

**DO FIRMS MANAGE EARNINGS DURING SEASONED EQUITY OFFERINGS: THE
CASE OF AUSTRALIA**

By

Xingzheng Xiao

THESIS

Submitted to

KDI School of Public Policy and Management
In partial fulfilment of the requirements
for the degree of

MASTER OF PUBLIC POLICY

2011

**DO FIRMS MANAGE EARNINGS DURING SEASONED EQUITY OFFERINGS: THE
CASE OF AUSTRALIA**

**By
Xingzheng Xiao**

THESIS

Submitted to

KDI School of Public Policy and Management
In partial fulfilment of the requirements
for the degree of

MASTER OF PUBLIC POLICY

2011

Professor Wook Sohn

**DO FIRMS MANAGE EARNINGS DURING SEASONED EQUITY OFFERINGS: THE
CASE OF AUSTRALIA**

By

Xingzheng Xiao


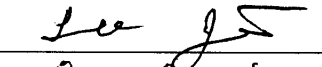
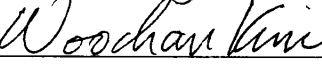
THESIS

Submitted to

KDI School of Public Policy and Management
In partial fulfilment of the requirements
for the degree of

MASTER OF PUBLIC POLICY

Committee in charge:

Professor Wook Sohn, Supervisor	 _____
Professor Jinsoo Lee	 _____
Professor Woochan Kim	 _____

Approval as of October, 2011

ABSTRACT

DO FIRMS MANAGE EARNINGS DURING SEASONED EQUITY OFFERINGS: THE CASE OF AUSTRALIA

By

Xingzheng Xiao

I examine earnings management around seasoned equity offerings in Australian Listed firms from 2002 to 2008. Seasoned equity issuers can raise reported earnings by altering discretionary accounting accruals. Consistent with prior studies (for example , Rangan, 1998 ; Lakshmanan, 2000; Yoon and Miller, 2002; Jo, Kim and Park, 2007; Guthrie and Sokolowsky, 2010; among many others), I find that firms in Australia do manage their earnings in the year prior to seasoned equity offerings and the year of seasoned equity offerings, however, depending on different industries, some firms manage their earnings in the year prior to seasoned equity offering, for example, firms from industrials, consumer staples, health care and IT industry while other firms manage their earnings in the year of seasoned equity offering, for example, firms from the materials, industrials, consumer discretionary and consumer staples industry.

ACKNOWLEDGEMENTS

First of all, I would like to sincerely thank my Professor Wook Sohn for his excellent guidance and enormous support during the period that I wrote this thesis. Without his support, it is not possible for me to finish this thesis. Secondly, I would like to thank all of my professors including Prof. Taejong Kim, Prof. Woochan Kim, Prof. Byungho Oh, and Prof. Jaeun Shin, not only for their excellent lectures but also their strong support after I left the School. Thirdly, I would like to thank all of the staff in the student offices, as they were always so helpful and nice to me.

I really enjoyed the time I spent in the KDI School, one of the best Graduate School in the world. The knowledge I learned from the KDI School will become the treasure in my career, the experiences I had from The KDI School is one of the most beautiful memory in my life.

Table of Contents

I.	INTRODUCTION	1
II.	LITERATURE REVIEW	4
III.	HYPOTHESES DEVELOPMENT	7
IV.	DATA AND METHODOLOGY	9
	4.1 Estimating discretionary accruals	9
	4.2 Sampling	1 1
	4.3 Summary Statistic of Discretionary accruals	1 2
	4.4 Test the assumptions underpinning the residuals of OLS regression.....	1 3
	4.5 Tests for normality after excluding outliers	1 5
V.	EMPIRICAL RESULTS.....	1 8
	5.1 Multivariate regression analysis	1 8
	5.2 Sensitivity tests	2 3
	5.2.1 Sensitivity tests based on firm size	2 3
	5.2.2 Sensitivity tests for profit firms	2 7
VI.	CONCLUSION.....	3 1

I. INTRODUCTION

Existing studies have examined earnings management around firm-specific events: for example, Teoh et al (1998) find that issuers have unusually high income-increasing accounting adjustments pre-issue; Lakshmanan (2000) provides evidence which consistent with earnings management, that is, net income and accruals are abnormally high around seasoned equity offerings. The aim of this study is to investigate whether there is evidence of Australian firms managing their earnings one year before and during the year of seasoned equity offerings.

Failures of Australian corporations such as Harris Scarfe, HIH Insurance, OneTel and Ansett Airlines caused financial as well as social disaster to Australians. In each case, accounting numbers were implicated as playing a supportive role in facilitating such failures. It is against that background that makes this study particularly significant as it can highlight whether managers manage firms' earnings to attain a specific goal. It is reasonable to anticipate that firms will manage earnings upwards in order to make the market for shares value their shares higher than what it actually is. Prior research confirms this logic (Rangan 1998; Teoh et al. 1998a, 1998b; Teoh et al. 1998c). This study also anticipates this finding to be true in an Australian setting in the one year leading to and the current year of new equity offerings. The result from this study has policy implications for accounting regulators and investors.

Prior research has studied earnings management using discretionary accruals as its proxy (Defond and Jiambalvo 1994; Jones 1991; Kothari et al. 2005; Rees et al. 1996; Teoh et al. 1998a; Defond and Park 1997; Subramanyan 1996)). This study will do likewise and examine earnings management relating to firm specific events, namely seasoned equity offering in

Australia. My results were documented by industry group. Using a final sample of 4817 firm-year observations attained from Aspect Data from 2002 to 2008, I find that there is sufficient evidence to suggest that firms in the materials, industry, consumer discretionary and consumer staples industry in the current year of new share offerings manage their earnings. There is not enough evidence to conclude the same for firms in the energy, health care, IT and telecom industry. In the one year before new share offerings, there is enough evidence to suggest that firms from industry, consumer staples, health care and IT industry manage their earnings whereas the same cannot be said of firms from the energy, materials, consumer discretionary and telecom industry. For the aggregate effect of earnings management prior and in the year of new equity issuing, firms in materials, industrials, consumer staples and IT manage earnings upward , which is not only statistically but also economically significant.

In order to have a better understanding of the relationship between share issuing and earnings management, I further conduct two sensitivity tests: (1) partition the sample into large and small firms at the median firm size level; (2) excluding loss firms. I find that earnings management a year prior to share issuing is positively and significantly associated with new public share offering of firms from the health care and IT industry for larger firms. The same is observed for firms in the industrials, consumer staples and IT industry for smaller firms. In the year of new public share offerings I find that earnings management is significant in large firms from materials, industrials and IT industry. The same conclusion is found in smaller firms in the consumer discretionary industry. I also find earnings management for profit firms in the year prior to the equity offering for firms from energy, materials, industrials, and IT, and in the year of the equity offering for firms from consumers, health care, and telecommunications. In addition,

the aggregate earnings management prior and in the year of seasoned equity issue shows that large firms are less likely to manage their earnings than smaller firms. Choi and Sohn (2010) find that banks with higher disclosure levels tend to do less discretionary accounting practices in loan loss provisions, so the reason that large firms are less likely to manage their earnings might be because they have higher disclosure levels. The aggregate results also show that profit firms manage earnings more upward than the whole population of all firms, which might be because profit firms have more sales, so that they can use the discretionary accruals to manage their earnings.

II. LITERATURE REVIEW

Prior studies have documented that management tend to overstate their earnings in the year of issuing new equity. Teoh et al (1998) and Rangan (1998) are early researchers who examine whether firms manipulate earnings during public equity offerings and whether the accounting and stock market consequences are associated with earnings management. Teoh et al (1998) document a sample of 1265 firms conducting equity offerings from 1976 to 1989 and find that equity issuers manipulate earnings upwards around equity offerings through adjusting discretionary accruals. Additionally, they find that those issuers who participate in earnings management prior to the offerings have lower long-term abnormal stock returns and net income post to the issuance.

Rangan (1998) reports similar results with Teoh et al (1998). Positive abnormal accruals for equity issuing firms are significant higher during the year around the public equity offerings, and these accruals result in a decline in operating performance and stock returns in the post issuing period. He explains that the stock market fails to detect the earnings management and temporally overvalues equity issuing firms. But both Teoh et al (1998) and Rangan (1998) report that such accrual manipulation will lead to earnings reversals and market disappointment in the following period after equity issuing.

Consistent with Teoh et al (1998) and Rangan (1998), Lakshmanan (2000) also finds significant positive abnormal accruals around public equity offerings. However, the major counter argument is that he perceives that earnings management behaviour is a reflection of equity issuers'

response to market anticipation at offering announcement rather than intentionally to mislead investors. He argues that stock market does not react to earnings management inefficiently and Teoh et al's and Rangan's findings of abnormal market returns are misspecified.

Yoon and Miller (2002) also find evidence consistent with the argument that issuers widely employ income-increasing strategies during the time of equity offerings in the Korean context. The results are particularly robust for issuing firms where financial performances are relatively poor. Similar with Teoh et al (1998) and Rangan (1998), they also find that equity issuers continuously manipulate earnings upwards in the year of equity offerings. The association tests between abnormal return and earnings management also indicate that the market misinterprets the implications of discretionary accruals. Using 3,099 U.S. SEOs offers between 1989 and 2000, Kim and Park (2005) provide evidence that equity issuers boost their earnings before an offerings and push the offer prices up to increase offering proceeds.

Jo, Kim and Park (2007) use a sample of seasoned equity offerings to study the association between the choice of financial intermediary and earnings management and find an inverse association between underwriter quality and issuers' earnings management, that is, highly prestigious underwriters restrict firms' incentives for earnings management to protect their reputation while firms with greater incentives for earnings management avoid strict monitoring by choosing low-quality underwriters. Using the modified Jones model to measure discretionary current accruals, Lim, Thong and Ding (2008) examines whether firm diversification affect earnings management in seasoned equity offerings. They find a positive relation between firms' diversification and the degree of earnings management.

Guthrie and Sokolowsky (2010) examine whether the degree of shareholder concentration affect firms' earnings management in seasoned equity offerings and find that firms inflate earnings around seasoned equity offerings in the presence of large outsider block holdings, but not in their absence. Cohen and Zarowin (2010) extend previous empirical studies and reveal that equity issuing firms utilise not only accrual-based earnings but also real earnings management activities to increase income around equity offerings. Their analysis shows that post-SEO operating underperformance is driven by accrual reversals as well as real operational decisions to manipulate earnings. Moreover, the real activities management is more severe than accrual-based manipulation to explain the post-SEO performance.

Previous studies agree that equity issuers use income-increasing techniques around the public equity offerings. Most of studies point that discretionary accruals peak in the year prior to equity offerings and even in the year of offerings. Although a few of studies examine the earnings management techniques beyond accrual-based management (e.g. Cohen and Zarowin, 2010), discretionary accruals are still one of most commonly employed proxies in prior earnings management literature. Compared with other accounting techniques to manipulate earnings such as changing accounting methods, the cost of accrual manipulation is less costly via shifting earnings between periods (Healy, 1985). This study also employs discretionary accruals as earnings management proxies.

III.HYPOTHESES DEVELOPMENT

Firms with new equity issuing engage in earnings management either to inflate stock price because of opportunism (Teoh et al, 1998 and Rangan, 1998) or rationally respond to meet investors' earnings expectations (Lakshmanan, 2000). Teoh et al (1998) and Rangan (1998), in the perspective of opportunism, argue that firms can raise capital at more favourable terms than if earnings were not managed so that issuers can enjoy a significant share price increase and receive more cash infusion through equity offerings. The incentive to inflate share price is particularly strong for managers with their compensation based on stock price. Lakshmanan (2000) questions the argument of managerial opportunism and provide alternative explanations that earnings management before equity offerings is due to managerial rational response to meet market expectations. He argues that equity issuers cannot effectively signal their financial report in absence of earnings manipulation, and investors perceive that all firms with public offerings have overstated prior earnings, and thereby revise downwards their expectations of stock prices. Additional evidence in support of Lakshmanan's managerial rational response hypothesis finds significantly higher abnormal returns for firms exceeding market expectations (Bartov, Givoly, and Hayn, 2002) and negative share returns for firms failing to satisfy market expectations (Skinner and Sloan, 2002). Skinner et al (2002) further report that the penalty for firms failing to meet expectations is particularly stronger than the reward for firms that exceed them. Furthermore, existing shareholders might also support managerial income-increasing actions through capital raising activities because an associated share price increase can maximise their personal wealth. Consequently, managers have strong incentives to meet earnings expectations and inflate stock price through public equity offerings, in anticipation of new equity offerings.

Prior literature has demonstrated that discretionary accruals are widely and less costly used techniques to achieve income-increasing manipulation (Teoh et al, 1998 and Rangan, 1998; Lakshmanan, 2000). As a result, I hypothesize, in the alternative form,

H1: Discretionary accruals tend to increase in the year before the equity issuance.

However, current earnings management will suffer future earnings reversals, which will decrease market expectations and lead to negative abnormal returns in the future period. Empirical studies addressing issue also find that managers continuously manipulate earnings even in the year of new equity offerings to avoid an immediate earnings decline (Rangan, 1998; Teoh et al, 1998; Lakshmanan, 2000). That is because an immediate earnings reversal after the new equity offering will lead to market disappointment, and the associated price decline might damage the managers' reputation and potentially precipitate legal actions against the firm and its managers. Therefore, I hypothesize, in the alternative form,

H2: Discretionary accruals tend to increase in the year of the equity issuance.

IV. DATA AND METHODOLOGY

4.1 Estimating discretionary accruals

Accruals have the desirable trait of providing a summary of a firm's accounting choice, which are divided into a discretionary and non-discretionary component. Following previous studies, the discretionary component is used as the proxies of managerial discretion in reported earnings (Rangan, 1998; Teoh et al, 1998; Lakshmanan, 2000). As discretionary accruals cannot be observed directly from the financial statements, they have to be estimated using some model. Early work on earnings management assumes that the non-discretionary component of accruals is constant which is relaxed in Jones (1991). She estimates that non-discretionary accruals with an OLS regression with changes in sales, and the level of property, plant and equipment as explanatory variables. Her model attempts to control for the effect of changing economic conditions by employing total assets as a deflator. The discretionary accruals are measured as the difference between actual total accruals and predicted non discretionary accruals which are reflected in the fixed values of the following model. The Jones model for discretionary accruals () in the event year t is,

$$TA_t/A_{t-1} = \alpha_1(1/A_{t-1}) + \alpha_2(\Delta REV_t/A_{t-1}) + \alpha_3(PPE_t/A_{t-1}) + \varepsilon_t$$

Where

TA_t = total accruals in year t

ΔREV_t = revenues in year t less revenues in year t-1;

PPE_t = gross property plant and equipment in year t;

A_{t-1} = total assets at t-1

$\alpha_1, \alpha_2, \alpha_3$ = Firm-specific parameters.

Jones model assumes implicitly that discretion cannot be exercised over revenues and thereby extracts discretionary component of accruals, resulting in the estimation of earnings management to be biased toward zero (Dechow, Sloan and Sweeney, 1995). Dechow et al (1995) modify original Jones model that the change in revenues is adjusted for the change in receivables in the estimation period. The modification is designed to eliminate the error of Jones model when discretion is exercised over revenues. As it is easier to manage earnings by adjusting credit sales than cash sales, this modified Jones model assumes that all changes in credit sales in the estimation period is due to earnings management.

Following Dechow et al's (1995) arguments that firms having experienced unusual performance are expected to have systematically non-zero accruals and firms' performance is correlated with accruals, Kothari et al (2005) examine two ways to control performance in estimating discretionary accruals: (1) including a performance variable such as returns on assets (ROA); (2) calculating performance-matched discretionary accruals. Under this method, for firms from the same two-digit SIC code, they match the treatment firm with the control firm which has the closest ROA in the current year or the prior year and then subtracting the control firm's discretionary accruals from the treatment firm's discretionary accruals. Kothari et al (2005) find that discretionary accruals model which control performance is superior to previous Jones and modified Jones model.

This study uses the modified Jones (1991) model developed in Dechow et al (1995) and refined in Kothari et al (2005) to detect discretionary accruals. The model estimations include a constant

term as Kothari et al (2005) find that including a constant term (ROA) controls for heteroscedasticity not alleviated by using assets as deflator and mitigates problem of an omitted size variable, both of which make power of test comparisons more robust. The total accruals are estimated as the difference between net income before extraordinary items and cash from operations. The discretionary accruals, reflected in the residuals of the regression, are measured as the difference between total actual accruals and predicted non-discretionary accruals.

$$TA_t = \alpha_1(1/A_{t-1}) + \alpha_2(\Delta REV_t - \Delta REC_t) + \alpha_3(PPE_t) + \alpha_4(ROA_t) + \varepsilon_t$$

Where

ΔROA_t = returns on assets in year t

4.2 Sampling

Firm's accounting data is obtained from the Aspect Data base from 2002 through 2008, and firm's stock return data is obtained from Australian Securities Exchange Database. The sample starts in 2002 because the Australian Corporations Act, which gives clear guidance on director's responsibility for their company, is implemented in 2001. The sample ends in 2008 in order to avoid the effect of global financial crisis on stock price.

Aspect provides 7505 firm-years observations without missing value. I merge Market to Book ratio to the accounting data. Due to missing value of Market to Book ratio, the sample size reduces to 6640 firm-years. To check for obvious data errors and document any cases excluded because of data error, I calculate the descriptive statistics (table1) for all of the variables.

Table 1: Summary Descriptive Statistics for all variables (in hundred million except N and all statistics for Market to Book Ratio)

VARIABLE	<i>N</i>	mean	median	SD	min	max
TOTAL ASSET	6640	10.79	0.49	62.95	0	1670
OPERATING REVENUE	6640	7.67	0.33	48.69	-0.03	1620
NET RECEIVABLES	6640	0.87	0.04	4.59	0	125
OPERATING PROFIT AFTER TA	6640	0.7	0.01	6.8	-116	206
NET CASH FLOW FROM OPERATI	6640	1.07	0.02	8.1	-21.4	217
PPE	6640	3.88	0.05	25.92	-0.01	520
TOTAL LIABILITIES	6640	6.07	0.2	38.7	0	1200
MARKET TO BOOK RATIO	6640	2.82	1.68	10.34	-314.7	266

Table 1 demonstrates some data error, for example, negative value in operating revenue (minimum value is -3002639), negative value in net receivable (minimum value is -8623), and negative value in Plant, Property and Equipment (minimum value is -517000). I exclude firms with negative value in operating revenue, net receivable, and PPE, which reduces the sample size to 6632 firm-years , among them, 5754 firm-years are for 2002 to 2008, and 4817 firm-years for energy (GICS 10) , materials – metals & mining only (GICS 151040) , industrials (GICS 20) , consumer discretionary (GICS 25) , consumer staples (GICS 30) , health care (GICS 35) , information technology (GICS 45) , and telecommunications (GICS 50) industries.

4.3 Summary Statistic of Discretionary accruals

I estimate annual cross-sectional regressions on the sample partitioned by GICS 4-digit industry code and year and collect the residuals from each regression. I then calculate the mean of those residuals according to the 4-digit level to examine the discretionary accruals of each industry group. The results are provided in table 2

Table 2: Descriptive Statistics of Unstandardised Residuals

Industry	GICS	N	MEAN	MEDIAN	SD	MIN	MAX
Energy	1010	473	0	0.029	0.466	-5.618	3.165
Materials	1510	754	0	0.006	0.35	-4.761	2.762
	2010	526	0	-0.022	0.204	-0.71	1.802
Industrials	2020	318	0	0.002	0.138	-0.795	0.828
	2030	116	0	-0.004	0.044	-0.1	0.145
Consumer	2510	65	0	0	0.077	-0.228	0.288
Discretionary	2520	140	0	-0.001	0.086	-0.327	0.467
	2530	253	0	0.007	0.104	-0.347	0.519
	2540	264	0	0.009	0.217	-2.05	0.99
	2550	231	0	0.009	0.094	-0.412	0.255
Consumer	3010	51	0	-0.001	0.071	-0.238	0.16
Staples	3020	248	0	-0.011	0.089	-0.337	0.399
	3030	1					
Health	3510	333	0	0.006	0.312	-1.637	2.368
Care	3520	256	0	-0.006	0.197	-0.921	0.919
Information	4510	428	0	-0.016	0.34	-2.968	1.251
Technology	4520	184	0	0.002	0.287	-0.889	1.09
	4530	7	0	0	0	0	0
Telecom	5010	169	0	0.022	0.331	-1.746	1.631

Table 2 shows that while the means of the discretionary accruals are all close to zero, there is a significant difference for the medians, ranging from -0.0027 for GICS 2510 to 0.029 for GICS1010, which shows that for some GICS group, the unstandardised residuals may not be normal distributed. Due to the few observations for GICS 3030 (only 1) and GICS4530 (only 7), I will not consider these groups in future discussion.

4.4 Test the assumptions underpinning the residuals of OLS regression

Tests for normality of the residuals

One of the assumptions of OLS regression is that the residuals are normally distributed with expected value of zero. To test this assumption, I produce the yearly histograms (Appendix 1)

for each industry group and test the normality using Kolmogorov-Smirnov (K-S) test, Cramer-von Mises test and Anderson-Darling test (Appendix 2). Assuming a 5% significant level, table 3 provides the results of the normality test.

Table 3: Results for the normality tests of the residuals.

Industry	GICS	Year2003	Year2004	Year2005	Year2006	Year2007	Year2008
Energy	1010	YES	NO	NO	NO	YES	NO
Materials	1510	NO	NO	NO	NO	NO	NO
	2010	NO	NO	NO	NO	NO	NO
Industrials	2020	YES	NO	NO	NO	NO	NO
	2030	YES	YES	NO	YES	YES	YES
Consumer	2510	YES	YES	YES	YES	YES	YES
Discretionary	2520	YES	YES	YES	NO	YES	YES
	2530	NO	NO	YES	YES	YES	YES
	2540	NO	NO	NO	NO	YES	NO
	2550	NO	NO	YES	YES	YES	NO
Consumer	3010	NO	YES	YES	YES	YES	YES
Staples	3020	YES	YES	NO	NO	NO	NO
Health	3510	YES	NO	NO	NO	NO	NO
Care	3520	YES	NO	NO	NO	NO	YES
Information	4510	NO	NO	NO	NO	NO	NO
Technology	4520	YES	YES	YES	NO	YES	YES
Telecom	5010	YES	NO	YES	NO	NO	NO

Notes: "Yes" means the residuals are normally distributed, while "NO" means the residuals are not normally distributed.

Table 3 show that among the 102 distributions, only 43 (42.16%) are normally distributed. Moreover the normality clusters in some industries, for example, for GICS2510, the residuals are all normal distributed for the five years , for GICS2520, GICS3010, GICS4520, four out of five residuals exhibits normal distribution, while on the other hand, for GICS 1510, GICS 2010 , GICS 4510, none of the residuals are normal distributed, for GICS2020, GICS2540, GICS3510, the residuals are normal distributed only in one out of six years. For other GICS groups, the results are mixed.

Tests for Heteroscedasticity

Another main assumption for the OLS regression is the homogeneity of variance of the residuals. I use the White test to examine the null hypothesis that the variance of the residual is homogenous. In most of the case, the results on “Test of First and Second Moment Specification” show relative high p value, demonstrating that the residuals have constant variance.

4.5 Tests for normality after excluding outliers

To test whether the non-normal distribution are caused by some outliers, I exclude the sample whose residuals from the initial regressions are more than 3 standard deviations from zero, residuals with “Cook’s distance’ equal or larger than 3.0, firms whose total accrual divided by total assets are larger than one, and firms revenue divided by total assets are less than 1 percent. This reduces the sample size to 4461 firm-years. I then conduct the normality tests, with the results provided in table 4.

Table 4: Results for the normality tests of the residuals after excluding the outliers

Industry	GICS	Year2003	Year2004	Year2005	Year2006	Year2007	Year2008
Energy	1010	YES	NO	NO	NO	YES	NO
Materials	1510	NO	NO	NO	YES	NO	NO
	2010	NO	YES	NO	YES	NO	NO
Industrials	2020	YES	NO	YES	YES	YES	NO
	2030	YES	YES	YES	YES	YES	YES
Consumer	2510	YES	YES	YES	YES	YES	YES
Discretionary	2520	YES	YES	YES	YES	YES	YES
	2530	NO	YES	YES	YES	YES	YES
	2540	NO	NO	NO	NO	YES	NO
	2550	NO	YES	YES	YES	YES	NO
Consumer	3010	NO	YES	YES	YES	YES	YES
Staples	3020	YES	YES	YES	NO	YES	NO
Health	3510	YES	NO	NO	NO	NO	NO
Care	3520	YES	YES	YES	YES	YES	YES
Information	4510	YES	NO	NO	YES	YES	NO
Technology	4520	YES	YES	YES	NO	YES	YES
Telecom	5010	YES	NO	YES	NO	NO	NO

Notes: "Yes" means the residuals are normally distributed, while "NO" means the residuals are not normally distributed.

Table 4 shows that after excluding the outliers, the normality of the distributions greatly improves. Among the 102 distributions, 63 are normal distributed, which is 62 percent, recalling that without excluding the outliers, only 42 percent are normal distributed. Most important, within the five years, all GICS groups have some years with normal distributed residual. So, in the following test, I will use the residuals from the samples excluding the outliers.

4.6 Model

In this study, I hypothesize that discretionary accruals prior to the issuing year (t-1) and in the issuing year (t) are positively correlated with new equity offerings in year t. The following model is used to test whether there is a positive correlation between discretionary accruals (in

year t-1 , t, or both year t-1 and t) and new equity offerings. The residuals estimated from Performance-adjusted modified Jones model are used as the dependent variables. This study controls for firm size measured by total assets, leverage, and market to book ratio. The independent variable is new equity offerings during the year.

$$DA_{it-1/it} = \beta_0 + \beta_1 \log SIZE_{it-1/it} + \beta_2 LEV_{it-1/it} + \beta_3 MTB_{it-1/it} + \beta_4 ROA_{it-1/it} + \beta_5 NEWISSUE_{it} + \varepsilon_{it-1/it}$$

Where:

- $DA_{it-1/it}$ = discretionary accruals for firm i in year t-1 or t;
- $\log SIZE_{it-1/it}$ = natural log of total assets for firm i in year t-1 or t;
- $LEV_{it-1/it}$ = total liabilities to total assets for firm i in year t-1 or t;
- $MTB_{it-1/it}$ = market to book ratio for firm i in year t-1 or t;
- $ROA_{it-1/it}$ = return on assets for firm i in year t-1 or t;
- $NEWISSUE_{it}$ = dummy variable (1 = new equity issuing during the year, 0 = none);
- $\varepsilon_{it-1/it}$ = error term

V. EMPIRICAL RESULTS

5.1 Multivariate regression analysis

Prior literature indicates that managers manipulate earnings upwards via discretionary accruals prior to new equity issuing in order to inflate stock price for managerial opportunism or rationally respond to capital market expectations (Teoh et al, 1998 and Rangan, 1998; Lakshmanan, 2000). I hypothesize that there is a positive correlation between earnings management in the year prior to and the year of new equity offerings. Panel A in Table 5 presents the multivariate analysis of the effects of equity offerings on discretionary accruals prior to the issuing year for each industry group.

Table 5: Regression analysis of the effect of new public equity issuing

Panel A: The effect of equity offerings in DA_{it-1}

Industry	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	IT	Telecom
Intercept	0.04	-0.241	-0.001	-0.011	0.016	0	-0.181	-0.095
	<i>0.799</i>	<i>***0.003</i>	<i>0.989</i>	<i>0.777</i>	<i>0.702</i>	<i>0.998</i>	<i>0.163</i>	<i>0.581</i>
logTA	-0.003	0.012	0.002	0.002	-0.001	-0.002	0.008	0.007
	<i>0.764</i>	<i>***0.005</i>	<i>0.523</i>	<i>0.436</i>	<i>0.633</i>	<i>0.723</i>	<i>0.298</i>	<i>0.407</i>
Leverage	-0.023	-0.008	-0.064	-0.027	0	-0.006	0.002	-0.079
	<i>0.742</i>	<i>0.308</i>	<i>***0.001</i>	<i>*0.051</i>	<i>0.999</i>	<i>0.863</i>	<i>0.684</i>	<i>0.133</i>
MTB	0	-0.002	-0.006	-0.002	-0.001	0.002	-0.001	-0.003
	<i>0.957</i>	<i>**0.024</i>	<i>***0.000</i>	<i>***0.000</i>	<i>*0.059</i>	<i>***0.000</i>	<i>**0.022</i>	<i>***0.001</i>
ROA	0.003	-0.065	-0.112	-0.027	0.019	-0.003	-0.098	-0.066
	<i>0.962</i>	<i>**0.023</i>	<i>***0.000</i>	<i>0.131</i>	<i>0.543</i>	<i>0.922</i>	<i>***0.000</i>	<i>0.261</i>
Newissue	0.024	0.019	0.026	-0.003	0.025	0.047	0.094	0.005
Adjusted R²	0.422	0.311	<i>***0.010</i>	0.760	<i>**0.022</i>	<i>**0.024</i>	<i>***0.000</i>	0.916
	-0.013	0.018	0.07	0.025	0.021	0.051	0.092	0.072

Note: (1) ***Significance at 1%, **5%, *10%

$$(2) DA_{it-1} = \beta_0 + \beta_1 \log SIZE_{it-1} + \beta_2 LEV_{it-1} + \beta_3 MTB_{it-1} + \beta_4 ROA_{it-1} + \beta_5 NEWISSUE_{it} + \varepsilon_{it-1}$$

From pane A of table 5, I only find the evidence of positive correlation between new equity offerings and prior issuing year's discretionary accruals in industrials, consumer staples, health care and IT. The coefficients for industrials and IT are .026 and .094 respectively which are significant at 1% level, while the coefficients for consumer staples and health care are .025 and .047 respectively which are significant at 5% level. The coefficients for industrials , IT, consumer staples and health care are not only statistically significant, but also significant from economic aspects. All of the coefficients are more than 2%, while the coefficients for IT are more than 9%, meaning that discretionary accruals are managed upward for than 9% before SOEs. In summary, the results indicate that firms in industry, consumer staples, health care and IT are more likely to adopt income-increasing strategies prior to equity offerings.

Following previous studies that managers continuously manipulate earnings in the year of new equity offerings (Teoh et al, 1998 and Rangan, 1998; Lakshmanan, 2000), I hypothesize that there is a positive correlation between earnings management in the year of equity offerings and new public issuing. Panel B in Table 5 reports the results for the effect of new equity issuing in the issuing year's discretionary accruals.

Table 5: Regression analysis of the effect of new public equity issuing

Panel B: The effects of equity offerings in DA_{it}

Industry	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	IT	Telecom
Intercept	0.242	-0.142	-0.020	-0.022	0.041	-0.071	-0.081	-0.139
	<i>0.150</i>	<i>*0.058</i>	<i>0.654</i>	<i>0.521</i>	<i>0.326</i>	<i>0.431</i>	<i>0.503</i>	<i>0.392</i>
logTA	-0.013	0.006	0.002	0.002	-0.002	0.003	0.003	0.010
	<i>0.150</i>	<i>0.118</i>	<i>0.464</i>	<i>0.196</i>	<i>0.469</i>	<i>0.615</i>	<i>0.656</i>	<i>0.260</i>
Leverage	-0.034	-0.011	-0.035	-0.044	-0.029	-0.010	-0.001	-0.083
	<i>0.643</i>	<i>0.171</i>	<i>**0.043</i>	<i>***0.000</i>	<i>0.238</i>	<i>0.719</i>	<i>0.685</i>	<i>0.116</i>
MTB	0.006	-0.002	-0.006	-0.002	-0.001	0.002	-0.001	-0.003
	<i>0.233</i>	<i>**0.045</i>	<i>***0.000</i>	<i>***0.000</i>	<i>0.140</i>	<i>***0.000</i>	<i>**0.022</i>	<i>***0.001</i>
ROA	0.101	-0.067	-0.083	-0.024	0.015	-0.024	-0.077	-0.055
	<i>**0.026</i>	<i>**0.014</i>	<i>***0.000</i>	<i>0.127</i>	<i>0.579</i>	<i>0.293</i>	<i>***0.000</i>	<i>0.346</i>
Newissue	0.037	0.047	0.030	0.021	0.021	0.017	0.022	0.054
	<i>0.273</i>	<i>***0.009</i>	<i>***0.001</i>	<i>**0.019</i>	<i>***0.066</i>	<i>0.327</i>	<i>0.306</i>	<i>0.213</i>
Adjusted R²	0.010	0.026	0.053	0.043	0.026	0.037	0.041	0.074

Note: (1) ***Significance at 1%, **5%, *10%

$$(2) DA_{it} = \beta_0 + \beta_1 \log SIZE_{it-1} + \beta_2 LEV_{it-1} + \beta_3 MTB_{it-1} + \beta_4 ROA_{it-1} + \beta_5 NEWISSUE_{it} + \varepsilon_{it-1}$$

Panel B of table 5 shows that firms in materials and industrials indicate a significantly positive association at 1% level between new equity offerings and discretionary accruals during the issuing year. The association for firms in consumer discretionary and staples are significant at 5% and 10% respectively. In economic aspect, earnings management in the year of equity offerings is lower than that before the year of equity offerings, since except consumer staples, all of the other three regression coefficients (materials, industrials and consumer discretionary) are less than 2% (for industrials, it is only 0.1%). The results indicate the degree of correlation between earnings management and new equity offerings is different across various industry groups.

Panel A and B of table 5 demonstrate that some industries manage their earnings in the prior year of new equity offerings, for example, industrials, consumer staple, health care and IT, while other industries manage their earnings in the year of new equity offerings, for example, materials, industrials, consumer staple and consumer discretionary. For industrials and consumer staples, they manage their earnings in both prior and current years of new equity offering. Not surprisingly, firms management their earnings significantly from both statistic and economic aspects in the prior year of new equity issuing, since this will give a good picture of their financial statements in the year prior to the new equity issuing. From the economic aspect, earnings management in the year of new equity issue is relative smaller (less than 2%) than earnings management prior to the year of new equity issue (less than 2% and as high as 9% for IT). For industries which management their earnings only in the year of new equity issue but not in the prior year of new equity issue might because these industries have more firms which issue the new equity at the end of financial year, for example, the 4th quarter, so that they manage their earning in the current year to have high earnings reported in the prior quarters or mid- year financial statements.

To investigate the aggregate earnings management prior and in the year of net equity offerings, I regress discretionary accrual in year t-1 and t on NEWISSUE. Results are provided in Panel c of table 1.

Table 5: Regression analysis of the effect of new public equity issuing

Panel C: The effects of equity offerings in DA_{it} and DA_{it-1}

Industry	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	IT	Telecom
	-0.072	-0.348	-0.031	-0.052	-0.007	0.027	-0.139	0.045
Intercept	0.664	***0.000	0.509	0.176	0.887	0.809	0.307	0.822
	0.002	0.018	0.003	0.004	0.000	-0.004	0.004	0.001
logTA	0.815	***0.000	0.319	*0.077	0.849	0.506	0.608	0.890
	-0.012	-0.044	-0.065	-0.034	0.006	0.001	0.033	-0.076
Leverage	0.869	**0.019	***0.001	0.015	0.816	0.975	0.070	0.159
	0.001	-0.004	-0.006	-0.002	-0.001	0.002	-0.002	-0.002
MTB	0.863	***0.002	***0.000	***0.000	0.069	***0.000	***0.002	***0.007
	-0.007	-0.135	-0.095	-0.011	0.029	-0.007	-0.072	-0.018
ROA	0.896	***0.000	***0.001	0.550	0.407	0.797	***0.002	0.772
	0.031	0.032	0.044	0.013	0.035	0.039	0.087	-0.033
Newissue Adjusted R²	0.339	*0.093	***0.000	0.134	***0.001	*0.07	***0.000	0.533
	-0.016	0.074	0.082	0.034	0.048	0.051	0.110	0.061

Note: (1) ***Significance at 1%, **5%, *10%

$$(2) DA_{it-1} \text{ and } \tau = \beta_0 + \beta_1 \log SIZE_{it-1} + \beta_2 LEV_{it-1} + \beta_3 MTB_{it-1} + \beta_4 ROA_{it-1} + \beta_5 NEWISSUE_{it} + \varepsilon_{it-1}$$

Panel C shows that firms in materials, industrials, consumer staples, health care, and IT manage their earnings upward prior and in the year of new equity offerings. The earnings management is not only statistically significant, but also economically significant, all of them are more than 3%, while the coefficient for IT is as high as 8%.

Additionally, it is interesting to find that the market to book ratio is significantly negatively correlated with discretionary accruals, nearly for every industry group except for energy in the year prior to equity offerings and energy and consumer staples in the year of equity offerings, and except for health care which indicates a positive correlation. Furthermore, the association between ROA and discretionary accruals is also significantly positive for most of industry groups, which is consistent with Kothari et al (2005)'s argument that including ROA can control

for heteroscedasticity not alleviated by using assets as deflator and mitigates problem of an omitted size variable, both of which make power of test comparisons more robust. Other correlations are not common across various industries.

5.2 Sensitivity tests

I conduct two sensitivity tests in this study. I first split the sample at the median firm size and re-run the regression within these subsamples. I then re-estimate regression excluding loss firms. The results are presented in the following tables.

5.2.1 Sensitivity tests based on firm size

Table 6 presents the sensitivity tests on larger and smaller firms' discretionary accruals for the years prior to new equity offerings. The results show a different pattern for larger and smaller firms, specifically, for larger firms, there is a positive correlation between prior issuing year's earnings management and new public offerings in Energy, Consumer Discretionary, health care and IT (Panel A of Table 6); for smaller firms, there is a positive correlation between prior issuing year's earnings management and new public offerings in Industrials, Consumer Staples, and IT (Panel B of Table 6).

Table 6: Sensitivity tests based on firm size in year prior to equity issuing

Panel A: The effect of equity offerings in DA_{it-1} for large firms

Industry	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	IT	Telecom
Intercept	-0.523 **0.011	-0.221 **0.015	-0.116 0.169	-0.02 0.744	0.129 *0.066	0.307 **0.027	-0.297 0.183	-0.163 0.501
logTA	0.027 **0.013	0.012 **0.014	0.007 *0.094	0.002 0.58	-0.006 *0.101	-0.019 **0.011	0.013 0.288	0.008 0.545
Leverage	-0.125 0.201	-0.055 0.138	-0.05 0.241	-0.027 0.188	0.018 0.712	0.079 *0.109	0.094 *0.070	0.081 0.376
MTB	0.001 0.933	-0.003 **0.056	-0.005 *0.066	-0.005 ***0.000	-0.011 ***0.003	0.002 ***0.001	-0.005 0.206	-0.013 0.332
ROA	0.014 0.883	-0.059 *0.106	-0.138 0.148	0.202 ***0.000	0.076 0.456	0.048 0.345	-0.135 **0.026	0.032 0.854
Newissue Adjusted R²	0.06 *0.092	0.014 0.499	0.013 0.326	0.028 **0.028	0.01 0.484	0.052 **0.045	0.064 *0.039	-0.088 0.167
R²	0.026	0.016	0.027	0.135	0.086	0.087	0.093	0.01

Note: (1) ***Significance at 1%, **5%, *10%
(2) $DA_{it-1} = \beta_0 + \beta_1 \log SIZE_{it-1} + \beta_2 LEV_{it-1} + \beta_3 MTB_{it-1} + \beta_4 ROA_{it-1} + \beta_5 NEWISSUE_{it} + \varepsilon_{it-1}$

Panel B: The effects of equity offerings in DA_{it-1} for small firms

Industry	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	IT	Telecom
Intercept	1.642 ***0.004	-1.114 *0.053	0.148 0.312	0.037 0.753	-0.114 0.44	0.235 0.517	0.09 0.79	0.159 0.846
logTA	-0.097 ***0.004	0.069 *0.072	-0.007 0.414	-0.001 0.883	0.006 0.483	-0.018 0.412	-0.009 0.658	-0.006 0.901
Leverage	0.051 0.602	0.002 0.866	-0.069 ***0.003	-0.031 0.101	0.002 0.938	-0.05 0.305	0 0.981	-0.132 *0.098
MTB	-0.001 0.875	-0.002 0.11	-0.006 ***0.002	-0.001 **0.016	-0.001 0.307	0.007 ***0.000	-0.001 *0.057	-0.003 ***0.004
ROA	0.127 0.107	-0.089 0.152	-0.092 ***0.001	-0.045 *0.065	0.012 0.759	0.011 0.774	-0.077 ***0.008	-0.054 0.496
Newissue Adjusted R²	-0.02 0.663	0.061 0.343	0.035 **0.021	-0.02 0.15	0.034 **0.036	0.05 0.123	0.102 ***0.004	0.043 0.545
R²	0.026	0.028	0.085	0.022	0.01	0.084	0.086	0.115

Note: (1) ***Significance at 1%, **5%, *10%
(2) $DA_{it-1} = \beta_0 + \beta_1 \log SIZE_{it-1} + \beta_2 LEV_{it-1} + \beta_3 MTB_{it-1} + \beta_4 ROA_{it-1} + \beta_5 NEWISSUE_{it} + \varepsilon_{it-1}$

Table 7 reports the sensitivity tests in the year of new equity offerings. The results reveal that the significant positive correlation between earnings management and new equity offerings is found in larger firms materials and industrials at the 1% level, IT at the 5% level and Energy at 10% level (Panel A of Table7).

Panel B in Table 7 shows that earnings management is positively correlated with new equity offerings in smaller firms in consumer discretionary, health care and telecom. Consistent with previous findings, there is a negative correlation between earnings management and market to book ratio across various industries, except for health care which indicates a significant positive correlation.

Table 7: Sensitivity tests on firm size in the year of equity issuing

Panel A: The effect of equity offerings in DA_{it} for large firms

Industry	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	IT	Telecom
Intercept	-0.065	-0.157	-0.152	-0.027	0.137	0.22	-0.181	-0.065
	<i>0.808</i>	<i>*0.055</i>	<i>**0.041</i>	<i>0.628</i>	<i>**0.040</i>	<i>*0.063</i>	<i>0.356</i>	<i>0.772</i>
logTA	0.004	0.007	0.009	0.003	-0.006	-0.013	0.007	0.004
	<i>0.798</i>	<i>*0.085</i>	<i>**0.021</i>	<i>0.26</i>	<i>*0.072</i>	<i>**0.040</i>	<i>0.515</i>	<i>0.753</i>
Leverage	-0.238	-0.037	-0.039	-0.043	0	0.062	0.084	0.032
	<i>*0.061</i>	<i>0.217</i>	<i>0.307</i>	<i>**0.020</i>	<i>0.997</i>	<i>0.156</i>	<i>*0.077</i>	<i>0.729</i>
MTB	0.014	-0.003	-0.007	-0.005	-0.011	0.002	-0.005	-0.007
	<i>*0.092</i>	<i>*0.059</i>	<i>***0.007</i>	<i>***0.000</i>	<i>***0.002</i>	<i>***0.001</i>	<i>0.14</i>	<i>0.611</i>
ROA	0.265	-0.017	-0.119	0.084	0.131	-0.001	-0.139	0.172
	<i>**0.036</i>	<i>0.614</i>	<i>0.135</i>	<i>***0.004</i>	<i>0.185</i>	<i>0.991</i>	<i>***0.014</i>	<i>0.268</i>
Newissue	0.086	0.049	0.038	-0.012	0.021	0.002	0.054	-0.042
Adjusted	<i>*0.058</i>	<i>***0.007</i>	<i>***0.001</i>	<i>0.259</i>	<i>0.168</i>	<i>0.924</i>	<i>**0.039</i>	<i>0.46</i>
R²	0.058	0.021	0.071	0.11	0.101	0.051	0.083	-0.029

Note: (1) ***Significance at 1%, **5%, *10%

(2) $DA_{it} = \beta_0 + \beta_1 \log SIZE_{it} + \beta_2 LEV_{it} + \beta_3 MTB_{it} + \beta_4 ROA_{it} + \beta_5 NEWISSUE_{it} + \varepsilon_{it}$

Panel B: The effects of equity offerings in DA_{it} for small firms

Industry	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	IT	Telecom
Intercept	1.641 ***0.004	-1.009 *0.113	0.188 0.182	-0.005 0.963	-0.084 0.572	0.232 0.467	0.252 0.428	-0.469 0.548
logTA	-0.097 ***0.005	0.064 *0.133	-0.01 0.212	0.001 0.868	0.005 0.534	-0.019 0.341	-0.017 0.392	0.03 0.521
Leverage	0.028 0.752	-0.004 0.774	-0.036 *0.101	-0.048 ***0.007	-0.03 0.365	-0.038 0.339	-0.002 0.378	-0.103 0.18
MTB	0 0.992	-0.002 0.184	-0.005 **0.021	-0.001 ***0.001	-0.001 0.528	0.007 ***0.000	-0.001 *0.074	-0.003 ***0.004
ROA	0.132 **0.020	-0.136 **0.046	-0.058 **0.030	-0.032 0.15	0.002 0.96	-0.001 0.981	-0.062 ***0.011	-0.058 0.476
Newissue Adjusted R²	-0.007 0.895	0.049 0.487	0.023 0.125	0.041 ***0.002	0.023 0.179	0.044 *0.108	-0.011 0.747	0.116 *0.097
R²	0.027	0.038	0.04	0.052	-0.003	0.085	0.032	0.141

Note: (1) ***Significance at 1%, **5%, *10%

$$(2) DA_{it} = \beta_0 + \beta_1 \log SIZE_{it} + \beta_2 LEV_{it} + \beta_3 MTB_{it} + \beta_4 ROA_{it} + \beta_5 NEWISSUE_{it} + \varepsilon_{it}$$

Table 8 reports the sensitivity tests prior and in the year of new equity offerings. The results (Panel A) reveal that the significant positive correlation between earnings management and new equity offerings is found in larger firms in industrials and IT with coefficients of 0.034 and 0.091, both are significant from statistic and economic aspects. Panel B in Table 8 shows that earnings management is positively correlated with new equity offerings in smaller firms in 4 (industrials, consumer staples, health care and IT) out of the 7 industries. Recall that for large firms, only 2 (industrials and IT) out of the 7 industries manage their earnings in SEO. Except for IT industry, small firms manage their earnings more (5.6% for industrials and consumer staples, 9.3% for health care and 7.1% for IT) more upward than large firms. Choi and Sohn (2010) find that banks with higher disclosure levels tend to do less discretionary accounting practices in loan loss provisions. I suspect that the large firms manage their earnings less than small firms might be due to the fact the large firms usually have higher disclosure levels.

Table 8: Sensitivity tests on firm size in the prior year and year of new equity issuing

Panel A: The effect of equity offerings in DA_{it-1} and DA_{it} for large firms

Industry	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	IT	Telecom
Intercept	-0.402	-0.346	-0.165	-0.057	0.113	0.338	-0.211	-0.275
	0.04	*0.000	**0.060	0.358	0.132	**0.016	0.367	0.284
logTA	0.021	0.019	0.009	0.004	-0.005	-0.021	0.008	0.015
	0.05	*0.000	**0.029	0.242	0.202	***0.006	0.548	0.276
Leverage	-0.075	-0.099	-0.066	-0.038	0.005	0.07	0.06	0.076
	0.453	***0.012	0.142	**0.079	0.922	0.19	0.283	0.402
MTB	-0.001	-0.002	-0.005	-0.005	-0.01	0.001	-0.005	-0.024
	0.929	**0.07	**0.08	***0.000	***0.005	***0.001	0.204	0.115
ROA	-0.029	-0.183	-0.144	0.225	0.031	0.056	-0.097	0.01
	0.771	***0.000	0.152	***0.000	0.777	0.291	0.113	0.954
Newissue	0.003	0.028	0.034	0.01	0.018	0.035	0.091	-0.08
	0.928	0.163	***0.004	0.332	0.17	0.134	***0.001	0.149
Adjusted R2	-0.007	0.072	0.057	0.139	0.093	0.078	0.102	0.067

Panel B: The effect of equity offerings in DA_{it-1} and DA_{it} for small firms

Industry	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	IT	Telecom
Intercept	1.51	-1.387	0.103	-0.236	-0.176	0.204	0.022	-0.319
	**0.016	*0.088	0.483	*0.066	0.278	0.625	0.949	0.704
logTA	-0.096	0.089	-0.005	0.014	0.008	-0.019	-0.006	0.025
	***0.010	*0.097	0.528	0.053	0.375	0.459	0.803	0.619
Leverage	0.081	-0.027	-0.068	-0.034	0.015	-0.045	0.03	-0.095
	0.469	0.357	***0.004	*0.083	0.641	0.413	0.178	0.24
MTB	-0.001	-0.015	-0.006	-0.001	-0.001	0.009	-0.002	-0.002
	0.919	***0.006	***0.006	**0.014	0.355	***0.000	***0.009	**0.024
ROA	0.126	-0.136	-0.065	-0.045	0.035	0.041	-0.065	0.002
	0.128	0.083	**0.049	*0.08	0.448	0.377	0.033	0.981
Newissue	0.08	0.023	0.056	0.015	0.056	0.093	0.071	0.021
	0.206	0.765	***0.000	0.251	***0.002	**0.022	*0.061	0.837
Adjusted R²	0.039	0.174	0.091	0.031	0.073	0.114	0.091	0.126

Note: (1) ***Significance at 1%, **5%, *10%

$$(2) DA_{it-1 \text{ and } it} = \beta_0 + \beta_1 \log SIZE_{it} + \beta_2 LEV_{it} + \beta_3 MTB_{it} + \beta_4 ROA_{it} + \beta_5 NEWISSUE_{it} + \varepsilon_{it}$$

5.2.2 Sensitivity tests for profit firms

Panel A in Table 9 shows that after excluding loss firms, firms in industrials, health care and IT manage their earnings upward in the year prior to new equity issuing while firms in materials, industrials and consumer discretionary manage their earnings upward in the year of new equity issuing (Panel B, Table 9). To test whether profit firms are more likely to manage their earnings in SEO, I estimate the aggregate effect of earnings management prior and in the year of new equity offering (Panel C, Table 9). Compared with Panel C of Table 5, which shows earnings management prior and in the year of new equity offerings for both profit and loss firms, Panel C of Table 9 shows that on average, profit firms manage earnings more upward than loss firms, for example, for profit firms, materials industry manage their earnings upward by 6.1%, while for the unrestricted sample, materials industry only manage their earnings upward by 3.2%. The reason that profit firms manage earnings more upward might be that they have more sales, so that they can use the discretionary accruals to manage their earnings.

Table 9: Sensitivity tests excluding loss firms

Panel A: The effects of equity offerings in DA_{it-1} on profit firms

Industry	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	IT	Telecom
Intercept	-0.314	-0.280	-0.016	-0.066	-0.005	0.151	-0.211	0.109
	0.120	***0.011	0.766	*0.095	0.916	0.274	0.322	0.642
logTA	0.019	0.018	0.000	0.005	0.000	-0.007	0.011	-0.013
	*0.081	***0.001	0.884	***0.009	0.875	0.336	0.352	0.282
Leverage	-0.152	-0.119	0.038	-0.039	0.023	-0.122	0.003	0.334
	0.224	**0.024	0.248	**0.028	0.622	0.180	0.968	0.162
MTB	-0.008	-0.002	-0.009	-0.004	-0.013	0.004	-0.004	0.000
	0.486	0.230	***0.001	***0.000	***0.001	0.250	0.484	0.983
ROA	-0.058	-0.358	0.024	-0.100	0.009	-0.189	-0.345	0.198
	0.728	***0.000	0.741	**0.048	0.952	0.222	**0.020	0.491
Newissue	0.030	0.029	0.024	0.009	0.015	0.057	0.102	-0.152
	0.460	0.295	**0.037	0.405	0.269	*0.057	***0.006	**0.047
Adjusted R2	0.002	0.108	0.030	0.062	0.092	0.024	0.101	0.071

Note: (1) ***Significance at 1%, **5%, *10%
(2) $DA_{it-1} = \beta_0 + \beta_1 \log SIZE_{it} + \beta_2 LEV_{it} + \beta_3 MTB_{it} + \beta_4 ROA_{it} + \beta_5 NEWISSUE_{it} + \varepsilon_{it}$

Panel B: The effects of equity offerings in DA_{it} on profit firms

Industry	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	IT	Telecom
Intercept	-0.309	-0.339	-0.019	-0.070	0.002	0.161	-0.092	-0.125
	0.120	***0.002	0.732	*0.074	0.958	0.250	0.662	0.638
logTA	0.018	0.020	-0.001	0.005	0.000	-0.007	0.004	-0.003
	*0.083	***0.000	0.771	***0.009	0.988	0.347	0.722	0.779
Leverage	-0.146	-0.109	0.049	-0.035	0.029	-0.090	0.029	0.349
	0.245	**0.036	0.125	*0.048	0.528	0.326	0.692	0.257
MTB	-0.008	-0.002	-0.009	-0.004	-0.014	0.003	-0.004	0.000
	0.477	0.338	***0.001	***0.000	***0.001	0.408	0.520	0.996
ROA	-0.059	-0.351	0.039	-0.096	0.033	-0.200	-0.351	0.128
	0.722	***0.000	0.588	*0.058	0.818	0.202	**0.021	0.712
Newissue	0.032	0.076	0.036	0.024	0.012	-0.031	0.052	-0.011
	0.434	***0.005	***0.001	**0.021	0.380	0.368	0.150	0.917
Adjusted R2	0.002	0.134	0.042	0.071	0.089	0.002	0.073	-0.041

Note: (1) ***Significance at 1%, **5%, *10%
(2) $DA_{it} = \beta_0 + \beta_1 \log SIZE_{it} + \beta_2 LEV_{it} + \beta_3 MTB_{it} + \beta_4 ROA_{it} + \beta_5 NEWISSUE_{it} + \varepsilon_{it}$

Panel C: The effects of equity offerings in DA_{it-1} and DA_{it} on profit firms

Industry	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	IT	Telecom
	-0.355	-0.341	-0.036	-0.069	-0.021	0.174	-0.215	0.048
Intercept	*0.087	***0.002	0.507	*0.081	0.665	0.211	0.306	0.878
	0.02	0.02	0	0.005	0.001	-0.009	0.01	-0.009
logTA	*0.063	***0.000	0.957	***0.009	0.767	0.264	0.378	0.497
	-0.148	-0.117	0.031	-0.037	0.026	-0.117	-0.002	0.3
Leverage	0.236	**0.025	0.328	**0.037	0.56	0.204	0.982	0.251
	-0.008	-0.003	-0.009	-0.004	-0.014	0.005	-0.003	0.002
MTB	0.505	0.177	***0.001	***0.000	***0.001	0.238	0.621	0.889
	-0.043	-0.346	0.033	-0.098	0.05	-0.2	-0.338	0.082
ROA	0.796	***0.0002	0.643	*0.055	0.725	0.201	**0.022	0.79
	0.041	0.061	0.042	0.012	0.024	0.033	0.102	-0.073
Newissue	0.281	**0.013	***0.000	0.19	**0.030	0.216	***0.001	0.415
Adjusted R²	0.007	0.128	0.056	0.064	0.115	0.008	0.115	-0.022

Note: (1) ***Significance at 1%, **5%, *10%

(2) DA_{it-1} and $it = \beta_0 + \beta_1 \log SIZE_{it} + \beta_2 LEV_{it} + \beta_3 MTB_{it} + \beta_4 ROA_{it} + \beta_5 NEWISSUE_{it} + \varepsilon_{it}$

VI. CONCLUSION

In this study, I examine whether Australian firms manage earnings a year before they issue new shares to the public and also during the year of share offering. The underlying assumption is that firms will manage their earnings upwards as this will reflect well on their operations. This will in turn induce the share market to value their shares higher than it actually is. I document the pool results of our examination. In addition, I partition firms into large and small firms using the median firm size as the divider. Moreover, I also re-run the regression by omitting loss firms.

I find that consistent with my initial proposition, firms do manage their earnings one year before and during the year of share issuing. I find in the pooled sample, there is a significant relationship between earnings management and new share issuing in the year of issuance for firms in the Materials, Industry, Consumer discretionary and Consumer staples industry. For the one year before share issuance I find that there is a positive association between the prior year earnings management and current year share issue. I partition the firms into large and small firms on the median firm size level. I find that for large firms there is a significant association between prior year earnings management and share issuing in firms from the Health care and IT industry. Similar conclusions are drawn for small firms in the Consumer discretionary industry.

I also document that profit firms manage their earnings in the year prior to share issuing, but on average, they do not manage earnings in the year of share issuance.

This study can be extended in various directions. First, using Australian data, I can test whether post share issuing performance declines to reflect an adjustment for the earnings management.

Doing so will provide further evidence that firms do manage earnings around the time leading up to and including the time of seasoned equity offerings. In addition, I could study why profitable firms on average appear to manage earnings only in the year prior to share offerings and not in the year of offerings. In the same vein, I could also investigate loss firms' earnings management behaviour more. Some interesting questions to be answered relating to them, relates to the year where they eventually make a profit. Is this related to earnings management or is this related to real policy choices. In addition, a study can further run the regression biannually using interim reports. Such a study will improve our understanding of how earnings management behaves closer to equity offerings.

BIBLIOGRAPHY

- Bartov, E., D. Givoly, and C. Hayn. *The rewards to meeting or beating earnings expectations*. Journal of Accounting and Economics 33 (2):173-204, 2002.
- Choi, Hyosoon and Sohn, Wook. *The effect of bank disclosure on the loan loss provisions and market reaction to LLPS*. International Journal of Economic Issues, Vol.3, No. 1, 2010.
- Cohen, D. A., and P. Zarowin. *Accrual-based and real earnings management activities around seasoned equity offerings*. Journal of Accounting and Economics May:2-19, 2010.
- Dechow, M. P., and I. Dichev. *The quality of accruals and earnings: The role of accrual estimation errors*. The Accounting Review 77:35-59, 2002.
- Defond, M., and J. Jiambalvo. *Audit quality and earnings management*. Journal of Accounting and Economics 17 (1/2):145-176, 1994.
- Defond, M., and C. Park. *Smoothing income in anticipation of future earnings*. Journal of Accounting and Economics 23:115-139, 1997.
- Guthrie, Katherine and Sokolowsky. *Large shareholders and the pressure to manage earnings*. Journal of Corporate Finance 16: 302-319, 2010.
- Jones, J. *Earnings management during import relief investigations*. Journal of Accounting Research 29:193-228, 1991.
- Kim, Yongtae and Park, Myung Seok. *Pricing of Seasoned Equity Offers and Earnings Management*. Journal of financial and Quantitative Analysis 40: 435-463, 2005.

- Kothari, S. P., A. J. Leone, and C. E. Wasley. *Performance matched discretionary accrual measures*. Journal of Accounting and Economics 39:163-197, 2005.
- Lim, Chee Yeow., Thong, Tiong Yang, and Ding, David K. *Firm diversification and earnings management: evidence from seasoned equity offerings*. Review of Quantitative finance and Accounting 30: 69-92, 2008.
- Rangan, S. *Earnings management and the performance of seasoned equity offerings*. Journal of Financial Economics 50:101-122, 1998.
- Rees, L., R. Gore, and S. Gill. *An investigation of asset write-downs and concurrent abnormal accruals*. Journal of Accounting Research 34:157-169, 1996.
- Lakshmanan, L. *Do firms mislead investors by overstating earnings before seasoned equity offerings?* Journal of Accounting and Economics 29 (3):339-371, 2000.
- Skinner, D. J., and R. G. Sloan. *Earnings surprises, growth expectations and stock returns or don't let an earnings torpedo sink your portfolio*. Review of accounting studies 7 (2-3):289-312, 2002.
- Soon, S., and M. Gary. *Earnings management of seasoned equity offering firms in Korea*. The International Journal of Accounting 37 (1):57-78, 2002.
- Subramanyan, K. R. *The pricing of discretionary accruals*. Journal of Accounting and Economics 22 (249-282), 1996.
- Teoh, S., I. Welch, and T. Wong. *Earnings management and the long-run market performance of Initial Public Offering*. The Journal of Finance December:1935-1974, 1998a.
- . *Earnings management and the post issue underperformance in seasoned equity offerings*. Journal of Financial Economics October:63-99, 1998b.

Teoh, S., T. Wong, and G. Rao. *Are earnings during initial public offerings opportunistic?*
Review of accounting studies March:175-208, 1998c.