantly positive, varying between 0.038 and 0.044. This means newly listed firms on average report higher current accruals of 3.8% to 4.4% of total assets in the event year, independent of sales growth. The interpretation about this finding could be firms engage in earnings management in the event year or they invest in working capital more in the event year. For listed firms, the current accruals increase at the speed of about 17.4% of changes in sales. For sample firms during the event year, the current accruals increase at the speed of about 11% to 13%[8] of changes in sales, significantly lower than the sensitivity of listed firms, this is not consistent with the expectation. However, from the perspective of industry-specific regressions, the DTSE*ΔSales and DGTS*ΔSales are significant only in the number 2 and 3 industry, and the incremental intercept DTSE and DGTS are significant only in the number 3 industry. The coefficients of DTSE, DGTS, DTSE*ΔSales, DGTS*ΔSales are all statistically significant at 5% level by using the pooled data. As a result, this section shows that the potential out-of-sample estimation biases found by Ball and Shivakumar (2007) also exist in my sample, but this study still uses the cross-section modified Jones model to estimate the discretionary current accruals. However, this section suggests that researchers should pay attention to these potential biases in the discretionary current accruals in the event year when using them to test the earnings management hypothesis around large transactions and events.

[8] 0.174-0.069=0.105 0.174-0.047=0.127

Table 4.8: Out-of-sample estimation biases in the event year

$$CA_{it} = \alpha_0 + \alpha_{10} DTSE_{it} + \alpha_{20} DGTS_{it} + \alpha_1 \Delta Sales_{it} + \alpha_{11} DTSE_{it} * \Delta Sales_{it} + \alpha_{21} DGTS_{it} * \Delta Sales_{it} + \varepsilon_{it},$$

where:

CA_{it} : Current accruals in year t for firm i (scaled by beginning total assets),

$\Delta Sales_{it}$: Sales in year t less sales in year t-1 for firm i (scaled by beginning total assets),

$DTSE_{it}$: Dummy variable for firms newly listed in TSE market at year 0,

$DGTS_{it}$: Dummy variable for firms newly listed in GTS market at year 0.

Variables	Predicted Sign	Pooled	Industry-specific					
			Ind. 1	Ind. 2	Ind. 3	Ind. 4	Ind. 5	Ind. 6
Intercept (α_0)	?	0.007	0.009	0.005	0.005	0.005	0.027	-0.002
		(0.00)	(0.13)	(0.48)	(0.01)	(0.10)	(0.00)	(0.58)
DTSE (α_{10})	+	0.038	-0.005	0.032	0.030	0.021	0.088	0.042
		(0.00)	(0.90)	(0.42)	(0.00)	(0.21)	(0.01)	(0.12)
DGTS (α_{20})	+	0.044	0.063	0.039	0.048	0.016	0.064	0.012
		(0.00)	(0.21)	(0.39)	(0.00)	(0.26)	(0.05)	(0.52)
ΔSales (α_1)	+	0.174	0.231	0.725	0.154	0.200	0.148	0.123
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
DTSE*ΔSales (α_{11})	+	-0.069	-0.199	-0.704	-0.043	0.008	0.075	-0.168
		(0.00)	(0.13)	(0.00)	(0.00)	(0.94)	(0.65)	(0.09)
DGTS*ΔSales (α_{21})	+	-0.047	0.652	-0.615	-0.044	-0.036	0.250	0.139
		(0.00)	(0.23)	(0.01)	(0.00)	(0.63)	(0.51)	(0.61)
No. of observations		9174	421	780	5017	1057	1279	620
Adj. R^2 (%)		15.87	16.68	39.56	24.83	11.00	7.13	24.27

- Pooled data include all industries.
- Ind 1 represents “Foods” industry.
- Ind 2 represents “Textiles” industry.
- Ind 3 represents “Electrical” industry.
- Ind 4 represents “Plastics and Chemicals” industry.
- Ind 5 represents “Building Material and Construction” industry.
- Ind 6 represents “Services and Sales” industry.
- The number in the parentheses is p-values for each variable.

Chapter 5. Conclusions and Suggestions

5-1 Research Conclusions

There are a broad range of studies on earnings management around large transactions and events. Due to the incentives and opportunities the firms have during this period, a typical hypothesis is that firms engage in earnings management prior to large transactions and events.

This study discusses the unusually high incentives and opportunities for firms to inflate their earnings before being listed in the TSE and GTS markets in Taiwan in the introduction chapter. However, although the incentives and opportunities for newly listed firms to manipulate their earnings at IPO process seem reasonable, there are still many disadvantages for firms to manage their earnings. Newly listed firms are usually the hot news in Taiwan and certainly attract many stakeholders and the public's attention, such as auditors, analysts, underwriters, and the press. If these firms engage in earnings management, the chance to be caught is high due to the monitors of the regulatory bureau. There is also a risk of subsequent detection, and the litigation problem and the damage to their reputations would be severe. Furthermore, earnings management can only borrow earnings from later periods and the poor reporting quality could also increase the cost of capital, which is worrisome for newly listed firms that need external financing.

Both of the earnings management hypothesis and no earnings management hypothesis have its reasons and are supported by literatures. This study uses the following methodology to examine whether newly listed firms in the TSE and GTS markets engage in earnings management.

First, this study estimates the discretionary current accruals for sample firms in the event year-end and examines the patterns of DCAs and two accounting performance measures (industry adjusted net income and industry adjusted operating cash flow), the discretionary current accruals and net income are both significantly positive in year 0 and decline year by year in the subsequent four years. Teoh et al.

(1998b) translate these patterns into earnings management evidence. Ball and Shivakumar (2007) question the hypothesis and evidence found in Teoh et al. study in many reasons. So this study illustrates these questions and re-examines the discretionary current accruals.

Second, this study examines the changes in individual working capital components in the event year-end and observes that firms categorized in the "aggressive" group generally exhibit large increases in their working capital assets while firms in "conservative" group exhibit large increases in working capital liabilities. Such magnitudes of changes in working capital are not like earnings management mentioned by Ball and Shivakumar (2007). It is more likely that the firms invest the IPO proceeds to boost the working capital level. The accounting numbers in year 0 include both pre- and post-listed periods, so if the paper uses the discretionary current accruals in year 0 as a proxy for earnings management, any change in working capital level translates directly into earnings management.

Third, the main purpose of this study is to test whether the firms engage in earnings management before being newly listed in the TSE and GTS markets. Due to the probable biases among discretionary current accruals when they are estimated by using the event year (year 0) data, and Hribar and Collins (2002) demonstrate accruals estimated from the last financial statements before IPO offer a more valid test for the earnings management hypothesis, this paper uses the discretionary current accruals estimated by modified Jones model in event year -1 and -2 to examine the hypothesis. There is no evidence that firms inflate their earnings in year -1 and -2 in table 4.6. Moreover, this study also uses a regression adapted from Ball and Shivakumar (2005, 2006, 2007) to test the conditional conservatism for newly listed firms. The coefficients α_{14} and α_{24} in table 4.7 are all significantly positive, implying that the newly listed firms are more conditionally conservative prior to the event than those firms already listed in the market.

Finally, cross-sectional Jones model uses the same industry-year observations to estimate the nondiscretionary portion of current accruals and then calculates the discretionary current accruals for sample firms. This out-of-sample estimation procedure implies a hypothesis that the nondiscretionary current accruals for listed

firms and newly listed firms are determined in the same way. This paper then uses the regression developed in Ball and Shivakumar (2007) study to examine this potential biases. The advantage of this regression is allowing the coefficients of intercept and change in sales to vary between listed firms and newly listed firms. The results in Table 4.8 show that the incremental intercepts are significantly positive, meaning the newly listed firms have higher current accruals than other listed firms in the event year-end, unconditional on change in sales. The coefficients of DTSE, DGTS, DTSE*ΔSales, DGTS*ΔSales are all statistically significant at 5% level suggest that out-of-sample estimates of Jones model coefficients are biased in relation to the newly listed years.

In Summary, although the earnings management hypothesis and no earnings management hypothesis for the newly listed firms are both supported by literatures, the empirical results in this paper support the hypothesis that the newly listed firms do not engage in earnings management, especially inflating their earnings, prior to their listing in the TSE and GTS markets. And they even report more conditionally conservatively in event year -1 and -2 based on the conditional conservatism test. The potential biases in the event year's discretionary current accruals estimated by using the cross-sectional modified Jones model suggest future researches to notice.

5-2 Research Constraints

1. The industry categories are based on the Taiwan Economic Journal (TEJ) database. But due to the diversification of firms, the firms classified in the same industry may have tremendous differences in product combinations, profitability structures etc. This may cause the nondiscretionary current accruals to be biased when using the cross-sectional method to estimate them.

2. In order to have at least 10 observations in each industry-year, this study deletes “Glass and Ceramics”, “Paper and Pulp”, “Automobile”, and “Oil and Gas and Electricity” industries from the sample. This procedure causes the scope of the sample to be constrained.

3. From Table 4.2, the cross sectional modified Jones model has low explanatory powers in some industry-years, but this paper still uses this model to estimate the nondiscretionary current accruals, which may be biased.

4. This study uses mainly cross-sectional modified Jones model to estimate the discretionary current accruals and then draws the conclusion. If other models are used to estimate them, the results may be different.

5. This study analyzes the newly listed firms in both TSE and GTS markets during 1992 and 2006. So it does not mean the newly listed firms in other years have the same patterns and evidence.

5-3 Research Suggestions

1. The sample period in this study is from 1992 to 2006. There are several amendments to the criteria for firms to be listed in the TSE and GTS markets, so the future researchers may separate the sample period between the amendments and examine if these amendments affect the earnings management for newly listed firms.

2. The incentives for firms to engage in earnings management before listing may include the rising of their stock price, expanding the wealth of stockholders, and to pass the strict examinations by TSE and GTS institutions, etc. Therefore, future researchers may discuss each of these incentives and examine each of their influences on the firm's earnings management behavior.

3. The discretionary current accruals are estimated by using the modified Jones model in this study but there are still other models in this field. Future studies may use the non-linear models mentioned in Ball and Shivakumar (2006) study to estimate discretionary current accruals, the results may be different.

4. The current accruals in this paper are estimated from successive balance sheet changes. The future researchers may break the database constraint and estimate them from cash flow statements.

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