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Real and Accrual Earnings Management, Does Ownership Retention Matters? Evidence from Emerging Market IPOs

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Abstract
The paper investigated the real and accrual earnings discretionary behaviour of Malaysian IPO firms contemporaneously in terms of nature, direction and quantum. It investigates the discretionary behaviour according to year of listing, industrial sectors, individual accounting items and the impact of ownership retention. The sample consists of 253 Malaysian IPO firms from 2002-2013. The 1991,modified Jones and Roychowdhury, (2006) cross sectional models were used to investigate accrual and real activity discretionary behaviour. The results indicate significant positive abnormal real earnings management and a significant difference in earning management proxies across industrial sectors. Retained ownership is negatively associated with earnings management proxies which seem to support the alignment hypothesis. The study justifies the merging of Main and Second boards and recommend tightening of regulations to constrain real activity discretionary behaviour. It provides academics, analysts, regulators and other gatekeepers with better understanding of earnings management around the IPO event.
Keywords: Real and Accrual Earnings Management, Initial Public Offering, ownership Retention

1. INTRODUCTION

At the beginning of the twenty-first century the global finance and accounting scene dramatically changed. First was the Internet debacle in 2000, then the stock markets that was hitherto bullish became bearish, and companies that were engaged in pernicious earnings management that tried to obscure their accounting reports through various earnings management practices became exposed and precarious. The corporate meltdown that followed culminated into heavy losses to investors. These scandals weakened the integrity of the capital market in the eyes of investors and other stakeholders. Governments worldwide intervened through the promulgation of rules, regulations, accounting standards, corporate governance codes, and securities listing rules and regulations to mention a few. The new corporate environment raises a lot of challenges and questions that are of concern to academics, regulators, and other stake holders.

Earnings management discretionary behaviour around the IPO corporate event became an important research area in the Malaysian corporate setting because of the following motivations. Firstly, since independence Malaysian economy have been steadily growing but suffered an economic crises between 1997 and 1998 which resulted into many companies experiencing dwindling earnings. Saleh & Ahmed, (2005), report that, profit after tax of non-financial firms tumbled by RM3b and RM14b in 1997 and 1998 financial crises period respectively. Since earnings is a signal device of firm value to investors and management has considerable discretion in reporting earnings (Ahmad-Zaluki, et al. 2011, DuCharme, et.al. 2004), earnings management is expected to have been pervasively utilised during the period of uncertainty to restore investors' confidence in dealing with their equity and new public offerings. Secondly, all Malaysian listed firms are governed by the same legal, economic and accounting regimes but they were subject to different listing requirements and supervisory monitoring depending on whether they are listed on Main Board of Bursa Malaysia, the Second Board or NASDAQ (now ACE) markets. With less stringent rules and regulation on the second board companies are likely to be more involved in earnings management. However the two boards have now been merged since 3rd August, 2009 but still relevant as the period of existence of the second board covers part of our sample period.

Thirdly the mandatory regulatory requirement that all IPO firms must provide profit forecast in their

prospectus and guarantee of meeting 90% of the forecasted profit for at least three years following the IPO is yet another motivation for earnings management to enable firms to meet the required bench mark. However the profit guarantee was relaxed in 1999 due to unenforceability and outright noncompliance (Wan-Hussin, 2006) but the profit forecast requirement remained enforced until 2008. In addition there is also provision for three-year share moratorium (share lockup). This is a fertile regulatory hook that may compel IPO companies to manage earnings. Malaysia is therefore a tempting ground for academic research in IPO and earnings management due to its unique corporate settings.

Malaysia corporate environment have recently witnessed the tightening of regulations, the mandatory requirement to provide profit forecast in IPO prospectus, profit guarantee is now abolished, share moratorium now extended to both Main and ACE markets, merging of the Main Board with the Second Board into a single unified board called the Main Market (thereby strengthening and tightening listing requirements), the transforming of the Malaysian Exchange of Securities Dealing and Automated Quotation (MESDAQ) Market to Access, Certainty And Efficiency (ACE) Market, Corporate Governance reforms (CG reforms), introduction of accounting standards etc., all these are tighter regulatory initiatives introduced to curb earnings management discretionary behaviour and ensure the Malaysian capital market remain an attractive platform for local and foreign companies (Bank Negara annual report 2010 and Economic Report, 2009/2010).

That said, given the increasing interest in earnings management practices, recent research finds evidence that stronger regulation has a direct impact on managers' tendency to choose between real or accrual earnings discretionary behaviour. Ewert and Wagenhofer (2005) provide evidence that the level of real earnings discretionary behaviour increases after accounting standards are strengthened. The evidence of Ewert & Wagenhofer, (2005) was further re-enforced by Cohen & Zarowin, (2008). They investigated the effect of the 2002 Sarbanes-Oxley Act (SOX) on earnings management practices and documented that United States companies switch from accrual-discretionary behaviour pre-SOX, to real activity discretionary behaviour post-SOX. This evidence suggests that more stringent regulation mitigates accrual-based earnings management leading to greater use of real earnings discretionary behaviour. It is therefore tempting to believe that Malaysian IPO firms must have switched over from accrual to real activity manipulation which partly accounts for the inconsistent research findings in the few studies on accrual management notably, Abdul- Rahman et al. (2005), Rahman & Ali, (2006) and Ahmed-Zaluki et al. (2011). While the former study, confirms pre IPO earnings management but could not find any evidence of earnings management in the post IPO period. The later study even though provided evidence of income increasing earnings management discretionary behaviour during the IPO but was only pervasive during the 1997/98 financial crises. Both studies did not examine real activity discretionary behaviour thereby creating a literature gap.

In the high concentrated and closely held ownership environment like Malaysia, ownership control may be an important issue. Concerns about retaining post-IPO control suggest a potential positive relationship between earnings management and retained ownership. Although Leyland & Pyle (1977) was one of the earliest studies on ownership retention which was further developed to include earnings management in a multivariate model developed by Fan (2007). These studies never investigated real activity discretionary behaviour. In the Malaysia the only study on the associated between earnings management and ownership retention by Ahmed Zaluki et al (2011) was based on accrual as the only earnings management proxy thereby creating a further literature gap

Fields, et.al. (2001), provided evidence that investigating only accrual or real earnings management technique individually rather than contemporaneously cannot give a clear cumulative impact of earnings management discretionary behaviour. In particular, if managers use real activities manipulation and accrual-based earnings management as substitutes for each other, examining either type of earnings management activities in isolation cannot lead to definitive conclusions. Furthermore studies on management earning forecast in IPO firms' prospectus in Malaysia (which was a mandatory requirement up to August 2008) continue to report earnings forecast errors e.g. (Jelic, Saadouni, & Briston, (2001), 24.38%, 1998, (33.37%); Ismail & Weetman, (2007), reports -14.12%, Securities Commission, 2005, reports that 72% of companies reported deviations exceeding 20% while Ahmad-Zaluki & Wan-Hussin, (2010), reported -+10% etc., which is an indication that Malaysian IPOs firms still engage in EM practices contrary to existing research evidence based on accrual manipulation. This further provides support that perhaps Malaysian IPOs have resorted to real activity manipulation due to tightening of regulations instead of accrual manipulation to avoid detection by auditors and regulators. Despite increasing significance of companies earnings management discretionary behaviour, there appears to be no studies in the Malaysian emerging market that examined the direction, magnitude and nature of real activity manipulation and accrual-based earnings management contemporaneously in the context of the initial public offering corporate event. This paper therefore, is intended to fill in this research deficiency.

1.2 Motivation

From the various earnings management incentives in Malaysian IPOs enumerated above it is tempting for

managers to utilise incentives depending on the period around the IPO. Secondly, the competing and opposing issues are that, IPO issuers (shareholders) are inclined to take actions that will increase their share issue price before the IPO to increase their gains as well as the value of the company. Thirdly, the incentives are constrained by the capital market scrutiny through auditors, regulators, and analysts in the period around IPO. These notwithstanding, shareholders want to increase post IPO stock price in order to increase the value of their shares after the share moratorium period to maximize their wealth. Insiders therefore have interest in opportunistically using accounting discretion around IPO.

Furthermore, in setting the share price, earnings are given prominence and seen as the most important and in many instances as the only valuable accounting item in prior literature in both real and accrual management studies (see Gunny, 2010, Roychowdhury 2006, Cohen & Zarowin, (2010), Teoh, et.al. 1998b). Contrary to this general believe, Guo, et.al. (2005), asserts that individual accounting items are value relevant and not just as a means to an end for higher earnings. In essence the individual accounting items can be influenced by real activities management. For instance in finance literature, selling, general and administrative expenses (SG&A) is perceived as an investment for future benefits and growth of the firm rather than seen as an increase in discretionary expenses purely from accounting perspective. Similarly research and development (R&D) in some industries like pharmaceutical is for future revenue growth and profit. These accounting line items are valued by investors for their own sake rather than their impact on earnings. Companies differ depending on investment strategy, profitability, or growth prospects. Therefore, investors value accounting items that are specific to the company, for instance while managers and investors in profitable firms prefer high income, loss companies have to demonstrate their net worth through sales.

Consequently, as earlier pointed out, study by Graham et.al.(2005) confirms that due to greater scrutiny managers prefer real earnings management (REM) over accruals-based earnings management (AEM), because these techniques are less likely to be detected by regulators, analysts, or auditors. In summary, the more the scrutiny, the stronger the motivation for using real activity management instead of accrual management as confirmed in the study by Cohen and Zarowin (2010). Pronounced scrutiny is present around IPO and prior literature usually does not test for REM around IPOs, but this is essential since AEM and REM can be used as substitutes and not coercively as complements (Cohen and Zarowin 2010, Cohen & Zarowin, 2008, and Zang, 2012). Therefore, a closer look at different operating figures should give deeper insight into the discretion of companies going public.

In the years around IPOs there are apparent dissimilarities between companies in different business sectors. Usually, studies of earnings management combine various industries in one sample. However, they differ in having distinct company characteristics like age, leverage, capitalization, industry etc. Hence, the incentives of companies and the corresponding financial reporting goals are not only different but sometimes diametrically opposed to each other. Taking all these perspectives into consideration can clarify the opacity of incentives and resulting earnings management around IPOs. While prior literature has already addressed many specific issues, there are some aspects that deserve further attention especially in emerging markets. The finance and accounting literature rarely differentiates between different incentives around the issue and interests of issuers in various industries concerning accounting numbers or line accounting items. This study intends to close that literature deficiency by examining the association between ownership retention (a unique feature IPO in Malaysia) and earnings management around the time of IPOs in Malaysian emerging market. The paper provides new evidence and insights about the discretionary behaviour around the IPO when different incentives are present. Additionally, our examination of real activity discretionary behaviour helps to distinguish between the results of prior research where contradictory outcomes exist based on accrual methodology in the Malaysian emerging market. Hence, the awareness of capital market participants can be enhanced and information asymmetry reduced. The outcome provides academics, investors, analysts, and regulators with a better understanding of discretionary behaviour around IPO event. This paper is divided into five sections: first is the introduction as above, the second section reviews the literature and section three is the methodology. Findings and discussions are in section four and section five reports the conclusions and recommendations.

2 Hypotheses Development

There are some few studies that investigated earnings management in Malaysian IPOs. These include Ahmed-Zaluki et.al. (2011) which confirms evidence of pervasive earnings management only during the Asian economic crises and Abdul Rahman and Wan Abdullah (2005) that confirms evidence of earnings management before public listing but found no relationship between prior earnings management and post issue stock performance. These studies used accrual earnings management strategy as a proxy for earnings management. However accrual earnings management discretionary behaviour is only one aspect of measuring discretionary behaviour. Real earnings manipulation which is capable of providing explanation of specific discretionary behaviour in real aspect was never investigated. Roychowdhury (2006) is one of the first studies to examine real activity discretionary behaviour and focuses on real activity management with regards to meeting certain earnings bench

mark. The study provided evidence that firms try to avoid losses through sales management, employing overproduction to lower cost of goods sold (COGS), and reducing discretionary expenses to improve their profit. Three empirical methods to detect real activities were developed. The first is a model for the normal level of operating cash flow. The abnormal amount should indicate sales management by price discounts. The second model includes production costs, and the third, tests for abnormal discretionary expenses. These three aggregate accounting items were used as the only indicators of discretionary behaviour without looking at the individual components of the aggregate measures. Furthermore the study focuses on earnings for its own sake while other accounting items are only a means to an end. In other words, the purpose of real activities is to influence earnings, usually in the upward direction. Nevertheless, an interesting aspect is the fact that investors do not merely focus on earnings around IPOs, but include additional financial items for valuation purposes. More precisely, real activities influence certain line items other than earnings. For instance certain expense accounts serve as a signal of future benefit for loss firms and are considered important by investors particularly in an IPO setting. Another interesting aspect is that Roychowdhury (2006) controls for industry differences as well as growth of firms and identifies both of them as influencing variables. However, using a cross-sectional overall sample as a mixed industry approach does not examine differences in specific industries nor does it include changes of items after the specific corporate event. In addition, focusing on earnings as the outcome of the three measures would neglect effects of other accounting items on capital market participants around IPOs.

Gunny (2010) examines accruals earnings management discretionary behaviour and real activities management with respect to influence on future performance concerning earnings benchmarks. The study adds selling, general and administrative expenses (SG&A) and gain on asset sales as additional measures of real activities. It also introduces expected direction of discretionary behaviour in certain accounting items like research and development (R&D) and provided evidence that companies just meeting earnings benchmarks reduce R&D and SG&A to increase income, lower prices to inflate sales, and overproduce to decrease cost of goods sold (COGS). Here again as in Roychowdhury (2006), the focus of discretionary behaviour rests on the resulting earnings. In an IPO environment, this neglects the fact that real activity measures could have a value by themselves for capital market participants. For instance as mentioned earlier if an organization have history of innovation through successful product development as a result of R&D activities, increase in research and development expense is a positive signal to investors instead of categorizing it as a mere expense account. Then, it would no longer be a means to an end but valuable in itself. This is similarly true for SG&A which is seen as an investment in growth and future profitability in the financial manager's perspective.

Cohen and Zarowin (2010) adopted a multi-dimensional approach. They examine accrual-based and real activity management at seasoned equity offerings (SEO). The study employed the three measures of Roychowdhury (2006) plus discretionary accruals. They find that firms engage in accruals as well as real activities management. The usage of these measures depends on the associated costs. The authors contribute to the discovery of a combination of accruals and real activity management at seasoned equity offering (SEO) with varying magnitude and time. Assessing SEOs and associated incentives is valuable since capital market events give good insights for researchers and practitioners. Similar to Roychowdhury (2006), the emphases is on earnings as a means to an end. Overall, it remains an empirical question whether discretionary behaviour in several line items is present around IPOs setting and differs over time as well as by industries. Given the seemingly limited research examining earnings management practices contemporaneously (real and accrual) in Malaysia and in accordance with prior-research on multiple earnings management practices we shall investigate empirically whether Malaysian IPO firms engage in real and accrual earnings management practices and therefore hypothesize that:

H1: *IPO firms in Malaysia engage in both real and accrual earnings management practices around IPO period.*
H1b: *There is a significance difference between earnings management proxies among the industrial sectors in terms of nature, direction and quantum.*

2.1 Ownership Retention

In the high concentrated and closely held ownership environment like Malaysia, ownership control may be an important issue. Concerns about retaining post-IPO control suggest a potential positive relationship between earnings management and retained ownership. While control retention is generally an important issue in IPO decisions (Brau and Fawcett, 2006 and Alavi et al., 2008), it is particularly likely that, in a closely held ownership environment such as Malaysia, pre-IPO owners are concerned about the potential loss of control following the partial transfer of ownership (Nagata & Hachiya, 2006 and Leuz, et al. 2003). One way to alleviate such concerns is to allocate shares to many small investors through underpricing, thereby reducing both the threat of takeover and the monitoring by large block holders (Ahmed-Zaluki et al 2011). Companies in which post-IPO retained ownership is relatively low are likely to be more concerned about loss of control and outside monitoring. Hence, they are more likely to manage earnings conservatively to reduce the IPO offer price; ensure a high initial return and oversubscription, to enable greater share allocation to smaller investors. This implies a

positive relationship between earnings management and retained ownership. Evidence of large-scale underpricing in Malaysia as reported in Jelic, et al. (2001) is consistent with this argument. The competing earnings management incentives in Malaysian context make it complex and difficult to predict the relationship between earnings management and retained ownership. We therefore hypothesize that:
H2 There is a systematic relationship between ownership retention and real and accrual earnings management practices in Malaysian IPO firms.

3 Methodology

The sample consists of 476 companies that made an IPO and subsequently listed on Bursa Malaysia during the period 2002 to 2013. This period is devoid of any cofounding effects of the Asian financial crises of 1997/98. In addition the deregulation and liberalisation of Malaysian stock exchange took place during this period. For IPO Company to be selected into the sample, it must satisfy the following conditions: The offer should involve ordinary shares only, preference shares, debentures and loan stocks were excluded; listings through introduction were also excluded. The company must be listed on the Main Board, the Second Board or MESDAQ (ACE) markets of Bursa Malaysia and availability of financial data on Standard and Poor (S&P), Capital IQ data base from 2002-2013. This is the period when all listed companies on Bursa Malaysia started mandatory adoption of the Malaysian corporate governance code (MCGC) provisions in their annual reports. Companies from the Finance, Trust, or Closed-End Funds sector which are regulated through the Banking and Financial Institutions act 1989 were excluded because they have different statutory requirements in preparing companies annual reports and disclosure rules. Finally companies with change in financial year were also excluded. Since our analysis is going to cover the three years share moratorium period and at least two years post share moratorium period we need at least five years financial statement to analyse the data. Our analysis will therefore cover the period 2002-2009. After the screening exercise the final sample that met the criteria stood at 253 IPO firms. However for ownership data the sample was further reduced to 221 due to lack of ownership data.

3.1 Measuring accrual and real earnings management (AEM)

In accordance with the trend in previous earnings management studies, the Dechow et al., (1995) Jones cross-sectional modified model will be used to calculate accrual discretionary behaviour (DuChame et al. 2001, 2004, Roosenboom et al. 2003, Teoh et al. 1998 and Ahmed- Zaluki et al. 2011).Details of these calculations are in Appendix.A1-A1.5. To measure real earnings the Dechow et.al (1998) models employed in previous studies were adopted. These include: abnormal cash flow from operations (CFO), abnormal discretionary expenses and its individual accounting items namely: abnormal selling, general and administrative expenses, research and development and advertising. Thirdly are the abnormal production cost and its components viz: abnormal cost of goods sold and abnormal change in inventory. Previous studies, Zang (2012) and Gunny (2006), support the evidence of the construct validity of the models and their proxies. These models and proxies were also applied by, Roychowdhury (2006), Cohen and Zarowin, (2010), and, Zang (2012). The details of the models adopted are as detailed in Appendix: A2 (A2.1-A2.4)

3.2 Real and Accrual Earnings and Ownership Retention

To test the relationship between real and accrual earnings management and Ownership Retention the following regression equation is used:

$$EM_{i,t}=\alpha_0 + \alpha_1 RTOWN+\alpha_2 AGE + \alpha_3 LEV+\alpha_4 SIZE + \alpha_5 CAPGRWTH + \alpha_6 AUDT+\in_i$$

To actually test whether earnings management behaviour is different in various settings firm specific characteristics found from previous studies to impact on real and accrual discretionary behaviour were controlled. These factors include: age, auditors, leverage, sizes, and capital expenditure growth (Ahmad-Zaluki, et al. 2011).

Table 1.1 Variable Measurement

Variables	Measurement/Operationalization	Sign
Independent Ownership Retention (RTOWN) as in Fan (2007)	Percentage of shares retained by insiders (original owners) after the IPO. Measured by $\alpha = \frac{N_{before} - N_{secondary}}{N_{after}}$, where N_{before} = total number of shares outstanding before the offering N_{after} = total number of share outstanding after the offering $N_{secondary=}$ total number of sharesoffered during the offering average	+tive/ -tive
Dependent Variables Earnings Management measures (EM)	(1) Discretionary Accrual (AEM) (modified Jones model as in Dechow, Sloan and Sweeney 1995) (2) Real Earnings (REM): (as applied in Roychowdhury 2006, Cohen et al 2010, and Zang 2012) (a) abnormal cash flow from operations (sales) (b)abnormal discretionary expenses (R&D,SG&A,Adverts) (c)Production cost (a +b+c= Aggregate REM)	Positive Negative
Control Variables AUDITOR	dummy variable = 1 if auditor is Big 5 (Arthur Andersen, Deloittes, Ernst and Young, KPMG, Pricewaterhouse Coopers, or their pre-merger equivalents) and zero otherwise;	- negative
LEVERAGE:	total borrowings as a percentage of total assets, at the time of the IPO;	- negative
SIZE (SIZE)	Measured as the natural log of assets to control for size effect	-/+
AGE	Measured as the natural log of 1+IPO firm age	
Capital Expenditure Growth (CapGWTH	Capital expenditure during the IPO Year minus Capital expenditure in the previous year scaled by total assets	- negative

4 Findings and Discussion

We shall start our analysis of discretionary behaviour around IPO with descriptive statistics for the whole sample.

Table 1.2 Descriptive Statistics for the Whole Sample

EM	Mean	Median	T.-test	p	S.D	Minimum	Maximum
DA	0.29**	-0.01	2.175	.030	4.33	-18.95	34.47
DCFO	-0.03	0.01	-1.031	.303	1.03	-5.98	4.92
DSGA	0.06***	0.02	3.129	.002	0.59	-2.66	3.49
DCOGS	2.75***	0.06	6.286	.000	14.34	-1.84	131.93
DINVT	0.02**	0.01	2.504	.012	0.27	-1.99	1.63
DPROD	2.12***	0.41	8.023	.000	8.17	-7.52	66.92
DDISEXP	0.38***	0.11	10.543	.000	1.12	-0.08	9.12
REM	1.64***	0.19	6.902	.000	7.33	-10.78	59.20

Notes: All the discretionary earnings management proxies are winsorized at1% and 99% to avoid the influence of outliers. DA=Abnormal discretionary accruals, DCFO= Abnormal cash flow from operations, DSGA= Abnormal selling, general administrative expenses, DCOGS= Abnormal cost of goods sold, DINVT= Abnormal change in inventory, DPROD= Abnormal production cost, DISCEXP=Abnormal discretionary expenses, REM= Aggregate real earnings management.

From Table 1.2, the results of T-test for all earnings management discretionary proxies indicates a

significant result (p-values = < 0.05) at 1% level except for: (DCFO t=-1.031 p= 0.303). This is prima per se evidence that Malaysian IPO firms manage their earnings using both real and accrual earnings management discretionary behaviour which is consistent with the findings in Cohen and Zarowin (2010), Zang (2012) and (Graham et. al. 2005). However from the above table the median values for discretionary accrual was negative (-0.01) while all the real activity proxies have positive medians. Perhaps due to tightening of regulations and in order to escape detection by regulators, managers might have reverted to real earnings management and this might explain the income decreasing accrual earnings management discretionary behaviour.

Table 1.3 is the descriptive statistics of various accounting items in the post IPO period according to industries. The mean discretionary (abnormal) figures for the various earnings management proxies are the means and percentages after dividing by total lagged assets to give meaning to the figures and allow comparison between various industries to determine the earnings management quantum and direction. The distribution of discretionary behaviour in terms of magnitude across the sectors is quite revealing. The mean total accruals for the material (-1692), information technology (-0.7), and telecommunication services (-366) sectors are all negative while the rest of the sectors have positive mean total accrual

Table 1.3: Descriptive Statistics of the Sampled IPO Companies According to Industrial Sectors

Variable	Energy	Mat.	Indust.	Con. Step	Con. Disc.	Health-Care	Inf. Tech.	Telecom. services
TACC.	32	-1692	25	9.33	3	6	-0.7	-366
TASSETS	501	270	398	250	269	166	91	8100
REVENUE	372	1232	156	170	234	135	97	4555
%REVENUE	74	456	39	68	87	81	107	56
DA	2.03	0.42	0.53	-0.27	-0.12	-0.09	0.31	-1.26
%DA	0.41	0.16	0.13	-0.17	-0.03	-0.05	0.34	-0.01
DCFO	-0.28	0.11	0.08**	-0.07	0.21**	0.31**	-0.31**	0.40
%DCFO	-0.06	0.04	0.02	-0.09	0.07	0.19	-0.33	0.20
DSGA	-0.03	0.18**	-0.07**	0.04	-0.02	0.04	0.15**	-0.05
%DSGA	-0.01	0.07	-0.02	0.07	-0.04	0.02	0.16	0.00
DISCEXP	0.54	0.16	0.27	0.20	0.38	0.42**	0.52**	6.02**
%DISCEXP	0.11	0.06	0.07	0.06	0.12	0.25	0.46	0.08
DCOGS	2.31	4.17**	2.28**	2.66**	0.60	0.81	2.30	26.08
%DCOGS	0.46	1.54	0.57	1.12	0.59	0.49	2.57	0.22
DINVT	0.01	0.04	0.04	0.01	0.02	0.1	-0.01	0.14
%DINVT	0.00	0.01	0.01	0.00	0.01	0.06	-0.01	0.00
DPROD	1.38	2.80	3.00**	0.71	0.75	0.76	1.88	13.55
%D PROD	0.28	1.04	0.75	0.27	0.28	0.46	1.80	0.18
REM	0.96**	2.41**	2.62**	0.74	0.2	-0.01	1.50	4.40
%REM	0.19	0.89	0.66	0.53	0.07	-0.01	1.57	0.06

Notes: Total assets (TASSETS), and Revenue are average amounts in million RM in the post IPO period. The percentages of discretionary variables are percentages of total assets in respective industries to control for size and give meaning to magnitude of discretionary behaviour. All other variables are as previously defined.

In terms of quantum and direction of abnormal accrual discretionary behaviour, Energy (+2.03, %DA 0.41), Industrial (+0.53, %DA 0.13), Materials (+0.42, %DA 0.16) and Information technology (+0.31, %DA 0.34) sectors dominates other sectors in terms of income increasing positive accruals. On the other hand Consumer Staple, Consumer Discretionary, Health care and telecommunication services sectors have negative accruals or income decreasing abnormal accrual discretionary behaviour.

It is quite revealing that the entire sectors are engaged in positive or income increasing real activity discretionary behaviour with the telecommunication services sector having the highest aggregate real activity management (REM 4.77, %REM 0.06), Industrial (REM2.62, %REM0.66), Material (REM2.41, %REM 0.89), and Information Technology (REM 1.43, %REM 1.57). Similarly all the other sectors have positive aggregate real activity discretionary behaviour except the Health care sector. It is quite revealing that the health sector has a negative (REM -0.01, %REM -0.1), which seems to suggest earnings management discretion is on the decline in the sector. Perhaps due to increased surveillance of regulatory agencies on these sectors they have now engaged more in real activity discretionary behaviour. The prevalence of foreign and institutional investors in the sector may also be a contributory factor.

On the basis of individual accounting items, discretionary cost of goods sold (COGS) is very high and positive across industries emphasizing its importance as an accounting item on its own right and not just restricted to the manufacturing sector. However the combined measure of discretionary abnormal production DPROD is positive and high in Industrial, Material, Energy, and telecommunications services sectors but very low in consumer staple and consumer discretionary, which is expected since these sectors are not engaged in manufacturing. The ambiguity on the relevance of abnormal production beyond manufacturing sector is based on the fact that price discounts and overproduction can both account for discretionary abnormal high production cost in relation to sales. Price discounts can be offered by both manufacturing and non-manufacturing firms to

boost sales revenue and in this respect abnormal production cost is applicable to non-manufacturing firms but admittedly overproduction is only peculiar to manufacturing concerns and that explains why abnormal production cost is higher in industrial, material and energy sectors. Secondly high stock of inventories and receivables are correlated positively with the ability of managers to engage in real activity behaviour that could lead to high discretionary abnormal production cost (Roychowdhury 2006).

From the above table also discretionary change in inventory another component of production cost that is more applicable to the manufacturing is negative in Information Technology sector and infinitesimal in other sectors (which are non- inventory carrying sectors) except in industrial and material sectors. Selling general and administrative expenses (SG&A) are high and positive in Material, Consumer Staple and information technology sectors. This is not surprising because these are high growth sectors in Malaysia and it is believed in finance literature that SG&A expenditure is an investment in growth since it implies future revenue even though the accounting literature believes companies reduce SG&A to improve earnings and cash flow to influence investors (Gunny 2010). However the SG&A in the Industrial, Consumer Discretionary and Energy sectors is negative. This is quite intuitive because the aggregate discretionary expenses (DISCEXP) of which SG&A is a part is high and positive in all sectors which further justify examination of individual discretionary accounting items. The telecommunication services exercise the highest discretionary behaviour using discretionary expenses (DISEXP 6.25, %DISCEXP 0.08) and all other sectors are equally engaged in increasing real activity behaviour using this accounting item.

4.1 Magnitudes, Nature and Direction of Earnings Management

Table 1.4 presents the time series profile of median and mean values of real and accrual earnings management proxies around IPO for the period +1 to +5 in the year of the IPO. The results indicate significant positive mean discretionary accruals in the IPO year +1 and +2 which is consistent with income increasing accrual earnings management taking advantage of the IPO year.

Table 1.4 IPO Yearly Distribution of Accrual and Real Earnings Management Proxies

Year	1	2	3	4	5
Discretionary Accruals (DA),					
Median	0.04	0.01	-0.02	-0.03	-0.02**
Mean	1.69***	0.03	-0.20**	-0.11**	-0.04**
Abnormal Cash Flow From Operations (DCFO)					
Median	-0.01	0.01	0.01	0.01	0.01
Mean	-0.01	-0.12	0.03	0.03	-0.08
Abnormal SG&A					
Median	0.01	0.11***	0.02***	0.03***	0.03
Mean	0.03	0.05	0.03	0.06	0.01
Abnormal Cost of Goods Sold(COGS)					
Median	-0.02	-0.01	0.01	0.17	0.07
Mean	2.50	2.88	1.58	3.51***	3.28
Abnormal Inventory (DINVT)					
Median	0.01	0.01	0.01	0.01	-0.01
Mean	0.02	0.03	0.02	0.02	0.02
Abnormal Production(DPROD)					
Median	0.29	0.32	0.49**	0.49	0.39
Mean	1.72	2.21	1.93***	2.70***	1.99
Abnormal Discretionary Expenses (DISCEXP					
Median	0.09	0.01	0.12**	0.15	0.11
Mean	0.33	0.37	0.29**	0.55***	0.36
Aggregate Real Earnings Management (REM)					
Median	0.14	0.15	0.28	0.22	0.19
Mean	1.31	1.65	1.47	2.08**	1.69

Notes: Differences in means are tested using Mann-Whitney U, test and differences in medians are tested using Kruskal-Wallis median Test. To avoid undue influence of outliers all continues financial data and the discretionary earnings management proxies are winsorized at 1% and 99%. ** Significant at p< 0.05 level (2-tailed).*** Significant at p< 0.01 level (2-tailed).* Significant at p< 0.10 level (2-tailed)

It is tempting to believe that the intention is to influence IPO pricing in the IPO year (+1) and the discretion may as well extend to post IPO pricing. The negative coefficient immediately after the IPO in year +3 through to year +5 indicate income decreasing accrual based earnings management which may be as a result of reversal of accruals and intensity of regulatory surveillance. It could be recalled that the Malaysian corporate

governance reporting requirements became mandatory for listed companies on Bursa Malaysia in 2002. Another reason may be due to accrual reversals as mentioned earlier. On the other hand, there is increasing significant real activity from the IPO year +1 up to year +5 which is an indication that IPO firms utilise both accrual and real activity discretionary behaviour around the IPO period and there is also some evidence of trade-off between accrual and real activity discretionary One of the possible reasons for reversion to real activity management in year +3 to +5 may be that managers are eager to meet the earnings forecasts requirement in the prospectus of at least 90% of forecasted amount up to two years following the IPO. This is a unique mandatory requirement in Malaysian environment until 2008 when it was abolished. These findings are in tandem with the findings of Zaluki-Ahmed et al. (2011) that accruals reverse three years beyond the IPO year. Earlier studies (Abdulrahman and Wan- Abdullah 2005, Morsfield and Tan 2006, Fan 2007, Roosenboom et al. 2003) and the pioneer studies of Teoh et al. (1998a) and Friedlan (1994) find evidence that IPO firm manage earnings upwards using accrual based earnings management before and after the IPO year. This however, is in sharp contrast with the findings of Ball and Shivakumar (2008) that IPO firms report conservatively around the IPO event to escape scrutiny by regulators.

Furthermore the significant positive coefficient in abnormal production and aggregate real earnings management is consistent with real earnings management discretionary behaviour. In year +1 through to year +4 there is evidence of significant and positive coefficients of real activity management. This shows that Malaysian IPO firms pervasively engage in real activity management during and after the IPO period. This is a prima per se evidence that IPO firms have reverted to real activity management in line with findings in previous studies (Graham et al 2005, Cohen and Zarowin 2010, Zang 2013, and Roychowdhury 2006). There is however a decline in real activity management four years after the IPO corporate event even though the median values remain positive and significant. This again is in sharp contrast with the findings of Zaluki-Ahmed et al. (2011) that no evidence of pervasive earnings management was found in the post IPO period which is not surprising since real activity discretionary behaviour was not investigated. In the year +4, there was a decline in the real and accrual discretionary behaviour which may be because o reduced incentives of major shareholders and insiders to engage in earnings management discretionary behaviour due to expiration of the share moratorium period.

4.2 Distribution of earnings management proxies by year of listing

To further investigate hypothesis H1a that Malaysian IPO firms are involved in accrual and real earnings management discretionary behaviour during the IPO corporate event, Table1. 6 is the distribution of earnings management proxies by year of listing for the 12 years sample period (2002-2013). Since the proxies have been winsorized to remove the effect of extreme values and outliers the mean values are used to draw inferences. The results of Kruskal Wallis test of equality of means for the whole sampled years shows: (DA H[1] (11) = 16.91 p = 0.11, DCFO H (11) = 24.58 p = 0.011, DSGA H (11) =34.87 p = 0.000, DCOGS H (11) = 20.22 p = 0.043, DPROD H (11) = 22.770 p = 0.019, DISCEXP H (11) = 20.210 p = 0.0425. These indicate there is significant difference in accrual and real earnings management discretionary behaviour over the years

Table 1 5: Discretionary behaviour in quantum nature and direction based on year of listing

	2002		2003		2004		2005		2006		2007	
Proxy	**Mean**	**median**	**mean**	**median**	**Mean**	**median**	**mean**	**median**	**mean**	**median**	**mean**	**Median**
DA	2.54	0.02	1.13	0.06	1.33	0.13	0.06	-0.02	0.00	-0.04	0.07	-0.02
DCFO	-0.15	0.01	0.04	0.00	-0.06	0.00	-0.11	0.00	-0.02	0.00	0.01	0.01
DSGA	-0.02	0.01	0.11	0.01	0.00	0.01	**0.15**[a]	0.03	0.03	0.02	1.11	0.03
DCOGS	0.87	0.03	**3.57**[b]	0.01	0.95	0.10	**2.73**[a]	0.00	1.55	0.02	1.44	-0.02
DINVT	0.05	0.02	-0.01	-0.01	0.00	0.00	0.00	0.01	**0.02**[c]	0.00	**0.04**[a]	0.00
DPROD	-0.05	0.18	1.42	0.28	0.93	0.27	2.17	0.43	1.82	0.28	**1.65**[b]	0.50
DISCEXP	0.22	0.09	0.34	0.07	**2.28**[b]	0.01	0.45	0.11	0.27	0.10	**0.32**[c]	0.10
REM	-0.09	0.18	1.13	0.15	0.71	0.18	**1.66**[c]	0.25	1.53	0.10	1.27	0.33
	2008		**2009**		**2010**		**2011**		**2012**		**2013**	
Proxy	**Mean**	**median**	**mean**	**median**	**Mean**	**media**	**mean**	**median**	**mean**	**median**	**mean**	**Median**
DA	**-.15**[c]	-0.06	**0.27**[c]	-0.04	-0.19	0.05	0.06	-0.01	**-.12**[c]	0.02	0.04	0.03
DCFO	0.00	0.02	**0.04**[c]	0.03	**-.05**[b]	0.06	**0.26**[b]	0.05	**-.46**[c]	0.00	-0.32	0.00
DSGA	0.08	0.04	**.11**[b]	0.03	**0.03**[c]	0.00	**0.21**[a]	-0.03	**-.08**[a]	-0.01	**-.18**[a]	0.00
DCOGS	1.04	0.02	**5.50**[a]	0.16	**6.81**[a]	0.19	**6.60**[a]	0.39	**8.80**[a]	0.32	**3.55**[a]	0.65
DINVT	**0.05**[c]	0.00	0.00	0.00	**0.04**[c]	0.00	0.03	0.00	0.04	0.00	**0.08**[b]	0.00
DPROD	**2.48**[b]	0.40	1.98	0.27	**3.48**[b]	0.62	**5.39**[a]	0.82	**4.55**[a]	0.64	**5.85**[a]	1.13
DISCEX	**0.38**[c]	0.13	**0.64**[c]	0.13	0.45	0.13	**0.36**[b]	0.19	**0.62**[b]	0.15	**0.75**[b]	0.33
REM	**2.07**[a]	0.12	1.18	0.11	**2.19**[b]	0.19	**4.64**[a]	0.41	**3.52**[c]	0.13	**5.43**[b]	1.23

Notes: All the discretionary earnings management proxies are winsorized at1% and 99% to avoid the influence

[1] The test statistic H is calculated as: $H=\frac{12}{N(N-1)}\sum_{i-1}^{k}\frac{R_i^2}{n_i}-3(N+1)$ where R_I is the sum of ranks from each group, N is the sample size and n_i is the sample size of a particular group even though groups may have equal size.

of outliers. DA=Abnormal discretionary accruals, DCFO= Abnormal cash flow from operations, DSGA= Abnormal selling, general administrative expenses, DCOGS= Abnormal cost of goods sold, DINVT= Abnormal change in inventory, DPROD= Abnormal production cost, DISCEXP=Abnormal discretionary expenses, REM= Aggregate real earnings management. [a, b, c]

For us to ascertain the particular years that are significantly different, a follow up was conducted using Mann-Whitney U tests pairwise mean comparison over the years. Effect size[1] is calculated and reported in order to have standardised measure of the size of the effect observed for comparison with previous studies. Mann Whitney U test pairwise comparison of the earnings management proxies based on year of listing from 2002-2013 above indicates that, there is no any significant difference in the mean ranks of the discretionary earnings management proxies as p-value > 0.05 in the period: 2002-2007. There was however a significant difference in 2002 vs. 2007 in DPROD (Mean= 1.65, P= 0.038 U= 1224 Z=-2.079, n=163 and effect size r = -0.16), the mean ranks are: (24, 139) respectively. In 2002 to 2011 there was a significant mean rank difference in DISCEXP, DCFO, and DPROD –real earnings management proxies. The results overall shows there is pervasive real and accrual earnings management discretionary behaviour around the IPO corporate event in Malaysia and the evidence indicate significant difference between the listing years further supporting our earlier findings in support of hypothesis H1. The next section shall investigate hypothesis H1b as to whether there is any significant difference, in the earnings management discretionary proxies by industrial sectors

Overall in accordance with the prediction of our hypothesis H1b, the result suggests there is significant mean difference in earnings management behaviour of IPO firms according to industrial sectors. It is revealing that, there is no significant difference in accrual earnings discretionary behaviour perhaps due to the trade off with real activity management discretionary behaviour. The energy, industrial and material sectors are significantly and positively different from other sectors in aggregate real earning discretionary behaviour. It is however not surprising because these are high growth sectors in Malaysian economy. The abnormal production cost is positively significantly different in the industrial sector which is expected since the sector is engaged in manufacturing. In term of real activity in discretionary expenses the material, consumer discretionary and staple sectors are positively significantly different from other sectors.

5 Real and Accrual Earnings and Ownership Retention

Table 1.6 is the mean retained ownership by the strategic or the original owners is 71% which is similar to other countries like US, 71% (Jain and Kini, 1994) and UK 77% (Keasey and Short, 1997) but lower in than reported in a more recent study in US: (Albring, et al, 2007, 55%), Thailand: (Kim, et al. 2004). Control concern appear to be an important issue in Malaysian concentrated market The average age of Malaysian IPO Company is 11 years which is the same as reported in a similar study by Ahmed –Zaluki et al. (2011) in Malaysia but considerably lower than the 35 years reported in Roosenboom et al (2003) in there study of Dutch firms.

Table 1.6 Descriptive Statistics of Dependent and Independent Variables

	N	Mean	Median	S D	Minimum	Maximum
RTNOWN	221	0.71	0.69	0.99	0	14.8
AGE	221	11.00	8	8.43	0	38
AUDITOR	221	0.42	0	0.49	0	1
CAPGRWTH	221	3.94	0	20.38	-0.96	264.06
LEVERAGE	221	0.59	0.31	2.24	-0.21	26.4
SZE_ASSET	221	305.54	89.2	1438.36	0	17798.1
DA	221	0.13	0	3.12	-32	8.38
DCFO	221	-0.07	0.01	0.88	-10	2.3
DSGA	221	0.07	0.04	0.38	-1.95	1.6
DCOGS	221	2.48	0.27	7.32	-1.05	55.75
DINVT	221	0.02	0	0.13	-0.35	0.98
DPROD	221	2.06	0.58	5.35	-2.37	48.31
DISCEXP	221	0.37	0.15	0.82	-0.03	6.82
REM	221	1.59	0.31	4.68	-4.18	41.7

Notes: All the discretionary earnings management proxies are winsorized at1% and 99% to avoid the influence of outliers.

About 42% of the IPO companies engage the services of reputable auditors. The mean of the accrual earnings discretionary proxy and the abnormal real earnings proxies are all positive except abnormal cash flow from operations which is negative providing evidence of systematic relationship between earnings management

[1] The effect size r is calculated by converting the Z-score into effect size estimate using the following equation following Rosenthal (1991: 19): $r = \frac{z}{\sqrt{N}}$ where z is the z-scores and N is the number of observations.

and ownership retention.

5.1 Correlation Matrix

Table 1.7 is a pairwise correlation matrix of retained ownership, earnings management discretionary proxies and the control variables. The results of the Spearman's correlation indicate retained ownership is negatively correlated to all the earning's management discretionary proxies. Although not statistically significant it indicates that when the level of retained ownership is high, there is low the earnings management discretionary behaviour which seems to support the signalling hypothesis. Similar result is indicated by Pearson's correlation.
For the control variables Age and auditor reputation are positively correlated to the earnings management discretionary proxies (similar to the findings in the Malaysian related study of Ahmed-Zaluki et, al.2011eveng though only accrual earnings was studied) though only abnormal behaviour in inventory (DINVT), abnormal production cost (DPROD), and abnormal cost of goods sold (DCOGS) are statistically significant. Leverage and size are statistically positively related to almost all the real earnings management discretionary proxies and the accrual discretionary proxy. This implies that the higher the size of the firm and leverage the higher the real and accrual discretionary behaviour. These findings are in sharp contrast with the study of Wan-Hussein and Ripain (2003) that smaller firms are engaged more in income smoothing in Malaysia. The study is however in agreement with the pioneer study of Aharony et al. (1993) that earnings management discretionary behaviour is more is in large leverage firms.

Table 1.7 Spearman Below the Diagonal and Pearson Above the Diagonal Correlation Matrix

	RTNOWI	AGE	AUDITOF	CAPGR	LEVER	SZE_ASSI	DA	DCFO	DSGA	DCOGS	DINVT	DPROD	DISCEXP	REM
RTNOWN	1	-0.046	0.043	-0.032	.396**	-0.046	0.001	0.021	0.097	-0.008	-0.12	-0.014	-0.023	-0.02
AGE	0.073	1	.157*	-0.099	-0.059	0.011	0.022	0.126	-0.015	0.046	.230**	0.047	-0.018	0.034
AUDITOR	-0.071	0.119	1	-0.099	-0.029	.154*	0.011	.150*	-0.045	0.047	0.023	0.061	0.083	0.043
CAPGRW	-0.068	0.007	-0.099	1	-0.027	-0.008	-0.004	0.015	0.02	-0.036	-0.047	-0.045	-0.023	-0.045
LEVERAG	.171*	0.127	.153*	-0.128	1	0.004	-0.003	0.039	0.003	-0.01	-0.066	-0.02	-0.014	-0.023
SZE_ASSE	0.02	.168*	.322**	-0.053	.478**	1	-0.005	0.048	-.164*	0.113	-0.021	0.087	.155*	0.074
DA	-0.01	0.079	0.071	0.001	.165*	.253**	1	0.056	0.024	0.089	-.223**	-.173**	0.01	-.159*
DCFO	-0.002	0.115	0.118	-0.051	0.049	.162*	0.116	1	-0.068	-0.044	0.03	-0.094	-0.026	-.147*
DSGA	-0.091	-0.015	-0.045	0.033	-.153*	-0.113	-0.004	-0.115	1	-.139*	-0.081	-.383**	0.111	-.409**
DCOGS	-0.092	-0.002	.142*	-0.026	.383**	.558**	.313**	-0.069	0.017	1	.156*	.480**	.374**	.449**
DINVT	0.1	.176**	-0.014	-0.001	.165*	.239**	0.091	0.065	-0.005	0.073	1	.522**	0.101	.493**
DPROD	-0.021	0.106	.162*	-0.002	.315**	.486**	.327**	-0.063	-0.122	.541**	.306**	1	.387**	.968**
DISCEXP	-0.11	0.057	0.088	-0.017	-0.024	.212**	0.112	0.01	.258**	.458**	0.102	.395**	1	.191**
REM	0.034	0.057	0.117	-0.024	.273**	.375**	.331**	-.236**	-.203**	.445**	.228**	.877**	.154*	1

** Correlation is significant at the 0.01 level (2-tailed), * Correlation is significant at the 0.05 level (2-tailed).

5.2 Multivariate Analysis

To test whether there is a systematic relationship between ownership retention and earnings management practices in Malaysian IPO firms (Hypothesis H4), Table 7.6 is the result of the standard error robust regression.

Table 1.8: Standard Error Regression (Eicker-Huber-White Heterokedestic hc3 Consistent)

	DA	DCFO	DSGA	DCOGS	DINVT	DPROD	DISCEX	REM
RTHOWN	1.053	-.391**	0.165	-0.901	0.017	-2.763**	-0.129	-2.62**
	(-0.720)	(-0.198)	(-0.116)	(-1.968)	(-0.035)	(-1.241)	(-0.147)	(-1.15)
AGE	0.005	0.010	0.002	-0.008	0.003***	-0.012	-0.003	-0.016
	(-0.023)	(-0.007)	(-0.003)	(-0.063)	(-0.001)	(-0.035)	(-0.004)	(-0.032)
AUDITOR	-0.156	.215**	-0.020	1.165	0.004	0.77	0.195	0.407
	(-0.377)	(-0.102)	(-0.051)	(-1.314)	(-0.017)	(-0.712)	(-0.141)	(-0.578)
CAPGWTH	2.9-06	0.002	0.001	-0.020*	-0.001	-0.022**	-0.001	-0.020*
	(-0.004)	(-0.001)	(-0.001)	(-0.012)	(-0.001)	(-0.011)	(-0.001)	(-0.010)
LEVERAGE	0.001	0.022*	-0.007***	0.004	-8.17-05	-0.025	-0.002	-0.030
	(-0.020)	(-0.012)	(-0.002)	(-0.078)	(-0.001)	(-0.026)	(-0.009)	(-0.024)
SIZE_TASS	2.06-05	1.97-1	-4.45-5	0.001	-2.98-06	0.001	6.29E-05	0.001
	(-3.900)	(-2.950)	(-3.14-1)	(-0.001)	(-5.970)	(-0.001)	(-8.540)	(-0.001)
YEAR	-0.111	-0.007	-0.028	0.853**	0.005	0.558**	0.0447	0.424*
	(-0.069)	(-0.026)	(-0.018)	(-0.424)	(-0.005)	(-0.248)	(-0.037)	(-0.219)
SECTOR	-0.174	-.047**	0.034**	-0.127	-0.007	-0.476**	0.0613	-.47***
	(-0.132)	(-0.019)	(-0.014)	(-0.301)	(-0.005)	(-0.184)	(-0.044)	(-0.149)
CONSTANT	223.7	14.99	56.68	-1708**	-10.2	-1,114**	-89.5	-845.8*
	(-138.9)	(-52.12)	(-36.41)	(-849.8)	(-9.468)	(-496.7)	(-74.86)	(-4380)
OBSERVATION	220	220	220	220	220	220	220	220
R-Squared	0.024	0.065	0.096	0.066	0.097	0.098	0.065	0.095

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1; DA=Abnormal discretionary accruals, DCFO= Abnormal cash flow from operations, DSGA= Abnormal selling, general administrative expenses, DCOGS= Abnormal cost of goods sold, DINVT= Abnormal change in inventory, DPROD= Abnormal production cost, DISCEXP=Abnormal discretionary expenses, REM= Aggregate real earnings management. . Each column is the result of regression of the following equation for earnings management proxy named in the relative column:

$$EM_{i,t}=\alpha_0 + \alpha_1 RTOWN+\alpha_2 AGE + \alpha_3 LEV+\alpha_4 SIZE + \alpha_5 CAPGRWTH + \alpha_6 AUDT+\epsilon_i$$

All other variables are as previously defined.

The ownership retention (RTNOWN) is significantly negatively associated with the real earnings management proxies of abnormal discretionary cash flow (DCFO), abnormal production cost (DPROD), and aggregate real earnings (REM) confirming the findings in univariate analysis. This relationship is understandable since real earning discretionary behaviour affects the long run value of the firm strategic retained ownership is likely to constrain it to safeguard the value of their investment. However there is positive association between ownership retention and accrual earnings though not significant which appears to give a weak support for the ownership control concerns of the Malaysian investor over wealth protection and signalling hypothesis. The counter argument may also be that the positive relationship with discretionary accruals is consistent with owners of high quality firms signalling quality through underpricing shares sold at the IPO event even though share moratorium regulation may limit the signalling incentive through ownership retention.Consequently the pre-IPO owners who retain low ownership do forgo the short term wealth as a result of earnings management but ensure high underpricing so that the shares are oversubscribed and by Malaysian regulation this will prevent block holders taking the shares so that many small investors get the allocation. This ultimately reduces takeover threat and monitoring by institutional and other block holders which relieves the fears of low retained ownership (Alavi et. al.2008). Another possible explanation for the underpricing of Malaysian IPOs is that due to fixed pricing system of the Malaysian Capital market it is difficult for the issuers and the investors to determine the true value of the IPOs. This is because not all privately and publically available information is reflected in the IPO at the time the price is fixed (Yong, 2013). Other explanations include the bandwagon hypothesis whereby the IPO underpricing is used by owners to create a demand effect which subsequently results in oversubscription. Yong (2011) explains the band wagon effect as a possible explanation of underpricing. On the whole the relationship between earnings management and ownership retention in Malaysia is not apriori clear thereby confirming hypothesis H2. In the case of the control variables there is negative association between accrual discretionary behaviour and auditors which implies that high quality auditors may constrain accrual discretionary behaviour. This is consistent with previous studies (Zhou and Elder, 2003; Chen et al., 2005). The positive association between auditors and the real activity proxies though not significant is perhaps because real activity discretionary behaviour is hardly detected by auditors.

6 Summary and Conclusion

The descriptive statistics of the earnings management proxies indicates Malaysian IPO firms engage in both accrual and real earning management discretionary behaviour. The descriptive statistics after decomposition of the sample into industrial sectors is quite revealing. In terms of direction magnitude or quantum positive (income increasing) discretionary accruals was highest in the energy, industrial, information technology and material sectors. This is not surprising since these sectors are not subjected to share moratorium regulation. On the other hand negative (income decreasing) discretionary accrual behaviour was highest in the consumer staple, consumer discretionary, healthcare and telecommunication and these industries are in the trade and services sector that are subjected to share moratorium regulation. This justifies the Securities Commission and Bursa Malaysia's reforms in merging the boards and subjecting all IPO firms to share moratorium and the same listing rules and regulations. It is quite revealing that all sectors are engaged in positive real activity discretionary behaviour except the health sector which may be due to foreign participation in that sector. The results support our hypothesis H1 that Malaysian IPO firm are involved in accrual and real earnings discretionary behaviour around the IPO corporate event.

The results, according to year of listing in terms of quantum, nature and direction are quite interesting. The most sluggish period for IPO activities in Malaysia was in 2007-2008 perhaps due to apprehension in international financial market partly due to inflationary pressure arising from the catapulting of global fuel and commodity prices and the global financial crises, thereby slowing down global economy and investment climate. The IPO market in Malaysia appears to have recovered between 2008 through to 2010 for all sectors. The results indicate pervasive positive (income increasing) real activity discretionary behaviour from 2007 upwards and a significant decrease in accrual discretionary behaviour. This may be connected to the adoption of most of the provisions of International Financial Reporting Standard (IFRS) in the Malaysian accounting standards in 2007 (even though it became mandatory in January 2012). Studies have shown the adoption of IFRS have reduced accrual earnings discretionary behaviour (Ball, 2006, Wan Ismail, et,al. 2013). The comparisons of means across the industrial sectors indicate a significant difference in real earnings management discretionary proxies across the industrial sectors thereby giving support to hypothesis H1b. It is recommended that regulatory authorities revisit reporting standards, listing rules, regulations, and corporate governance regulations to constrain real activity discretionary behaviour.

For the ownership retention the pairwise univariate Spearmen's correlation analysis indicates retained ownership is negatively correlated to all the earning's management discretionary proxies. Although not statistically significant it indicates that the higher the retained ownership, the lower the level of earnings management which seems to support the signalling hypothesis. Similar result is indicated by Pearson's correlation. The multivariate analysis confirms a positive association between ownership retention and accrual earnings though not significant which at least lend a weak support to the ownership control concerns of the Malaysian investor over wealth protection and signalling hypothesis. In conclusion, firms in which post-IPO retained ownership is relatively low are likely to be more concerned with loss of control and possible interference from outside monitoring. They are likely to reduce the IPO offer price, ensure a high initial return and oversubscription, to enable greater share allocation to smaller investors to maintain control (Ahmed Zaluki 2011)

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APPENDICES

A1 Steps for Calculating Discretionary Accruals

Step 1: Data was obtained from company financials in S&P Capital IQ data base, on the following: Total Assets (TASSET, Revenue or Sales (REV), Accounts Receivable (AR), Property Plant and Equipment (PPE), Change in inventory (INVT), Change in Revenue (DREV), Cost of Goods Sold (COGS), Selling and General Administrative expenses (SG&A), Research and Development (R&D), and Advertisement, Cash from Operations (CFO) and Return on Assets (ROA).

A1.2 Step 2: Calculation of Total Accruals

Total accruals (TA) are first calculated using the following formula as in Cohen and Zarowin (2008):

$$TA_{it} = EFO_{it} - CFO_{it} \quad (1)$$

Where TA=Total accruals, EFO=Earnings from Operations, CFO=Cash flow from operations

A1.3 Step 3: Calculation of Coefficients estimates

$$\frac{TA_{j,t}}{ASSET_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{ASSET_{it-1}} + \alpha_2 \frac{\Delta SALES_{j,t}}{ASSET_{it-1}} + \alpha_3 \frac{PPE_{it}}{ASSET_{it-1}} + \alpha_4 ROA + \epsilon_{it} \quad (2)$$

$TA_{i,t}$ = total accruals for industry portfolio company i in year t
$ASSET_{it-1}$ = lagged total assets for industry portfolio company i in year t
$\Delta SALES_{it}$ = change in sales for company i in year t
PPE_{it} = gross value of property plant and equipment, for company i in year t;
$ROA_{i\,t}$ = return on assets calculated as earnings before extraordinary items scaled by lagged total assets.
$\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4$ are the coefficients
$\epsilon_{i,t}$ is the error term,variables are divided by lagged total assets to control for heteroscedasticity

A1.4 Step 4: Calculation of Non-Discretionary Accruals

In the next step, nondiscretionary accruals are estimated for each IPO company in the sample and for each year using the fitted coefficients $\hat{\alpha}_0, \hat{\alpha}_1, \hat{\alpha}_2, \hat{\alpha}_3, \widehat{\alpha_4}$ from each annual estimation portfolio.

$$NDA_{i,\,t} = \alpha_0 + \hat{\alpha}_1 \frac{1}{ASSET_{it-1}} + \hat{\alpha}_2 \frac{\Delta SALES_{it} - \Delta REV_{it}}{ASSET_{it-1}} + \hat{\alpha}_3 \frac{PPE_{it}}{ASSET_{it-1}} + \widehat{\alpha_4} ROA_{I,t} \quad (3)$$

Where: $NDA_{i,t}$ =expected non-discretionary accruals for IPO company i in year t;
ΔREV_{it}= change in receivables for IPO company i in year t;
$\hat{\alpha}_1, \hat{\alpha}_2, \hat{\alpha}_3 \widehat{\alpha_4}$ = are coefficients, all others are as previously defined

A1.5 Step 5: Calculate Discretionary Accruals

The resultant discretionary accruals are arrived at as estimated in equation (4):

$$DA_{i,t} = \left[\frac{TA_{i,t}}{ASSET_{i,t-1}}\right] - NDA_{i,t} \quad (4)$$

Where: DAi,t = the estimated discretionary accruals for IPO company i in year t,

For robustness two alternative measures of Discretionary accruals as in Cohen and Zarowin (2010) are tested by using the following alternative regression in the first stage:

$$\frac{TA_{j,t}}{ASSET_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{ASSET_{it-1}} + \alpha_2 \frac{\Delta SALES_{it} - \Delta REV_{it}}{ASSET_{it-1}} + \alpha_3 \frac{PPE_{it}}{ASSET_{it-1}} + \alpha_4 ROA_{I,t} \quad (5)$$

A2 Measurement of Real Earnings Management

A2.1 Abnormal Cash Flow from operations (DCFO)

The normal level of cash flow from operations is calculated using the following cross sectional regression for each industry and year and then for industry subsectors using pre- IPO data:

$$\frac{CFO_{i,t}}{ASSET_{i,t-1)}} = \alpha_0 + \beta_1 \frac{1}{ASSET_{i,t-1)}} + \beta_2 \frac{SALES_{i,t}}{ASSET_{i,t-1)}} + \beta_3 \frac{\Delta SALES_{i,t}}{ASSET_{i,t-1)}} + \epsilon_{i,t} \quad (5)$$

Where $CFO_{i,t}$ = cash flows from operations for company i at year t . The abnormal CFO for IPO firms is calculated as the actual CFO minus the normal level of CFO calculated using the fitted coefficients from equation (5).

Similar to the calculation of accrual earnings management all variables are divided by lagged total assets.

A2.2 Abnormal Discretionary Expenses (DISCEXP)

The normal level of discretionary expenses is calculated as a contemporaneous linear function of sales expressed

as follows:

$$\frac{DISX_{i,t}}{ASSET_{it-1}} = \alpha_0 + \beta_1 \frac{1}{ASSET_{it-1}} + \beta_2 \frac{SALES_{i,t}}{ASSET_{i,t-1}} + \epsilon_{i,t} \quad (6)$$

Where $DISX_{i,t}$ = discretionary expenses and all others variables as previously defined.

According to (Roychowdhury, 2006)Roychowdhury (2006) and (Cohen & Zarowin, 2010)Cohen &Zarowin (2010) calculating normal level of discretionary expenses as indicted in equation (6) above can give rise to inaccurate figure in a situation of increasing sales management by the company in order to inflate earnings during the year. This is because it will give rise to low residuals. To solve the problem, discretionary expenses are calculated as a function of previous year sales. The estimation of normal level of discretionary expenses by Roychowdhury (2006) for the IPO industry company portfolio calculated as follows is therefore adopted:

$$\frac{DISX_{i,t}}{ASSET_{i,t-1}} = \alpha_0 + \beta_1 \frac{1}{ASSET_{it-1}} + \beta_2 \frac{SALES_{i\,t-1}}{ASSET_{it-1}} + \epsilon_{i,t} \quad (7)$$

Where $DISX_{i,t}$ = the sum total of SG&A, R&D, and advertising expenses for company *i* at period *t. , $SALES_{i,t-1}$* = the previous year sales.

Using the estimated fitted coefficients in equation 7, the estimated normal level of discretionary expenses for the IPO sampled company is then calculated and subtracted from the actual discretionary expenses to obtain the abnormal level of discretionary expenses for IPO firms. The same procedure as in Dechow model (1998) is applied to calculate normal and abnormal selling and general expense account (SG&A) as specified in equation 8:

$$\frac{SGA_{it}}{ASSET_{it-1}} = \alpha_t + \beta_{1t} \frac{1}{ASSET_{it-1}} + \beta_{2t} \frac{SALES_{it}}{ASSET_{it-1}} + \epsilon_{it} \quad (8)$$

Where SG&A= selling, general and administrative expenses.

A2.3 Abnormal Production Cost

The third real activity manipulation is through increasing earnings by reducing the cost of goods sold through overproduction of inventory or overproduction to boost sales to through discounts or lenient credit terms. Following Roychowdhury (2006), and Cohen & Zarowin (2010), production costs is arrived at as the sum total of change in inventory plus cost of goods sold. Therefore two models are used to arrive at cost of production. First, change in inventory is estimated using equation 9.

(a) $$\frac{\Delta INV_{it}}{ASSET_{i\,t-1}} = \alpha_0 + \beta_{1t} \frac{1}{ASSET_{i\,t-1}} + \beta_{2t} \frac{\Delta SALES_{i\,t}}{ASSET_{i,t-1}} + \beta_{3t} \frac{\Delta SALES_{i\,t-1}}{ASSET_{i,t-1}} + \epsilon_{it} \quad (9)$$

Secondly, cost of goods sold during the year is estimated as a linear function of contemporaneous sales as specified in the equation 10.

(b) $$\frac{COGS_{it}}{ASSET_{i,t-1}} = \alpha_0 + \beta_{1t} \frac{1}{ASSET_{it}} + \beta_{2t} \frac{SALES_{it}}{ASSET_{i,t-1}} + \epsilon_{it} \quad (10)$$

Using equations 9 and 10 normal level of production cost (a +b) was then estimated as:

$$\frac{PROD_{it}}{AVASSET_{i\,t-1}} = \alpha_{0+} \beta_{1t} \frac{1}{ASSET_{t-1}} + \beta_{2t} \frac{SALES}{ASSET_{t-1}} + \beta_{3t} \frac{\Delta SALES_{i,t}}{ASSET_{i,t-1}} + \beta_{4t} \frac{\Delta SALES_{i,t-1}}{ASSET_{i,t-1}} + \epsilon_t \quad (11)$$

Where $PROD_{i\,t}$ =sum of the cost of goods sold (COGS) +change in investment (ΔINV_{it})

ΔINV_{it} =The Change in inventory from lagged year to current year

ΔSALES= the change in sale from lagged year to current year.

The fitted values of coefficients in equation 11 are used to calculate the normal cost of production. The abnormal level of production costs (*PROD*) is calculated as the difference between actual production cost and normal production cost.

A2.4 Aggregate Real Earnings

Following Cohen et al. (2010) and (Zang, 2012)Zang (2012), aggregate real earnings management discretionary behaviour is calculated as the sum total of three variables constituting real earnings discretionary behaviour, namely: abnormal level of production cost, the abnormal level of discretionary expenses and abnormal level of cash flow from operations. In line with the previous literature the abnormal discretionary expenses and abnormal cash flow from operations are multiply by -1. The essence is that the higher this two proxies are, the more the possibility that the company is engaged in manipulating sales through lowering discretionary expenses (SG&A, R&D, and advertising expenses) and generous discounts. The production cost proxy is not multiplied by -1 since higher production cost infers overproduction which consequently lowers cost of goods sold. In nut shale, the aggregate measure of real earnings discretionary behaviour is the aggregate standardised value of the three real earnings proxies. It must be conceded that the aggregate measures alone may be too parsimonious and give misleading result because each proxy has different consequences and implications for earnings. It is for this reason that the individual proxies and individual line accounting items as well as the aggregate measures are reported.

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