

THE EFFECT OF INFORMATION ASYMMETRY ON EARNINGS MANAGEMENT THROUGH ACCRUAL AND REAL ACTIVITIES DURING GLOBAL FINANCIAL CRISIS

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ABSTRACT

This study examines the impact of the 2008-2009 financial crisis on the earnings management behavior of Indonesian listed firms. This study gives evidence of how the presence of information asymmetry affects management incentives to manage earnings, especially through real activities. When information asymmetry is high, stakeholders do not have sufficient resources, incentives or access to relevant information to monitor manager's actions, which gives rise to the practice of earnings management. This research replicates the work of Richardson (2000) and Rahmawati and Baridwan (2006) but in the setting of during global financial crisis. This study examines the effect of SarbOx on earnings management behavior and shows that earnings management has shifted from accrual management to real account management. Using 55 manufacturing firms from 2008 to 2011, this study adds to our knowledge of earning management and information asymmetry during global financial crisis in Indonesia.

Key words: *Earnings Management, Accrual, Real Earnings Management and Financial Crisis.*

PENGARUH ASIMETRI INFORMASI PADA MANAJEMEN LABA MELALUI KEGIATAN AKRUAL DAN RIIL SELAMA KRISIS KEUANGAN GLOBAL

ABSTRAK

Penelitian ini menganalisis dampak krisis keuangan 2008-2009 terhadap earning management behavior perusahaan-perusahaan yang terdaftar. Penelitian ini memberikan bukti bagaimana asimetri informasi mempengaruhi management incentive untuk mengelola aktivitas riil. Jika asimetri informasi tinggi, stakeholder tidak memiliki sumber informasi, insentif atau akses informasi yang relevan untuk memonitor tindakan manajer yang bias meningkatkan pula praktik earning management. Penelitian ini mereplikasi study Richardson pada 2000 dan Rahmawati dan Baridwan pada 2006 tetapi selama krisis keuangan global. Ini juga menganalisis pengaruh SarbBox pada earning management behavior dan menunjukkan bahwa earning management berubah dari accrual management menjadi real account management. Dengan menggunakan 55 perusahaan manufaktur dari 2008 sampai 2011, dengan menambahkan pengetahuan earning management dan asimetri informasi selama krisis keuangan global di Indonesia.

Kata Kunci: *Earnings Management, Accrual, Real Earnings Management and Financial Crisis.*

INTRODUCTION

The global trade and businesses result in an increased flow of capital to developing economies in the last decade of the twentieth century. While capital inflows are the norms, the sudden outflows of such capitals cause financial crisis to the developing economies in different regions of the world. Towards the end of the third quarter of 2008, the world economy faced a new round of the collapse of the global economic stability, along with the spread of the financial crisis to other countries.

The global financial crisis started to emerge since August 2007, when the BNP Paribas announced a freeze on some securities linked to risky U.S. mortgages (subprime mortgages). This freezing then starts triggering turmoil in financial markets and eventually spread to the whole world. At the end of the third quarter of 2008, the intensity of the crisis gained momentum as the largest bankruptcy of U.S. investment bank Lehman Brothers, which was followed by increasingly severe financial difficulties in a number of large-scale financial institutions in the U.S., Europe, and Japan. The global financial crisis has affected the Indonesian economy as reflected by the turmoil in the capital markets and money markets. Composite Stock Price Index (CSPI) in December 2008 closed at 1355.4, trimmed almost half of the level at the beginning of 2008 amounted to 2627.3, together with the fall in market capitalization and a sharp decline in stock trading volume.

The financial crisis also affects the level of investor confidence in the company and also the level of confidence in the financial health of the creditor against a company in solvency. Therefore, companies try to improve the performance of the company in order to gain the trust of investors and creditors to fund the company through investments and loans. The importance of performance information measured by profits is realized by management. Various attempts were made by the management to improve the performance of the company, of the healthy ways to attempt to deviate (dysfunctional behavior).

Dysfunctional behavior is realized in earnings management measures. Measures of earnings management can occur because of information asymmetry between the principal (investors and creditors) and agents (management). Healy and Wahlen (1999) define that earnings management occurs when managers use judgment in financial reporting its transactions and financial statements to mislead change some stakeholders about the economic performance of the company or to influence contractual outcomes that depend on accounting numbers reported.

Official data (National Agency of Statistics/BPS) show that the growth rate of Indonesian economy was at around 4.5 percent, much lower than the growth rate achieved in 2008. This may suggest that the Indonesian economy was also affected by the world economic recession in 2008/09. Gorton (2008) and Brunnermeier (2009) provide evidence about another factor explaining the 2007-2008 financial crisis is the asymmetric information. Information asymmetry in this study focuses on its effects on earnings management during the crisis period. During the crisis, managers also have increased discretion with respect to manage reported earnings in the light of information asymmetry between manager and shareholders. When information asymmetry is high, stakeholders do not have sufficient resources, incentives or access to relevant information to monitor manager's actions, which gives rise to the practice of earnings management (Schipper 1989 and Warfield et al. 1995).

Rahmawati (2007) argues that there is a systematic relationship between information asymmetry and the level of earnings management. Management actions to manipulate or manage earnings can be reduced by providing quality information to outsiders where the quality of the financial statements will reflect the rate of profit. Research from Rahmawati and Baridwan (2006) found that information asymmetry has a positive and significant effect on earnings management. This research replicates the work of Richardson (2000) and Rahmawati and

Baridwan (2006) but in the setting of during global financial crisis. It also uses the financial crisis as an experimental setting which resulted in a shock to firms' underlying volatility and examines the effect of information asymmetry on earnings management.

As in earlier work, the researcher first documents the presence of real and accrual earnings management in global financial crisis 2008. The SarbOxAct of 2002 addresses internal control issues of firms and establishes rules for auditors and management to limit the probability of earnings management through accruals. In this study we investigate how information environment of a firm influence the relationship of earnings management and shows that earnings management has shifted from accrual management to real account management (Cohen et al. 2008) after the passage of SarbOx and global financial crisis. Using 55 manufacturing firms from 2008 to 2011, this study adds to our knowledge of earning management and information asymmetry during global financial crisis in Indonesia.

THEORETICAL FRAMEWORK AND HYPOTHESIS

Information Asymmetry

The financial statements are prepared for use by the various parties, including the management of the company itself. However, the most concerned with the actual financial statements are the external users. The financial statements are important to external users primarily because of this group are in the greatest condition uncertainty (Ali 2002). The internal users (the management) have a direct relationship with the entity or company and know the significant events that occurred. This situation will lead to the emergence of a condition referred to as asymmetric information (information asymmetry).

Information asymmetry is situations where managers have access to information on the company's prospects are not owned by outside companies. Jensen and Meckling (1976) suggest that if the two groups (agents and principals) are people who are seeking to

maximize utility, then there is good reason to believe that the agent will not always act in the best interest of the principal. Principals can limit by setting the right incentives for agents and do monitor that is designed to limit the aberrant activities of the agent. There are two types of information asymmetry: adverse selection and moral hazard.

Adverse selection is the type of information asymmetry in which one or more parties who hold/will hold a business transaction, or potential business transaction has more information on the other parties. Adverse selection occurs because some people like the manager of the company and the parties in (insiders) others more aware of the present condition and future prospects of a company rather than outside investors.

Moral hazard is the type of information asymmetry in which one or more parties who hold or will hold a business transaction or a potential business transaction can observe their actions in the settlement of their transactions, while the other parties are not. Moral hazard can occur because of the separation of ownership with control that is characteristic of most large companies.

The two principles of financial reporting—relevance and reliability, directly reflects the role of accounting information and are aimed to resolve the fundamental problem of information asymmetry. The released information is relevant information with respect to firm's future prospects, and is reliable information free of managerial manipulation. Where financial disclosure and judgments initially are aimed to reduce the information asymmetry between managers and outsiders, it has been increasingly argued that manager's ability in exercising discretion is likely to impose costs on the users of accounting information. Dye (1988) and Trueman & Titman (1988) point out that the existence of information asymmetry between managers and shareholders is a necessary condition for earnings management. Schipper (1989) also highlights the condition for earnings management being the persistence of asymmetric information, but she relaxes

the condition by arguing that the blocked communication can be eliminated through the enforcement of contractual arrangement.

Bid-ask spread is widely used as a proxy to measure information asymmetry (e.g. Attig et al. 2006). Because of the informational disadvantages, external shareholders will post a wider bid-ask spread in stock prices to reduce their potential losses. The wider bid-ask spread benefits controlling shareholders to realize abnormal profits before the market adjusts its share prices to their real value, while external shareholders' returns diminish and lead to losses if they adopt a buy and hold strategy (Demsetz 1986). Richardson (1998) uses the bid-ask spread and the dispersion in analysts' forecasts as a measure of information asymmetry and finds a positive association between earnings management and the level of information asymmetry.

Earnings Management

Healy and Wahlen (1999) define that earnings management occurs when managers use judgment in financial reporting its transactions and financial statements to mislead change some stakeholders about the economic performance of the company or to influence contractual outcomes that depend on accounting numbers reported. There are some aspects of the discussion is contained in the definition.

First, there are several ways in which managers can use their judgment to affect the financial statements. For example, a judgment is necessary to estimate the numbers of economic events are reflected in the financial statements, such as the useful life and residual value of long-lived assets, losses from bad debts and other. The second aspect is to show that the goal of earnings management is to mislead stakeholders about the company's economic performance. This can happen if the manager does not believe that the stakeholders can undo earnings management and managers have access to information not available to the stakeholders. Finally, management uses judgment in financial reporting by considering the costs and benefits. Cost is

a potential misallocation of resources arising from earnings management. The benefit is the potential improvement in communication credible private information from management to external stakeholders.

Earnings management may arise from information asymmetry problem and agency conflicts that occur when equity ownership is separated from the day-to-day operation of the corporation and managers have a comparative information advantage over shareholders. On one hand, these market imperfections create an environment for managers to engage in accounting discretion to promote their self interest at the expense shareholders. On the other hand, they also create an opportunity for managers to use accounting discretion to communicate their companies' performance related information in an appropriate manner with investors (Trueman & Titman 1988; Dye 1988; Schipper 1989).

A common characteristic of earnings management studies is that they investigate how firm's attributes (presence of bonus plans, earnings-based management compensation or debt covenants) or a particular event (bond or equity issue) create incentives to manage earnings without taking into consideration the economic environment of the firm. In other words, the macroeconomic conditions are held constant or supposed not to influence the incentives for earnings management. Nevertheless, there is evidence that macroeconomic conditions do affect earnings quality. Johnson (1999) for example documents that the value relevance of accounting earnings is sensitive to the business cycle more precisely that the association between earnings and stock returns is higher during expansion periods than during contraction years. Similarly, Jenkins et al. (2009) argue that since accounting information reflects both the consequences of general economic conditions and the effects of the firm's activities, its information content may vary across the business cycle. Contrary to Johnson (1999), they find that earnings are more value relevant during contraction years than during expansion periods. If macroeconomic condi-

tions affect the information content of accounting data, it can be expected that the predictive ability of accounting-based failure prediction models varies across the business cycle. Consistent with this conjecture, several studies report that these models are sensitive to the occurrence of a recession (Kane et al. 1996; Richardson et al. 1998).

These findings highlight the need for contextual earnings management studies, i.e. for research that would take into account the macroeconomic conditions in which firms operate. The 2008-2009 financial crisis and the preceding years provide a unique setting for such analysis. From 2004 to 2007, the Indonesian financial market experienced a moderate but continuous growth, as shown by IHSG whose value rose from 1.000 to 2.750 points during this period. Following the subprime crisis, the index fell to less than 2.000 points in 2008. Since then, it recovered a part of its decline but without exceeding the 3.000 points threshold.

Financial Crisis

The 2008-2009 financial crisis and the preceding years provide a unique setting for indication of earnings management analysis. The financial crisis had significant consequences on the level of economic activity. From the early 70's to 2008, the world experienced an uninterrupted period of economic growth with continuously positive GDP growth rates. In 2009, the gross domestic product declined for the first time in 40 years.

Indonesia is a small open economy so the impact of the global financial crisis greatly affected the domestic economy. In Indonesia, the impact of the crisis began to be felt especially towards the end of 2008. After record growth of over 6% up to the third quarter of 2008, Indonesia's economy started to get heavy pressure in the fourth quarter of 2008. This was reflected in a significant economic slowdown is mainly due to falling exports. Externally, Indonesia's balance of payments deficit and increased exchange rate weakened significantly. In financial markets, risk differ-

ence (risk spread) of the securities Indonesia experienced a significant increase which encourages capital outflow of foreign investment in the stock market, government securities (GS), and Bank Indonesia Certificates (SBI). In relative terms, Indonesia's overall position is not as precarious as other countries. Indonesia's economy was growth by 6.1% in 2008. Meanwhile, the fundamental condition of the external sector, fiscal and banking industry is also strong enough to withstand the storm of global crises.

Earnings Management around Financial Crisis

In the period of crisis, most firms probably exhibit lower earnings, which should motivate managers to engage in income-increasing earnings management to compensate for the decrease of operational performance (Ahmad-Zaluki et al. 2011). Managers of the most affected firms in particular may manipulate earnings upward to avoid a large decline of the firm's stock price that would negatively impact their compensation (Charitou et al. 2007).

Another reason for the company to manage earnings in the crisis period is the presence of debt covenants. Since such covenants are partially based on earnings (Dichev and Skinner 2002), income-increasing manipulations should reduce the probability of violations (DeFond and Jambalvo 1994; Sweeney 1994; Saleh and Ahmed 2005; Iatridis and Kadorinis 2009).

Consistent with the intuition that periods of economic turbulence incite managers to manipulate earnings upward, Ahmad-Zaluki et al. (2011) report that income-increasing earnings management by Malaysian firms engaged in initial public offerings was limited to IPOs that occurred during the Asian crisis period (1997-1998). In troubled periods, managers of financially distressed firms may also have incentives to manage earnings downward. Firms that violate debt covenants or miss a debt repayment must undertake debt restructuring. For these firms, reporting losses may help obtain concessions from lenders.

Banks have the option to refuse these concessions and require the firm's liquidation. However, in recession periods the realizable value of firm's assets is probably low (Shleifer and Vishny 1992), which should incite them to accept conditions that they would ordinarily refuse. Consistent with this intuition, Asquith et al. (1994) provide evidence that rather than exercising their right to call the loan, banks generally prefer to restructure the debt by waiving covenants, delaying principal and interest, or reducing the interest rate.

Income-reducing earnings management may also result from agency relationships with employees. DeAngelo et al. (1994) for example note that by reporting losses, managers portray the firm as seriously troubled, which may be useful to extract concessions from employees who otherwise would doubt the existence and persistence of the firm's difficulties. In support of this assertion, DeAngelo and DeAngelo (1991) show that reported earnings are lower during union renegotiations.

The search for political advantages may also motivate the reduction of earnings. In crisis periods, governments are likely to provide support to firms in financial distress (Peltzman 1976). Governmental support may take various forms. Ahmed et al. (2008) mention that during the Asian financial crisis, the Malaysian government instituted mechanisms to facilitate the debt restructuring of companies. In 2008-2009, governments of many countries provided banks with public funds in order to mitigate the credit crisis.

Firms may also use the economic downturn as a pretext to obtain advantages or oppose new regulations. Because the probability of obtaining governmental aid increases as financial performance worsens, firms have an incentive to deflate earnings. The literature provides evidence of income-reducing earnings management to obtain advantages from the government (Jones 1991; Lim and Matolcsy 1999; Navissi 1999). In an analysis of accounting choices of troubled companies, DeAngelo et al.

(1994) report that several distressed firms used their financial difficulties to argue for import relief or antitrust clearance. Thus, the following hypothesis can be formulated:

H1: Earnings management during the financial crisis tends to be lower than the earnings management after financial crisis.

The Effect of Information Asymmetry on Earnings Management during Financial Crisis

The overriding opinion expressed by academics and regulators in the aftermath of the most severe financial crisis since the Great Depression has been that financial reporting failed in providing transparent and timely information. Investor confidence was low during the economic crisis and share market liquidity was poor. If firms' financial reporting were inadequate or there is information asymmetry, that would further decrease the confidence of investors.

Some researchers have found that information asymmetry can affect earnings management. Agency theory implies the existence of information asymmetry between managers as agents and owners (in this case is a shareholder) as principal. Information asymmetry arises when managers are more aware of internal information and the company's prospects in the future compared to shareholders and other stakeholders. If associated with an increase in the value of the company, when there is asymmetry of information, managers can provide a signal about the state of the company to investors in order to maximize the value of company stock. Given signal can be done through disclosure (disclosure) of accounting information.

Some firms might just have suffered temporarily financial trouble. So management would use income decreasing earnings management and give a clear signal to the market of their underlying economic performance. When information asymmetry is high, stakeholders do not have sufficient resources, incentives, or access to relevant information to monitor's actions, and thus gives rise to practice of earnings manage-

ment (Schipper 1989; Warfield et al. 1995). The literature has suggested that the effect of earnings management is related with a firm's information characteristics. Because shareholders lack sufficient resources, incentives or access to relevant information, it is often difficult for them to have an effective monitoring on manager's actions (Schipper 1989 and Warfield, et al. 1995).

Analytical models have demonstrated that the existence of information asymmetry between firm management and shareholders is a necessary condition for the practice of earnings management (Dye 1988, Trueman and Titman 1988, and Chaney and Lewis 1995). In addition, Richardson (2000) present some empirical evidence that the greater the information asymmetry between management and shareholders, the more likely the firms are to manage accruals and earnings. Finally, Frankel and Li (2004) find that the profit of insider trading is strongly related with characteristics of firms' information environment. Insiders have larger gains when the degree of information asymmetry is greater. Thus, the effectiveness of earnings management to mislead investors may depend on the information environment of the firm. Thus, the following hypothesis can be formulated:

H2: The higher information asymmetry, the higher the earnings management during the period of financial crisis.

RESEARCH METHOD

Data, Population, and Sample

This study uses secondary data from the Indonesia Stock Exchange data centers: Public Companies in the Financial Statement of Master of Science and Doctoral Program Faculty of Economics, University of Gadjah Mada, IDX database is available at the Center for Development of Accounting UGM, and in www.idx.co.id. Sampling was conducted using purposive sampling method which is the method of sample by using the following criteria:

1. Listed on the Stock Exchange and publish audited financial statements are consistent and complete from the year 2008-2011.

2. Types of sample firms are manufacturing firms. Reason took a manufacturing company, because according to Na'im and Hartono (1996) model of accruals is not suitable for non-manufacturing companies. Another reason is to obtain the characteristics of the same company.
3. Company does not undertake acquisitions or mergers.
4. Financial reporting currency is Indonesia Rupiah.
5. Have complete data, whether the data needed to calculate information asymmetry, and earnings management.
6. Stock price data is available for estimation and observation period

Samples were selected based research used purposive sampling method which establishes a number of sampling criteria described above. Based on the criteria described, obtained 220 total samples of observational data consist of 55 samples of the company for a period of four years. After testing the quality of the data, then a total of 37 observations were found to be outliers of data that must be removed to meet the classical assumption test performed. Therefore, from the screening data is the only remaining 183 observations are worthy to be tested (see Table 1).

Research Variables and Measurement

Dependent Variable

Earnings Management through Accrual Manipulation

Earnings management as the dependent variable proxied by discretionary accruals and is calculated by the Modified Jones Model. The reason for choosing this modified Jones models because the model is regarded as the best model in detecting earnings management compared to other models and provide the most robust results (Dechow et al. 1995). The steps in calculating discretionary accruals as follows:

$$TA \text{ (total accrual)} = \text{Net income} - \text{Cash flow from operation} \quad (1)$$

$$Tat/At-1 = \alpha1 (1/At-1) + \alpha2 (\Delta REVt/At-1) + \alpha3 (PPEt/At-1) + \epsilon, \quad (2)$$

Table 1
Purposive Sampling Results

| No | Description | Total |
|---------------------|---|-----------|
| 1 | Manufacturing companies that are listed consecutively on the Stock Exchange during the period 2008 through 2011 | 120 |
| 2 | The Company does not have complete information on the data report available financial consecutively during the study period | (27) |
| 4 | Companies that publish financial statements in foreign currency | (11) |
| 5 | Companies that do not have complete information about the data earnings management and | (4) |
| 6 | The Company does not have complete data on daily stock prices for the independent variable asymmetry of information | (20) |
| 7 | Companies that make acquisitions. | (3) |
| Total sample | | 55 |

where:

A_{t-1} = Total asset in period t-1

ΔREV_t = changing in revenues for period t

PPE_t = *Property, Plan, and Equipment*

$\alpha_1, \alpha_2, \alpha_3$ = Regression coefficients

$NDA = \alpha_1 (1/A_{t-1}) + \alpha_2 (\Delta REV_t - \Delta RECT) / A_{t-1} + \alpha_3 (PPE_t / A_{t-1})$ (3)

where:

$\Delta RECT$ = changing in net receivables for period t

Furthermore, the value of discretionary accruals can be calculated as follows:

$DAC_{it} = TA_{it} / A_{t-1} - NDA$ (4)

where:

DAC_{it} = *Discretionary accruals* for period t

NDA = *Non discretionary accruals*

Earnings Management through Real Activities

This study relies on prior studies that developed proxies for real earnings management. Cohen et al. (2008) base their measures of real earnings management on Roychowdhury (2006) and others. Specifically, they focus on three manipulation methods that would increase bottom-line earnings:

1. acceleration of the timing of sales through increased price discounts or more lenient credit terms, which would abnormally decrease cash from operations;
2. reporting lower cost of goods sold through increased production; and
3. decreasing in discretionary expenses including advertising expense, research and

development expenses, and selling, general, and administrative (SG&A) expenses.

The discretionary or abnormal levels of the above real accounts are measured as follows:

$CFO_t / A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (S_t / A_{t-1}) + \beta_2 (\Delta S_t / A_{t-1}) + \epsilon_t$ (4)

$PROD_t / A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (S_t / A_{t-1}) + \beta_2 (\Delta S_t / A_{t-1}) + \beta_3 (\Delta S_{t-1} / A_{t-1}) + \epsilon_t$ (5)

$DISEXP_t / A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta (S_{t-1} / A_{t-1}) + \epsilon_t$ (6)

where CFO_t is cash from operations in period t, $PROD_t$ is production costs in period t, defined as the sum of cost of goods sold and the change in inventory in period t, and $DEXP_t$ is discretionary expenses, defined as the sum of advertising expenses, R&D expenses and SG&A. The abnormal cash from operations ($ACFO_t$), abnormal production costs ($APROD_t$), and abnormal discretionary expenses ($ADEXP_t$) are the residuals from the above regressions.

$ACFO_t = CFO_t - CFO_t / A_{t-1}$ (7)

$APROD_t = PROD_t - PROD_t / A_{t-1}$ (8)

$ADEXP_t = DISEXP_t - DISEXP_t / A_{t-1}$ (9)

The regressions are run separately for each company and for each year. A negative $ACFO_t$ and $ADEXP_t$ as well as a positive $APROD_t$ would indicate income-increasing earnings management.

Independent Variables

This study uses bid-ask spreads (SPREAD)

as measure of information asymmetry. Following Amihud and Mendelson (1986), this study define SPREAD as the relative bid-ask spread using daily closing bids and asks. The formula for SPREAD as follows:

$$SPREAD_{i,t} = (ASK_{i,t} - BIDI_{i,t}) / (ASK_{i,t} + BIDI_{i,t}) / 2 \times 100 \quad (10)$$

Model to adjust the spread is:

$$SPREAD_{i,t} = \alpha_0 + \alpha_1 PRICE_{i,t} + \alpha_2 VAR_{i,t} + \alpha_3 TRANS_{i,t} + \alpha_4 DEPTH_{i,t} + \alpha_5 ADJSPREAD_{i,t} \quad (11)$$

Where $PRICE_{i,t}$ is ask price (bid), the highest shares of firm i on day t , $VAR_{i,t}$ is variance of daily returns over the study period in the company's stock i and day t , $TRANS_{i,t}$ is the number of transactions of a company's stock i on day t , $DEPTH_{i,t}$ is average number of shares of company i in all quotes, $ADJSPREAD_{i,t}$ is residual error is used as a measure SPREAD adjusted for firm i on day t .

Control Variable

Following prior research, this study includes the company size, because larger firms have less information asymmetry (Atiase 1985, Bamber 1987). Firm size is a scale in which the size of the company can be classified according to a variety of ways, including: log of total assets (Marihot and Doddy 2007), the log of total sales (Nuryaman 2008), market capitalization (Halim et al. 2005). Firm size in this study uses a proxy total year-end asset (Ln TA).

Method of Data Analysis

Analysis of the data used to test the hypothesis 2 in this study was to use multiple regression models with the following equation:

$$DA_{i,t} = a_0 + a_1 ADJSPREAD_{i,t} + a_2 UPT_{i,t} + e_{i,t} \quad (12)$$

$$ACFO_{i,t} = a_0 + a_1 ADJSPREAD_{i,t} + a_2 UPT_{i,t} + e_{i,t} \quad (13)$$

$$APROD_{i,t} = a_0 + a_1 ADJSPREAD_{i,t} + a_2 UPT_{i,t} + e_{i,t} \quad (14)$$

$$ADEXP_{i,t} = a_0 + a_1 ADJSPREAD_{i,t} + a_2 UPT_{i,t} + e_{i,t} \quad (15)$$

Since the three separate real account manipulation measures have different effects

on bottom-line earnings, this study do not make predictions about the sum of real earnings management ($AREAL = ACFO_{i,t} + APROD_{i,t} + ADEXP_{i,t}$).

DATA ANALYSIS AND DISCUSSION

Descriptive Statistics

Table 2 presents descriptive statistics for all of the variables comprising the mean, standard deviation, minimum and maximum values. Earnings management is proxied by discretionary Accrual shows the average discretionary accruals amounting to -0.0507 which indicates decreasing discretionary accruals. ACFO, APROD, and ADEXP as a proxy for real earnings management suggests manipulation methods that will improve the bottom line. This is consistent with Roychowdury (2006) and Cohen et al. (2008).

Results

Earnings Management During and Post Financial Crisis

Hypothesis testing is first done by paired sample T-test to show whether there are differences in discretionary accruals between during crisis and post-crisis. Table 3 shows the results of testing of discretionary accruals between during crisis to post-crisis with a significance level of 5% is produced sig. (2-tailed) of 0.516. Significance values above 5% ($0.000 < 0.05$), the test results showed no difference in DA. It can be explained that DA is not significantly different during crisis and post crisis period, indicating that management engage in less accrual manipulation following the passage of SarbOx (Ibrahim et al. 2011). In crisis period, firms are subject to increased monitoring from auditors, creditors and other stakeholders, which should result in managers having less discretion to manage earnings (Chia et al. 2007)

Table 3 shows the results of testing of ACFO between during crisis and post-crisis with a significance level of 5% is produced sig. (2-tailed) of 0.000. Significance values far below 5% ($0.000 < 0.05$), the test results showed a highly significant value

Table 3 shows the results of testing of

Table 2
Descriptive Statistics

| <i>Variable</i> | <i>N</i> | <i>Minimum</i> | <i>Maximum</i> | <i>Mean</i> | <i>Std. Deviation</i> |
|-----------------|----------|----------------|----------------|-------------|-----------------------|
| DA | 183 | -0.5545 | 0.6601 | -0.0507 | 0.1652 |
| ACFO | 183 | -2.9304 | 1.9830 | -0.2115 | 0.5446 |
| APROD | 183 | -50.2246 | 20.2760 | 2.0157 | 5.4259 |
| ADEXP | 183 | -3.1223 | 1.6681 | -0.0502 | 0.5416 |
| ADJSPREAD | 183 | 0.0005 | 5.7182 | 1.1168 | 1.6922 |
| UP | 183 | 24.5621 | 29.9764 | 27.5120 | 1.1289 |

APROD between during crisis and post-crisis with a significance level of 5% is produced sig. (2-tailed) of 0.000. Significance values far below 5% ($0.000 < 0.05$), the test results showed a highly significant value.

Table 3 shows the results of testing of ADEXP between during crisis to post-crisis with a significance level of 5% are produced sig. (2-tailed) of 0.000. Significance values far below 5% ($0.000 < 0.05$), the test results showed a highly significant value.

From the test results with the paired t-test showed that there is a difference between real earnings management during the crisis and after the crisis. Contraction periods should thus be associated with less earnings management and, consequently more conservative (i.e. more timely) earnings (Jenkins et al. 2009). empirical evidence from the 1997 Asian financial crisis and earnings management studies provide some evidence that managers engaged in more income-decreasing earnings management during the crisis period (Saleh and Ahmed 2005; Ahmed, Godfrey, and Saleh 2008).

Hypothesis 1 is supported and confirmed. Jenkins et al. (2009) that the search for political advantages may also motivate the reduction of earnings. Because the probability of obtaining governmental aid increases as financial performance worsens, firms have an incentive to deflate earnings. Empirical evidence from the 1997 Asian financial crisis and earnings management studies provide some evidence that managers engaged in more income-decreasing earnings management during the crisis period (Saleh and Ahmed 2005; Ahmed, Godfrey, and Saleh 2008).

The Effect of Information Asymmetry on Earnings Management during Financial Crisis

Table 4 presents the OLS parameter estimates with the level of significance for all regression models (models 1, 2, 3, and 4). Information asymmetry in model 1 does not affect the accrual of earnings management during the crisis period ($t_{\text{stat}} = 1.061$, $p > 0.05$). This indicates that after a period of crisis in 1998 and a decline in the use of Sarbox earnings manipulation using the accrual method of accounting. Li et al. (2008) show that accrual earnings management has declined following the passage of Sarbox.

Decrease the use of the accrual basis of lower income keinformativan thus reducing information asymmetry. Grossman and Stiglitz (1980), Verrecchia (1982 2001), Diamond (1985), Baiman and Verrecchia (1996), Leuz and Verrecchia (2000) give evidence that the level of information asymmetry is inversely related to the informativeness of public information. In terms of litigation, earnings management through revenue misstatement increases the likelihood of litigation; roommates are consistent with Palmrose et al. (2004) who demonstrate a positive relationship between litigation and misstatement of revenue after 1998 crisis. As a result, investors will be misled by the information accrual earnings management.

Model 2 shows that the information asymmetry significantly affects earnings management through real activities (operating cash flow). These results are consistent with previous studies in which Oktorina (2008) and Sahabu (2009) provide evidence that firms in the asymmetry information try

Table 3
DA, ACFO, APROD, ADEXP During and Post-Crisis

| Variables | t-statistics | Prob. (2-tailed) | Description |
|-----------|--------------|------------------|---------------------|
| DA | 0.657 | 0.516** | No difference in DA |
| ACFO | 5.186 | 0.000** | Difference in ACFO |
| APROD | 4.325 | 0.000** | Difference in APROD |
| ADEXP | 1.090 | 0.000 | Difference in ADEXP |

** Significant at level $\alpha=5\%$.

to manipulate earnings through real activities by using cash flow operations. Gunny (2005) also showed that real earnings management is very significantly related to earnings and future cash flows are low. Model 3 indicates that when there is asymmetry information, firms are also doing real activities manipulation through production costs. According to Roychowdhury (2006), companies doing real activities manipulation of earnings through cost of production tend to show unusually high production cost. Model 4 shows that the information asymmetry significantly affects real earnings management through real discretionary costs. These results are consistent with previous studies in which Roychowdhury (2006), Sari (2008), and Andayani (2008) have demonstrated the existence of real earnings management practices for discretionary expenses, are generally recorded when the costs are incurred.

Sari (2008) states that in an economy with a high level of investor protection (such as during the crisis), the manager prefers to do the manipulation of earnings management through real activities than through accruals manipulation. Although the economy with a high level of investor protection, the manager still has a higher discretionary earnings management through real activities manipulation than accruals. Income can be manipulated upwards through real accounts by cutting real expenditures, reducing cost of goods sold by increasing production, or increasing sales through offering lenient terms and discounts to customers, which would reduce operating cash flows.

Information asymmetry coefficients measured by ADJSPREAD has a positive value for the model. The higher the difference between the bid-ask spread then the

higher the information asymmetry. The higher asymmetry between managers and shareholders can lead to earnings management primarily through real activities during the crisis. This result is consistent with Frankel and Li (2004) that the profit of insider trading is strongly related with characteristics of firms' information environment. Insiders have larger gains when the degree of information asymmetry is greater. Hypothesis 2 is supported.

CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

This study examines the effect of information asymmetry on earnings management during the recent financial crisis. This study first examine earnings management around financial crisis and find that earnings management lower significantly during the crisis, especially for real earnings management. There is no evident for accrual earnings management in this research. These results suggest that the SarbOx Act of 2002 was designed to reduce earnings management and become more intensive to reduce earnings management, specifically through accrual accounts.

This study gives evidence of how the presence of information asymmetry affects management incentives to manage earnings, especially through real activities. The level of earnings management increases as the level of information asymmetry increases. When information asymmetry is high, stakeholders may not have the necessary information to undo manipulated earnings. Another possible explanation is that the existence of firms with high levels of information asymmetry is evidence of shareholders without sufficient resources, incentives, or access to relevant information to manager's action,

Table 4
Regression Results

| Variable | Coeff. | Std. Error | t-stat | Prob. | Adj. R ² | F-stat. (Prob.) |
|--|--------|------------|--------|-------|---------------------|-----------------|
| Model 1: $DA_{i,t} = \alpha_0 + \alpha_1 ADJSPREAD_{i,t} + \alpha_2 UP_{i,t} + e_{i,t}$ | | | | | | |
| ADJSPREAD | 2.573 | 2.425 | 1.061 | 0.292 | 0.093 | 3.687 |
| UP | 0.005 | 0.002 | 2.578 | 0.011 | | (0.000) |
| Model 2: $ACFO_{i,t} = \alpha_0 + \alpha_1 ADJSPREAD_{i,t} + \alpha_2 UP_{i,t} + e_{i,t}$ | | | | | | |
| ADJSPREAD | 0.192 | 0.073 | 2.645 | 0.009 | 0.148 | 5.078 |
| UP | -0.049 | 0.013 | -3.770 | 0.000 | | (0.000) |
| Model 3: $APROD_{i,t} = \alpha_0 + \alpha_1 ADJSPREAD_{i,t} + \alpha_2 UP_{i,t} + e_{i,t}$ | | | | | | |
| ADJSPREAD | 0.505 | 0.371 | 1.363 | 0.176 | 0.231 | 9.462 |
| UP | -0.598 | 1.101 | -0.543 | 0.589 | | (0.000) |
| Model 4: $ADEXP_{i,t} = \alpha_0 + \alpha_1 ADJSPREAD_{i,t} + \alpha_2 UP_{i,t} + e_{i,t}$ | | | | | | |
| ADJSPREAD | 0.688 | 0.499 | 1.378 | 0.171 | 0.129 | 4.216 |
| UP | -4.044 | 1.483 | -2.728 | 0.007 | | (0.000) |

which may give rise to the practice of earnings management.

Some limitations of the study include generalizeability and methodology issues. Specifically, this study focuses on a very specific setting, global financial crisis in 2008. The conclusions of the study may not be generalizeable to other settings. This is an avenue for future research. Furthermore, the post global financial crisis period is small due to data limitations which may impact the results. Finally, as in all earnings management studies, the manipulation measures may not fully capture the magnitude and nature of manipulation.

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