The Impact of Institutional Investors on Real and Accrual Earnings Management around IPO: Evidence from Malaysian Emerging Market

Sani Hussaini Kalgo[1]*, Bany Ariffin Amin Noordin[2], Hairul Suhaimi Bin Nahar[2] & Siti Zaida Binti Turmin[2]

[1]*Putra Business School, University Putra Malaysia, Malaysia*

[2]*Faculty of Economics and Management University Putra Malaysia, Malaysia*

Abstract: The study examines whether Malaysian IPO firms engage in real and accrual earnings management and determines the impact of institutional ownerships on the earnings management discretionary behaviour. The modified Jones (1991) and Roychowdhury (2006) models were used to investigate accrual and real activity behaviours. Institutional ownerships were classified into Conservative and Neutral Pressure Groups. The results indicate Malaysian IPO firms engage in both real and accrual earnings around IPO corporate event. The multivariate analysis shows institutional shareholders constrain real and accrual earnings management which supports the various regulatory reforms by Securities Commission and Bursa Malaysia. The study suggests the need to encourage the Neutral Pressure Group of institutional investors to engage more in shareholders activism in order to safeguard the value of their investments and for investors to examine real activity behaviours in making their investment strategy while standard setters and regulatory agencies need to enforce additional measures to constrain real activity discretionary behaviour.

Keywords: Earnings management, Institutional investors, Initial Public Offering
JEL classification: M41, M43, M410

1. Introduction

Corporate debacle in the last decade has raised concern on the integrity of accounting information at the disposal of investors (Jain Jain and Rezaee 2010). The very foundation of stock market is based on trust which relies on factual and reliable financial information. Financial scandals that have taken root in the global financial sector continue to undermine the faith of investors and to question the integrity of the capital market. One major way in which firms could misrepresent and distort financial information is through discretionary reporting which culminates into earnings management. Healy and Wahlen (1999) asserts that, the management of earnings manifests when managers use discretion in financial reporting to restructure transactions that ultimately distort financial report and mislead stakeholders about the actual firm performance. This action also affects contractual relationships that are based on financial position of the firm.

Finance and accounting literature agrees that management intervention in reporting accounting numbers can either be done through accruals (accrual earnings) or operational decisions (i.e. real earnings management). The impact of such action eventually affects stock prices or returns. Real activities manipulation is defined as management actions that deviate from normal business practices. It is usually undertaken with the main objective of meeting certain earnings benchmark to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations (Roychowdhury 2006). Real earnings management may help in meeting some reporting objectives, affects

* Corresponding author: Sani Hussaini Kalgo, Putra Business School, University Putra Malaysia, 43400 Serdang, Selangor. Email: *sanihkalgo@gmail.com*

cash flows and in some cases accruals but may not contribute to firm value. Some real earnings management methods like price discounts and reduction of discretionary expenditures are perhaps optimal actions in certain economic circumstances. Nevertheless if managers intensively engage in these activities with the aim of archiving or beating an earnings threshold, they are engaged in real activities manipulation (Cohen and Zarowin 2010).

Bruns and Merchant (1990) and Graham *et al.* (2005) assert that managerial executives are more incline to use real earnings rather than accrual earnings management for two reasons. First, accrual earnings management is more likely to draw the attention of auditors or regulatory authorities than real decisions about production and pricing. Second, it is risky to rely on accrual management. This is because realised year-end shortfall between manipulated earnings and the desired threshold can exceed the amount by which it is possible to manipulate accruals. If that happens and reported income falls below the threshold, there may be insufficient time to utilise real earnings management during the rest of the year (Roychowdhury 2006).

Institutions are large investors, who may have fiduciary discretion on others' investments. They have capability, knowledge and resource base to discipline managers and exert control and influence on them (Kim and Firth 2003). Studies indicate a significant relationship between firm value and institutional ownership (Wahal and McConnell 2000). Prior studies have shown (e.g. Koh 2003; Kim and Firth 2003; Mashayekhi and Bazaz 2008) that institutional ownership may constrain earnings management through monitoring earnings management discretionary behaviour of corporate managers. Reduction in real and accrual earnings management may result due to pressure of institutional ownership or realisation of the futility of engaging in earnings management by corporate managers for fear of institutional ownership pricing securities appropriately through unravelling the accounting procedures.

A contrary view sees institutional shareholders role in a different perspectives. The nature and direction of their discretionary behaviour is contingent on their investment strategies. Short term institutional investors who favour immediate gain are known not to constrain earnings management and immediately there is any pernicious earnings management they dispose their shares before it is uncovered. Due to pressure to manage their own earnings, transient institutional investors may pressurise the firm's management to inflate earnings.

Evidence from prior literature has indicated the prevalence of institutional ownership and family-controlled businesses with close ties between controlling owners and managers in Malaysia and most East Asian countries. According to Bany-Ariffin (2010), due to the existence of pyramidal structures in Malaysian corporate environment, controlling shareholders who have cash flow rights (i.e. control divergence), have the incentive and motivation to expropriate minority shareholders. In order to prevent external monitoring mechanism and to cover-up their control benefits, they embark on earnings management practices (Francis *et al.* 2005; Haw *et al.* 2004; Kim and Yi, 2006; Leuz *et al.* 2003).

The main focus in this paper is to examine the impact of institutional ownership on real and accrual earnings management discretionary behaviour contemporaneously in Malaysian IPO firms. Previous studies have shown institutional ownership constitute about 24% shareholdings in the IPO corporate event and although there are some studies on Malaysian corporate environment, most of them are centralised on corporate governance variables and concentrated ownership (Rahman and Ali 2006; Ismail and Rahman 2011; Saleh *et al.* 2009). These studies in addition used accruals as the only earnings management proxy. The only study on the impact of institutional ownership on the earnings management of their portfolio firms was one conducted by Jalil and Rahman (2010) based on accrual earnings discretionary

behaviour which does not give complete picture of the firms' earning management discretionary behaviour (Fields *et al.* 2001). In Malaysian corporate environment there has been tightening of regulations, accounting standard and corporate governance codes. Studies in advanced economies (Cohen and Zarowin 2010; Zang 2012) have provided evidence that firms trade off or switch over from accrual to real earnings management due to tightening of regulations. The trade off becomes necessary to avoid detection by regulatory authorities. These reasons make real earnings management an issue in Malaysian corporate environment.

The Malaysian corporate environment is a tempting ground for academic research in IPO and earnings management due to its unique corporate settings. Earning is a signal device of firm value to investors and management has considerable discretion in reporting earnings. Earning is expected to be utilised to ensure investors' confidence when dealing with their equity and any new public offerings. Malaysian listed firms are governed by the same legal, economic and accounting regimes but have been subjected to different listing requirements and supervisory monitoring depending on whether they are listed on the Main Board of Bursa Malaysia or the Second Board or NASDAQ (now ACE market). With less stringent rules and regulations evident on the Second Board, companies are now likely to be more involved in earnings management. However, the two boards were merged on 3 August 2009 (Yong 2013) which covers part of the current defined study period.

Another unique feature is the mandatory regulatory requirement that all IPO firms must provide a profit forecast in their prospectus and a guarantee to meeting 90% of that forecasted profit for at least three years following the IPO issuance (Wan-Hussin 2005). The profit forecast requirement remained enforced until 2008. There is also provision for a three-year share moratorium (share lockup) which is a fertile regulatory hook that may compel IPO companies to manage earnings precisely.

Earnings management during an IPO event is important because of management incentives to increase earnings to ensure full subscription of the issue at a higher price. This is because the success of the IPO determines managers' compensation and reputation. However investors may be misled into making incorrect decisions based on presumed reported earnings. Further studies have shown that earnings management has implication for resource allocation since earnings have been found to be negatively associated with post issue earnings performance and returns (Teoh *et al.* 1998a&b). In addition, the Malaysian Accounting Standard allows IPO firms the freedom to change accounting principles in the prospectus as long as the financial statements of previous years are restated, thus giving management incentives to engage in opportunistic earnings management (MASB 2003).

This paper appears to be among the few studies that examine the impact of intuitional ownership on real and accrual earnings management discretionary behaviour of their investee firms contemporaneously in the IPO corporate event. From the aforesaid, the IPO event is a convenient avenue for this study because it provides incentives for corporate managers to increase or decrease reported earnings to their desired target. The Malaysian research setting is important because of its unique features like earnings forecast and share moratorium regulation which are incentives for earnings management apart from significant percentage of institutional ownership.

The paper examines whether there is any evidence, systematic or otherwise of institutional shareholders monitoring the use of real and accrual earnings management discretionary behaviour contemporaneously. The emphasis in the paper is on real earnings management which has not been investigated in Malaysia with very scanty studies in South East Asia. The results indicate Malaysian IPO firms engage in both real and accrual earnings management. The presence of institutional shareholders with both short and long term investment strategy constrain real earnings discretionary behaviour and therefore serves as

corporate governance control mechanism. This is not surprising since real earnings affect firm value.

The rest of the paper is organized as follows: Section 2 is the literature review and hypothesis development and Section 3 is the research methodology. Section 4 is the results and discussions while Section 5 is summary and conclusions.

2. Literature Review and Hypothesis Development

2.1 The Malaysian Environment

In Malaysia major institutional shareholders include: Employees Provident Fund (EPF), Lembaga Tabung Angkatan Tentera (LTAT) - the armed forces fund which serves as armed forces superannuation fund, Tabung Haji (TH) - pilgrims fund, Permodalan National Berhad (PNB) - a diversified portfolio company with investment in unit trust, assets and property management and social security organization (SOCSO). These institutions in pursuance of the recommendation of the Finance Committee on Corporate Governance (FCCG) in 2000 became known as the Minority Shareholders Watchdog Group (MSWG). This is a pressure group that is expected to monitor and protect minority shareholders interest among other responsibilities. Other institutional investors include banks, insurance companies, unit trusts, pension funds and government corporations. Previous studies based on accrual discretionary behaviour (Aswadi *et al.* 2008; Chen and Reitenga 2001: Cornet *et al.* 2007) have classified institutional investors into pressure sensitive (banks and insurance companies) and pressure insensitive (unit trusts, state corporations, and pension funds). Jalil and Rahman (2010) added MSWG as another group in the classification. However as confirmed by past studies (Chen and Reitenga 2001), banks and insurance companies who are short term horizon investors may not constrain earnings management due to their interest de clientele. Financial institutions generally operate in a myriad of relationships that make them impotent in constraining corporate misconduct in addition to statutory restrictions on their level of investments. For instance banks are heavily regulated and only a percentage of their share capital is allowed for investment in other non-financial businesses due to liquidity concerns. For the purpose of this study we use only two groups: the cumulative ownership percentage of members of MSWG: (TH, EPF, PNB, SOCSO and LTAT) and the cumulative ownership percentage of banks, insurance companies, unit trusts and pension funds as the second group. The first group (INSTMSWG) being shareholders activists are classified as the “Conservative Group” because they are likely to limit income increasing earnings management due to their long term investment horizon. Their concern is the long term survival of the firm. The second group is classified as “Neutral Pressure Group” due to their interest de clientele and the myriad of business relationships they are unlikely to control or be hostile to their investee firms in order not to mar their business relationships especially when it is costly to do so. This group may not constrain income increasing earnings management behaviour. Other studies have differentiated between the banks and insurance companies on one side as pressure sensitive group and unit trust, public pension funds and other financial institution as pressure sensitive group with conflicting results. However due to concentrated nature of Malaysian corporate structure, the existence of pyramidal structures as mentioned earlier, coupled with a cobweb of inter business relationships, family affiliations and socio-political connections, the distinction may not be necessary.

There are three strands of literature on the impact of intuitional investors in mitigating earnings management discretionary behaviour. First are empirical studies that uphold the institutional shareholders role in mitigating earnings management (DeFond and Jiambalvo 1994; Cheng and Reitenga 2009; Aswadi *et al.* 2008). These studies report negative association between earnings management discretionary behaviour and institutional investors. The second strands are those that support the contingency hypothesis. Bushee (2001) in his

study viewed institutional investors from three perspectives: first are the short term investors with diversified shareholding and turnover. The primary interest of this group is short term profit and is not bothered with long term value of the firm. The study also identified the "quasi-indexers" who are long term investors characterized by buy and hold, low turnover, and long term investment behaviour. The third group comprises of the dedicated institutional investors with low turnover and large portfolio investments in their investee firms. Quasi-indexers and dedicated institutions desire stable income; capital appreciation coupled with enhanced firm value rather than short term gains.

Another strand of literature is the behavioural or relationship hypothesis which is an extension of the contingency hypothesis. These studies (Cornett *et al.* 2007; Hartzell and Starks 2003: Almazan *et al.* 2005), assert that institutions operate under different circumstances in terms of legal environment, investment strategies and conflict of interest between fiduciary responsibility for investment protection and business relationships. Therefore institutional stockholders who have interest de clientele with the investee firm may not constrain earnings management. This is necessary in order not to injure the business relationship especially where it is costly to do so. Institutions that fall into this category, sometimes classified as pressure sensitive investors include banks and insurance companies. The other groups are those institutional investors with no any specific business interest. Their main preoccupation is the fiduciary protection of their clients' funds in the investee firms. These category of institutional investors which include public pension funds, mutual funds, unit trusts and other financial institutions are classified as pressure insensitive (Brickley *et al.* 1988; Almazan *et al.* 2005). These are likely to control and constrain earnings management discretionary behaviour. The findings are in tandem with Malaysian studies (Aswadi *et al.* 2008; Rahman and Ali 2006; Ismail and Rahman 2011) which found evidence that pressure insensitive investors are better monitors and therefore constrain earnings management more than the pressure sensitive investors.

The third strand of literature is the institutional activism hypothesis (David *et al.* 2001; Park *et al.* 2008). These studies assert that institutional activist shareholders are more effective in monitoring their investee firms than financially oriented block holders. In a related study Jalil and Rahman (2010) in their study of 94 firms listed on Bursa Malaysia classified institutional ownership into three groups. The pressure sensitive consisting of Banks and insurance companies, the pressure insensitive composed of unit trusts, pension funds and state institutions and the third group composed of members of Malaysian shareholders watch dog group. They provided evidence that both pressure sensitive and insensitive institutional investors do not constrain earnings management and only members of Malaysian shareholders watch dog group effectively curb earnings management. The study however used discretionary accrual to proxy of earnings management without examining real activity discretionary behaviour.

The existing theories provide competing and alternative predictions about the effects of institutional ownership on earnings management discretionary behaviour. Empirical evidence seems to suggest concentrated ownership structures have adverse impact on reporting incentives and the firm's information environment, which leads to increased information asymmetry giving rise to more earnings management and low level of disclosure (Fan and Wong 2002; Hope 2003). From the empirical review of literature above the impact of institutional ownership on earnings management discretionary behaviour is contingent on the investment strategy. Short-term institutional holders do not mitigate earnings management discretionary behaviour while long term investors constrain earnings management discretionary behaviour.

The non-directional relation between institutional ownership and earnings management becomes an empirical question. It is therefore hypothesized that:

H1: Malaysian IPO firms exhibit both real and accrual earnings management discretionary behaviour.

H2a: There is a significant positive relationship between Neutral Pressure group of institutional investors and earnings management practices in Malaysian IPO firms.

H2b: There is a significant negative relationship between Conservative group of institutional investors and earnings management practices in Malaysian IPO firms.

3. Research Methodology

The population of the study consists of 476 companies that made an IPO and subsequently listed on Bursa Malaysia during the period 2002 to 2013. For an 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 stock 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 to 2013. Companies with incomplete ownership data and change in financial year were also excluded. These conditions significantly reduced the sample firms to 220 IPO firms.

3.1 Measuring Real and Accrual Earnings Management

In accordance with the trend in previous earnings management studies, the Dechow *et al.* (1995) cross-sectional modified Jone's model is used to calculate accrual discretionary behaviour (DuChame *et al.* 2001, 2004; Roosenboom *et al.* 2003; Teoh *et al.* 1998; Ahmed-Zaluki *et al.* 2011). Details of these calculations are in Appendix: A1 (A1.1-A1.5). To measure real earnings, the Dechow *et.al* (1995) models employed in previous studies were adopted. These include: abnormal cash flow from operations (CFO), abnormal discretionary expenses defined as the sum of: abnormal selling, general and administrative expenses, research and development and advertising. Thirdly, the abnormal production cost is defined as the sum of: abnormal change in inventory and cost of goods sold which makes it applicable to non-manufacturing companies. 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 Measurement of Independent Variables

To examine the impact of institutional ownership structure on earnings management in Malaysian IPOs earnings management, discretionary proxies and individual discretionary line accounting items are used as dependent variables. The following general regression equation is used for each earnings management, abnormal discretionary behaviour so as to give detailed insight into the institutional ownership real and accrual discretionary behaviour.

$$EM_{it} = \alpha_0 + \alpha_1 INSTOWN_{it} + \alpha_2 AUD_{it} + \alpha_3 AGE_{it} + \alpha_4 LEV_{it} + \alpha_5 SIZE_{it} + \alpha_6 CAPGWTH_{it} + \alpha_7 INSTMSWG_{it} + \epsilon_{it} \quad (1)$$

The percentage share ownership of members of INSTMSWG (here after called the conservative group) and percentage share ownership by banks insurance companies, unit trust funds and other financial institutions (here after called the neutral group INSTOWN) will be the independent variables. 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 are controlled. These factors include: age, auditors, leverage, sizes and capital expenditure growth (Ahmad-Zaluki *et al.* 2011). Table 1 is a summary of variable definitions**.**

Table 1: Variable Definition and Measurement for Ownership Structure

Variable	Measurement	Sign Predicted
Auditor	Is a dummy variable that equals 1 if the IPO firm's belongs to the Big 4 audit firms (PricewaterhouseCoopers, Ernst and Young, Deloitte and Touche and KPMG) and zero otherwise.	Negative
Age	Firm age is the firm age calculated from the date of incorporation to the issuing year. That age is measured as the difference between the date of firm's establishment and the date of its IPO.	Negative
Leverage	Leverage ratio is measured as the percentage of total debts to total assets (Katz 2009).	
Size	Log of total assets.	Negative
Cap. Ex. Growth	This is computed as capital expenditure during the IPO year minus the capital expenditure in the previous year scaled by total assets in the year prior to the IPO year.	Negative
INSTMSWG	Percentage of shares owned by organizations such as EPF, SOCSO, PNB, LTAT, TH and other nominee companies which are associated with the above categories of institutions are included. Information is obtainable from the company's annual report in S&P Capital IQ data base.	Negative
Institutional ownership (INSTOWN)	The percentage of common shares owned by the following organizations such as insurance companies (life and non-life), banks, pension funds, investment trusts (including unit trusts) and financial institutions (including banks and banks nominee companies, finance companies, building societies and credit cooperatives) and investment companies. Information is obtainable from the company's annual report in S&P Capital IQ.	Positive/ Negative

4. Results, Discussion and Conclusions

4.1 Descriptive Statistics

Table 2 reports the descriptive statistics. Over 42 percent of the IPO companies in Malaysia employ the big four auditors while the average age of the IPO company is about 11 years which is in tandem with previous similar studies (Ahmed-Zaluki *et al.* 2011). However this is slightly lower than the 9 years reported in US IPO pioneer studies (Teoh and Wong *et al.* 1998). Average institutional INSTOWN (Neutral Pressure group) is 23 percent and a maximum of 32% which is in agreement with past studies (Jalil and Rahman 2010). The high institutional ownership concentration in the Malaysian corporate sector makes it an issue.

Following Rahman and Ali (2006) to test evidence of earnings management practices in the sample period, one sample T-test for the accrual and real earnings management proxies was carried out. From the results, the mean earnings management for discretionary accrual behaviour (DA) is positive. This is an indication of increasing income accrual earnings management discretionary behaviour to inflate earnings in the IPO year (Darrough and Rangan 2005). Similarly real activity discretionary behaviour in abnormal cash flow from operations (DCFO) is negative which is synonymous with income decreasing real activity behaviour. However, other real activity discretionary proxies are all positive and statistically significant ($p < 0.05$) which is an indication that Malaysian IPO firms engage in both accrual and real activity discretionary behaviours.

Table 2: Summary of Descriptive Statistics of the Variables

VARIABLE	MEAN	S.D	MEDN	MIN	MAX
AUDITOR	0.42	NA	N/A	NA	NA
AGE	11.05	8.41	8.50	1.00	38.00
INSTOWN	0.23	2.16	0.01	0.00	32.02
INSTMSWG	0.07	0.20	0.00	0.00	1.00
CAPGWTH	3.96	20.42	0.00	-.96	264.06
LEVERAGE	0.58	2.24	0.31	-0.21	29.40
SIZE	307	1442	90.1	0.00	17798
DA	0.011**	0.75	-0.01	-2.91	3.45
DCFO	-0.03	0.55	0.02	-2.96	2.88
DSGA	0.05**	0.40	0.05	-2.20	1.48
DCOGS	0.02**	0.15	0.00	-1.08	1.90
DISCEXP	0.04***	0.73	0.02	0.01	0.57
DINVT	0.02***	0.11	0.00	-0.34	0.65
DPROD	0.03***	0.19	0.01	0.05	0.63
REM	0.016***	3.54	0.042	-3.21	3.01

Notes: All the discretionary earnings management proxies are winsorized at 1% and 99% to avoid the influence of outliers. Abbreviations 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; SIZE = total assets; INSTMSWG = the cumulative percentage shareholding of the members of the Minority Shareholders Watch Dog (the conservative group); INSTOWN = the percentage shareholding of banks, insurance companies, unit trust and other related institutions. Asterisk ***, ** and * indicate significant at 1%, 5%, and 10%, respectively.

4.2 Time Series Profile of Earnings Management Proxies

To further confirm our findings from descriptive statistics, Table 3 presents the time series profile of median and mean values of real and accrual earnings management proxies around the post-IPO period: year +1 to year +5. The results indicate significant positive mean discretionary accruals in the IPO year +1 which is consistent with income increasing accrual earnings management taking advantage of the IPO year. It is tempting to believe that the intention is to influence IPO pricing in the year +1. The negative coefficients 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. 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. It also shows an indication of trade off or reversion to real activity discretionary behaviour. Immediately after the IPO year, there is evidence of decreasing accrual earnings management behaviour from year +3 through to year +5. This is perhaps because of the need to escape detection by the regulatory authorities. Other 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.

Table 3: Time Series Profile of Accrual and Real Earnings Management

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	0.03	0.03	0.02	0.04***	0. 03
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	0.17	0.02	0.02***	0.03***	0.02
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	0.13**	0.17**	0.15	0.28**	0.17

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%. All other variables are as previously defined. Asterisk ***, ** and * indicate significant at 1%, 5%, and 10%, respectively.

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.

On the other hand, 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 which support hypothesis H1. 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; Roychowdhury 2006). There is however a decline in real activity management in year +4 even though the median values remain positive and significant. This contradicts the findings of Zaluki-Ahmed *et al.* (2011) that no evidence of pervasive earnings management was found in the post IPO period which may be due to the fact that real activity discretionary behaviour was not investigated. In the year +4, there was a decline in the real and accrual discretionary behaviour which could be due to reduced incentives of major

shareholders and insiders to engage in earnings management discretionary behaviour due to expiration of the share moratorium period.

4.3 Spearman's Pairwise Correlation Matrix

Table 4 shows the Spearman's pairwise correlation among the dependent, independent and control variables**.** The results indicate all the independent variables are moderately correlated which confirms multicollinearity is not a problem. Interestingly the institutional ownership (INSTOWN) by banks, insurance companies and unit trust firms (i.e. the "neutral pressure group) is significantly negatively correlated with real earnings management discretionary behaviour in abnormal cash flow from operations (DCFO), abnormal cost of goods sold (DCOGS) and abnormal production cost (DPROD) but insignificantly negatively related to aggregate real earnings discretionary behaviour. Surprisingly it is significantly positively related to abnormal discretionary expenses (DISCEXP). This evidence suggests even though they are short term investors and have business relationships with investee firms they still constrain earnings management discretionary behaviour.

On the other hand, the shareholders activist (INSTMSWG), that is the conservative group, has a negative relationship with the aggregate real earnings management (REM), abnormal production cost (DPROD) and abnormal change in inventory (DINVT). This is in line with findings of past studies (Jalil and Rahman 2010; Park *et al.* 2008).

5. Multivariate Analysis

Table 5 is the summary of the multivariate standard error robust regressions on the earnings management proxies, the institutional ownership and control variables. The firm specific intercept or constant in the regression is to capture the immeasurable or the unobserved firm characteristics. The Robust Standard Error Regression (Heterokedestic hc3 consistent) regression was used to control for unobserved heterogeneity which might have influence on the firm's earnings management discretionary behaviour[3].

The result shows that both the pressure insensitive group (INSTOWN) and the conservative group (INSTMSWG) have an insignificant negative association with discretionary accrual earnings management. This is partly in disagreement with the past study Jalil and Rahman (2010) that confirmed a significant negative association between INSTMSWG (which was termed Pressure Insensitive group) and discretionary accruals. Real activity was not investigated in that study.

[3] Roychowdhury (2006) employed a Fama-Macbeth regression because it is more applicable in developed capital market which is more efficient. The study is also not based on specific corporate event like IPO but earning threshold or target. Standard error regression is preferred in the current study due to normality issues. For instance, outliers are endogenous to IPO setting due to upsurge in investment, increased business activities and additional expenditure of going public. According to Gujarati and Porter (2009) outliers are potential causes of heteroscedasticity and non- normality. Scholars have frowned on outright removal of outliers due to obvious implication on the validity and interpretation of findings and the fact that transforming the data usually leads to generation of new outliers (Wooldridge 2000). It is observed that most of the outliers are genuine as contained in the financial statements and annual reports. The outliers of some variables represent a segment of the sample that needs to be retained to ensure representativeness of the entire population. Following Wilcox 2012 and Hair et al 2010 standard error regression which is 95% as efficient as OLS regression and takes care of abnormalities and outliers was adopted for this study instead of Fama-Macbeth regression that does not take care of the abnormalities and more suitable for applicable in developed capital market.

Table 4: Spearman's Pairwise Correlation Matrix for explanatory and earnings management variables

	AUDIT.	AGE	INSTOW	INSTMSWG	CAPGRW.	LEVER.	SZE_ASS	DA	DCFO	DSGA	DCOGS	DINVT	DPROD	DISC.	REM
AUDIT.	1	0.119	0.152*	0.066	-0.099	0.153*	0.322**	0.071	0.118	-0.045	0.142*	-0.014	0.162*	0.088	0.117
AGE		1	0.096	-0.04	0.007	0.127	0.168*	0.079	0.115	-0.015	-0.002	0.176**	0.106	0.057	0.057
INSTOW.			1	0.127	-0.036	0.008	0.303**	-0.111	-0.139*	-0.080	-0.265**	-0.043	-0.223**	0.343**	-0.065
INSTMSWG.				1	-0.122	-0.098	0.039	0.021	0.03	0.019	0.011	-0.081	-0.103	0.058	-0.108
CAPGRW.					1	-0.128	-0.053	0.001	-0.051	0.033	-0.026	-0.001	-0.002	-0.017	-0.024
LEVERA.						1	0.478**	0.165*	0.049	-0.153*	0.383**	0.165*	0.315**	-0.024	0.273**
SZE_ASS.							1	0.253**	0.162*	-0.113	0.558**	0.239**	0.486**	0.212**	0.375**
DA								1	0.116	-0.004	0.313**	0.091	0.327**	0.112	0.331**
DCFO									1	-0.115	-0.069	0.065	-0.063	0.01	-0.236**
DSGA										1	0.017	-0.005	-0.122	0.258**	-0.203**
DCOGS											1	0.073	0.541**	0.458**	0.445**
DINVT												1	0.306**	0.102	0.228**
DPROD													1	0.395**	0.877**
DISCEXP														1	0.154*
REM															1

Notes: Asterisk ***, ** and * indicate significant at 1%, 5%, and 10%, respectively.

Table 5: Robust Standard Error (vce Robust option) (Eicker-Huber-White Heterokedestic hc3 Consistent)

VAR.	DA	DCFO	DSGA	DCOGS	DINVT	DPROD	DISC.	REM
INSTOWN	-0.011	-0.008**	-0.017***	0.055	-0.004***	-0.012	0.017**	-0.014
	(-0.016)	(-0.004)	(-0.002)	(-0.035)	(-0.001)	(-0.028)	(-0.008)	(-0.025)
INSTMSWG	-0.113	0.019	-0.023	-0.211	-0.039	-2.172**	-0.231*	-1.699**
	(-0.384)	(-0.185)	(-0.082)	(-2.109)	(-0.034)	(-0.900)	(-0.121)	(-0.843)
AUDITOR	0.052	0.242**	-0.007	0.287	-0.001	0.495	0.105	0.279
	(-0.395)	(-0.104)	(-0.052)	(-1.066)	(-0.019)	(-0.771)	(-0.125)	(-0.656)
AGE	0.008	0.012*	-0.004	0.032	0.004***	0.022	-0.003	0.012
	(-0.024)	(-0.007)	(-0.003)	(-0.063)	(-0.001)	(-0.038)	(-0.006)	(-0.031)
CAPGWTH	-0.002	0.002*	0.003	-0.011	-0.002	-0.011	-0.001	-0.010
	(-0.034)	(-0.011)	(-0.008)	(-0.009)	(-0.002)	(-0.007)	(-0.001)	(-0.007)
LEVERAGE	-0.001	0.020**	0.001	-0.031	-0.033	-0.049	-0.006	-0.051
	(-0.021)	(-0.009)	(-0.009)	(-0.048)	(-0.004)	(-0.035)	(-0.006)	(-0.035)
SIZE	-0.013	0.0165	-0.043	0.001	-0.021	0.0300	0.088	0.002
	(-0.035)	(-0.026)	(-0.031)	(-0.001)	(-0.058)	(0.003)	(-0.081)	(-0.003)
CONSTANT	0.022	-0.330**	0.090*	1.913***	-0.012	1.750***	0.357***	1.458***
	(-0.519)	(-0.156)	(-0.051)	(-0.719)	(-0.015)	(-0.575)	(-0.072)	(-0.541)
OBS	220	220	220	220	220	220	220	220
R-squared	0.001	0.039	0.037	0.016	0.065	0.019	0.034	0.014

Notes: Standard Errors in Parentheses, Asterisk ***, ** and * indicate significant at 1%, 5%, and 10%, respectively. Each column is the result of regression of the following equation for earnings management proxy named in the relative column: $EM_{it} = \alpha_0 + \alpha_1 INSTOWN_{it} + \alpha_2 AUD_{it} + \alpha_3 AGE_{it} + \alpha_4 LEV_{it} + \alpha_5 SIZE_{it} + \alpha_6 CAPGWTH_{it} + \alpha_7 MSWG_{it} + \epsilon_{it}$

The mixed findings might be connected to the trade-off between accruals and real earnings management discretionary behaviour of Malaysian IPO firms. With tightening of regulations, Malaysian IPO firms perhaps resorted to real activity discretionary behaviour to avoid detection by regulators as evidenced in previous studies (Cohen and Zarowin 2010; Gramlich and Sørensen 2004). The result also shows there is a significant negative relationship between institutional ownership, the neutral-pressure group (INSTOWN) and real earnings management abnormal behaviour in DCFO, DSGA, and DINVT. However it is quite revealing that there is a significant positive relationship with abnormal discretionary expenses (DISCEXP). One possible explanation for the inability of the Neutral Pressure Group to control abnormal discretionary expenses is perhaps because they are hardly represented in management of their investee firms unlike the conservative group.

On the other hand, there is a significant negative association between institutional ownership by members of the Malaysian shareholders watch dog group (i.e. the conservative group INSTMSWG) most importantly in abnormal discretionary expenses, production and aggregate real earnings which confirms hypothesis H2b. This result is expected because as shareholders activists whose mandate include questioning unethical and questionable management practices in public companies they are expected to monitor their investee firms and constrain earnings management practices. The result is in tandem with previous studies (Park *et al.* 2008; Jalil and Rahman 2010). It shows the importance of decomposing the discretionary behaviour into accounting items instead of relying on the aggregate measures of discretionary behaviour. When the individual components are positive and negative they cancels each other or alternatively the aggregate may be significant while the components are not. This also takes care of deliberate intention to mislead by mixing real abnormal behaviour in different directions leading to mixed results (Gunny 2010).

To further ensure the result is consistent and robust to other regression estimators, Table 6 is the result of regression after taking care of outliers. There may be some differences in terms of the level of significance but in overall the results are consistent. In summary, there is strong and consistent evidence from the descriptive, correlational and multivariate analysis of

a negative association between the Neutral Pressure Group, the Conservative group and earnings management discretionary behaviour which is consistent with international evidence (Roychowdhury 2006)[4]. It appears the Malaysian institutional investors are becoming more sophisticated and with the formation of Minority Shareholders Watch Dog Group (INSTMSWG) now have the ability to analyse the implication of real activity on long term value of the firm which is a step in the right direction.

Table 6: Standard Error Robust Regression (Cook's D, Huber-Biweights, Outliers-Influence Consistent)

VAR.	DA	DCFO	DSGA	DCOGS	DINVT	DPROD	DISC.	REM
INSTOWN	-0.042	-0.360***	-0.147***	-0.599*	-0.0147	0.035	0.562***	-0.276
	(-0.140)	(-0.078)	(-0.055)	(-0.336)	(-0.02)	(-0.029)	(-0.053)	(-0.383)
INSTMSWG	-0.006	0.006	0.012	-0.248	-0.022	-0.582*	-0.025*	-0.584*
	(-0.122)	(-0.068)	(-0.047)	(-0.269)	(-0.018)	(-0.313)	(-0.342)	(-0.306)
AUDITOR	0.075	0.017	-0.007	0.035	-0.002	0.179	-0.002	0.129
	(-0.051)	(-0.028)	(-0.020)	(-0.112)	(-0.007)	(-0.130)	(-0.018)	(-0.128)
AGE	0.002	0.001	-0.001	-0.003	0.001*	0.016**	0.002	0.0132*
	(-0.003)	(-0.002)	(-0.001)	(-0.006)	(-0.004)	(-0.008)	(-0.001)	(-0.007)
CAPGWTH	-0.001	0.002	-0.003	-0.002	-0.010	0.001	-0.003	0.001
	(-0.001)	(-0.001)	(-0.001)	(-0.003)	(0.002)	(-0.001)	(-0.004)	(-0.003)
LEVERAGE	0.004	0.006	-0.005	0.0003	-0.001	-0.0114	0.003	-0.013
	(-0.011)	(-0.006)	(-0.004)	(-0.024)	(-0.002)	(-0.028)	(-0.004)	(-0.027)
SIZE	-0.001	0.003**	-0.002***	0.003***	0.004	0.013***	-0.001	0.001***
	(-0.002)	(-0.001)	(-0.001)	(-0.001)	(-0.002)	(-0.001)	(-0.001)	(-0.001)
CONSTANT	-0.018	-0.028	0.0439**	-0.090	0.001	0.276**	0.111***	0.089
	(-0.046)	(-0.026)	(-0.018)	(-0.101)	(-0.007)	(-0.117)	(-0.016)	(-0.116)
OBS	219	219	219	218	219	219	218	218
R-squared	0.017	0.177	0.07	0.902	0.026	0.587	0.416	0.615

Notes: Standard Errors in Parentheses, Asterisk ***, ** and * indicate significant at 1%, 5%, and 10%, respectively.

6. Conclusion

The result of this study suggests the presence of institutional investors constrain real earnings management discretionary behaviour. On the other hand the inability of the Neutral Pressure group (INSTOWN) to monitor real activity behaviour in discretionary expenses (DISCEXP) could be largely due to the fact that they are not presented in the management of their investee firms unlike members of the Malaysian shareholders watchdog. These are basically finance and related institutions with short term horizon, and are after short-term gain due to short-term nature of their liabilities coupled with liquidity issues and regulations. Like in most developing economies and concentrated nature of Malaysian market, these institutions operate in a web of business relationships and due to interest *de clientele* they find it difficult to constrain earnings management. However the findings in this study prove Malaysian institutional shareholders are effective monitors.

In Malaysia, there has been tightening of corporate governance rules and regulations, strengthening of accounting standards, listing rules and regulations and heightened surveillance by the Securities Commission and Bursa Malaysia. All these reforms must have instilled ethical reporting in these institutions. Hypothesis H2a is in agreement with the

[4] Although the presence of sophisticated investors restricts the extent of real activities manipulation three other explanatory variables sources of cross-sectional variation in real activities manipulation were identified in Roychowdhury 2006: (a) industry membership; (b) incentives to meet zero earnings, including the presence of debt, growth opportunities, and short-term creditors; and (c) earnings management flexibility. Leverage and growth opportunities have been controlled but the impact of the other interaction terms in the IPO event is not considered due to the commonality of event and motivation which may be considered as one of the weakness of the study

findings while the result of hypothesis H2b is mixed but largely confirms negative association between the Neutral Pressure Group (INSTOWN) and earnings management discretionary behaviour.

Conclusively, the results confirm there is a negative association between institutional holdings and earnings management. Overall the general believe is that institutions have the ability to see through earnings management because of their knowledge and expertise and that is why they outperform individual investors. Our findings are in tandem with this opinion. The findings of this study will assist investors and other stakeholders in deciding their investment strategy. It also seems to suggest the need for institutional investors to take active role in their investee firms in order to safeguard the value of their investments.

References

Abdul Jalil, A. and R. Abdul Rahman. 2010. Institutional investors and earnings management: Malaysian evidence. *Journal of Financial Reporting and Accounting* 8(2): 110-127.

Abdul Rahman, R. and F.H. Mohamed Ali. 2006. "Board, audit committee, culture and earnings management: Malaysian evidence", *Managerial Auditing Journal* 21(7): 783-804.

Abdul Rahman, R. and W.R. Wan Abdullah. 2005. The new issue puzzle in malaysia: performance and earnings management, *Journal of Financial Reporting and Accounting* 3(1): 91-110.

Abdul Wahab, E.A. and R. Abdul Rahman. 2009. Institutional investors and director remuneration: does political connections matter?. *Advances in Financial Economics* 13(9): 139-69.

Ahmad-Zaluki, N. A.K. Campbell and A. Goodacre. 2011. Earnings management in Malaysian IPOs: The East Asian crisis, ownership control, and post-IPO performance. *The International Journal of Accounting* 46(2): 111-137.

Ahmad-Zaluki, N.A. and W.N. Wan-Hussin. 2010. Corporate governance and earnings forecasts accuracy. *Asian Review of Accounting* 18(1): 50-67.

Almazan, A., J.C. Hartzell and L.T. Starks. 2005. Conflicts of interest and monitoring costs of institutional investors: evidence from executive compensation. *Financial Management* 34(4): 5-34.

Aswadi, E., A. Wahab, J. How and P. Verhoeven. 2008. Corporate governance and institutional investors : evidence from malaysia. *Asian Academy of Management Journal of Accounting and Finance* 4(2): 67-90.

Ball, R., S. Kothari, and A. Robin. 2000. Corrigendum to "The effect of international institutional factors on properties of accounting earnings" *Journal of Accounting and Economics* 30(2): 1-51.

Ball, R., and L. Shivakumar. 2008. Earnings quality at initial public offerings. *Journal of Accounting and Economics* 45(2-3): 324-349.

Bany-Ariffin, A.N. 2010. Disentangling the driving force at pyramidal firms capital structure: a new perspective, *Studies in Economics and Finance* 27(3): 195-210.

Brickley, J.A., R.C. Lease and C.W. Smith. 1988. Ownership structure and voting on antitakeover amendments. *Journal of Financial Economics* 20(1); 267-291.

Bruns, W. and K. Merchant. 1990. The dangerous morality of managing earnings. *Management Accounting* 72: 22-25.

Bushee, B.J. 2001. Do institutional investors prefer near-term earnings over long-run value? *Contemporary Accounting Research* 18: 207-246.

Cheng, C.S.A. and A. Reitenga. 2009. Characteristics of institutional investors and discretionary accruals. *International Journal of Accounting and Information Management* 17(10): 5-26.

Claessens, S., S. Djankov and L.H. Lang. 2000. The separation of ownership and control in East Asian Corporations. *Journal of Financial Economics* 57(6): 2741-2771.

Cohen, D.A. and P. Zarowin. 2010. Accrual-based and real earnings management activities around seasoned equity offerings. *Journal of Accounting and Economics* 50(1): 2-19.

Cornett, M.M., A.J. Marcus, A. Saunders, and H. Tehranian. 2007. The impact of institutional ownership on corporate operating performance. *Journal of Banking and Finance* 31(6): 1771-1794.

David, P., M.A. Hitt, and J. Gimeno. 2001. The influence of activism by institutional investors on R&D. *Academy of Management Journal* 44(1): 144-157.

Dechow, P.M., R.G. Sloan, and A.P Sweeney. 1995. Detecting Earnings Management. *The Accounting Review* 70(2): 193-225.

DeFond, M.L., and J. Jiambalvo. 1994. Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics* 17(1-2): 145-176.

DuCharme, L.L., P.H. Malatesta and S.E. Sefcik. 2004. Earnings management, stock issues, and shareholder lawsuits. *Journal of Financial Economics* 71(1): 27-49.

Ewert, R. and A. Wagenhofer. 2005. Economic effects of tightening accounting standards to restrict earnings management. *Accounting Review* 80(4): 1101-1124.

Fan, J.P.H. and T.J. Wong. 2002. Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics* 33(3): 401-425.

Fields, T.D., T.Z. Lys and L. Vincent. 2001. Empirical research on accounting choice. *Journal of Accounting and Economics* 31(1-3): 255-307.

Francis, J., K. Schipper and L. Vincent. 2005. Earnings and dividend informativeness when cash flow rights are separated from voting rights. *Journal of Accounting and Economics* 39(2): 329-360.

Graham, J.R., C.R. Harvey and S. Rajgopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics* 40: 3-73.

Gramlich, J.D. and O. Sørensen. 2004. Voluntary management earnings forecasts and discretionary accruals: evidence from Danish IPOs. *European Accounting Review* 13(2): 235-259.

Gunny, K.A. 2010. The relation between earnings management using real activities manipulation and future performance: Evidence from meeting earnings benchmarks. *Contemporary Accounting Research* 27(3): 855-888.

Hartzell, J.C. and L.T. Starks. 2003. Institutional investors and executive compensation. *The Journal of Finance* 58(6): 2351-2374.

Haw, I.M., B. Hu, L.S. Hwang and W. Wu. 2004. Ultimate ownership, income management, and legal and extra-legal institutions. *Journal of Accounting Research* 42(2): 423-462.

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

Ismail, N. and P. Weetman. 2007. Forecast accuracy in initial public offerings and the impact of external constraints relative to managerial choice: A research note. *Accounting and Finance* 47(3): 513-525.

Ismail, R. and R.A. Rahman. 2011. Institutional investors and board of directors' monitoring role on risk management disclosure level in Malaysia. *Journal of Corporate Governance* 10(2): 37-61.

Jain, S., P. Jain and Z. Rezaee. 2010. Stock market reactions to regulatory investigations: Evidence from options backdating. *Research in Accounting Regulation* 22: 52-57.

Jelic, R., B. Saadouni and R. Briston. 2001. Performance of Malaysian IPOs: Underwriters reputation and management earnings forecasts. *Pacific Basin Finance Journal 9*(5): 457-486.

Jones, J.J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research* 29(2): 193-228.

Kasznik, R. 1999. On the association between voluntary disclosure and earnings management. *Journal of Accounting Research* 37(1): 57-81.

Kim, J.B., R. Chung and M. Firth. 2003. auditor conservatism, asymmetric monitoring, and earnings management. *Contemporary Accounting Research* 20: 323-359. doi:10.1506/J29K-MRUA-0APP-YJ6V

Kim, J.B. and C.H. Yi. 2006. Ownership structure , business group affiliation , listing status , and earnings management : Evidence from Korea. *Contemporary Accounting Research* 23(2): 427-465.

Koh, P.S. 2003. On the association between institutional ownership and aggressive corporate earnings management in Australia. *British Accounting Review* 35(2): 105-128.

Kothari, S.P., A.J. Leone, and C.E. Wasley. 2005. Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39(1): 163-197.

Leuz, C., D. Nanda and P.D. Wysocki. 2003. Earnings management and investor protection: An international comparison. *Journal of Financial Economics* 69(3): 505-527.

Mashayekhi, B. and M.S. Bazaz. 2008. Corporate governance and firm performance in Iran. *Journal of Contemporary Accounting and Economics* 4(2): 156-172.

Park, Y.W., Z. Selvili and M.H. Song. 2008. Large outside blockholders as monitors: Evidence from partial acquisitions. *International Review of Economics and Finance* 17: 529-545.

Rahman, R.A. and F.H.M. Ali. 2006. Board, audit committee, culture and earnings management: Malaysian evidence. *Managerial Auditing Journal* 21(7): 783-804.

Ronen, T. and V. Yaari. 2002. On the tension between full revelation and earnings management: a reconsideration of the revelation principle. *Journal of Accounting, Auditing and Finance* 17(4): 273-294.

Roosenboom, P., T. Van der Goot and G. Mertens. 2003. Earnings management and initial public offerings: Evidence from the Netherlands. *International Journal of Accounting* 38(3): 243-266.

Roychowdhury, S. 2006. Earnings management through real activities manipulation. *Journal of Accounting and Economics* 42(3): 335-370.

Teoh, S.H., I. Welch and T.J. Wong. 1998. Earnings management and the long-run market performance of initial public offerings. *The Journal of Finance* 53(1): 1935-1974.

Thillainathan, R. 1999. 'Corporate Governance and Restructuring in Malaysia – A Review of Markets, Mechanisms, Agents & The Legal Infrastructure,' Paper prepared for the joint World Bank/OECD Survey of Corporate Governance arrangements in a selected number of Asian countries.

Wahal, S. and J.J. McConnell. 2000. Do institutional investors exacerbate managerial myopia? *Journal of Corporate Finance* 6(3): 307-329.

Zang, A.Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *Accounting Review* 87(2): 675-703.

Appendix

A1 Steps for Calculating Discretionary Accruals

A1.1 Step 1: Collection of Data

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

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

where $TA_{i,t}$ = 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 $\in_{i,t}$ 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 $\hat{\alpha}_0, \hat{\alpha}_1, \hat{\alpha}_2, \hat{\alpha}_3, \hat{\alpha}_4$ from each annual estimation portfolio. 96 portfolios were constructed using seasoned equity firms on Bursa Malaysia stock exchange with 2,311 firm year observations.

$$NDA_{i,t} = \alpha_0 + \hat{\alpha}_1 1/ASSET_{it-1} + \hat{\alpha}_2 \Delta SALES_{it-1} - \Delta REV_{it}/ASSET_{it-1} + \hat{\alpha}_3 PPE_{it}/ASSET_{it} + \hat{\alpha}_4 ROA_{I,t} \quad (3)$$

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
$\hat{a}_1, \hat{a}_2, \hat{a}_3 \hat{a}_4$ = 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):

$$DA_{i,t} = TA_{jt}/ASSET_{it} - NDA_{i,t} \quad (4)$$

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:

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

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:

$$CFO_{it}/ASSETS_{it-1} = \alpha_0 + \beta_1 1/ASSET_{it-1} + \beta_2 SALES_{it}/ASSETS_{it-1} + \beta_3 \Delta SALES_{it}/ASSETS_{it-1} + \in_{i,t} \quad (6)$$

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 (6).

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:

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

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 (7) 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:

$$DISX_{it}/ASSET_{it-1} = \alpha_0 + \beta_1 1/ASSET_{it-1} + \beta_2 SALES_{it}/ASSETS_{it-1} + \in_{i,t} \quad (8)$$

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 8, 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 9:

$$SGA_{it}/ASSET_{it-1} = \alpha_0 + \beta_1 1/ASSET_{it-1} + \beta_2 SALES_{it-1}/ASSET_{it-1} + \epsilon_{it} \quad (9)$$

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 are 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 10.

(a) $\Delta INVT_{it}/ASSETS_{it-1} = \alpha_0 + \beta_1 1/ASSET_{it-1} + \beta_2 \Delta SALES_{it}/ASSETS_{it-1} + \beta_3 \Delta SALES_{it-1}/ASSET_{it-1} + \in_{it}$ (10)

Secondly, cost of goods sold during the year is estimated as a linear function of contemporaneous sales as specified in the Equation 11.

(b) $COGS_{it}/ASSET_{it-1} = \alpha_0 + \beta_1 1/ASSET_{it-1} + \beta_2 SALES_{it}/ASSET_{it-1} + \in_{it}$ (11)

Using Equations 10 and 11 normal level of production cost (a) + (b) was then estimated as:

$PROD_{it}/ASSET_{it-1} = a_0 + \beta_1 1/ASSET_{it-1} + \beta_2 SALES_{it}/ASSET_{it-1} + \beta_3 \Delta SALES_{it}/ASSETS_{it} + \beta_4 \Delta SALES_{it-1}/ASSETS_{it-1} + \in_t$ (12)

where $PROD_{it}$ = 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 12 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 multiplied 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 a nutshell, 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.