



Analysis of Operating Cash Flow to Detect Real Activity Manipulation and Its Effect on Market Performance

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ABSTRACT

Deviating from normal business practices to manipulate reported income is defined as real earnings management (Roychowdhury, 2006). A firm can alter the level of accruals to obtain the desired level of a high stock price and/or earnings. The desire to achieve a high stock price and/or earnings to meet the earnings benchmark induces corporate managers to engage in earning management, inflating current earnings at the expense of the firms' economic values. To meet a certain earnings target, managers can wait until the year-end to use discretionary accruals to manage reported earnings. However, this strategy runs the risk that the amount of earnings that needs to be manipulated is greater than the available discretionary accruals because the discretion on accruals is bounded by GAAP (Barton and Simko, 2002). Real activities manipulations are less subject to this constraint. The focus of this study is the real activities manipulations because the auditors and regulators are less likely to be concerned with such behaviors. The results suggest that firms are likely to engage in real activity manipulation through operating cash flow. Further analysis reveals that firms more likely to engage in real activity manipulation have higher market performance than do their counterpart.

Keywords: Operating Cash Flow, Real Activity Manipulation, Market Performance

JEL Classifications: M02, M4, M41

1. INTRODUCTION

Managers perform earning management due to information asymmetry between management and owners of the company. The existence of this information asymmetry condition provides greater flexibility and opportunity to managers for misleading earnings reporting to users of financial statements. Both the owner as a principal and management as an agent have personal interests that may pose a conflict of interest. In addition to the interests of the owner of the company that must be met, managers also have personal goals that may be different from the owner.

Healy and Wahlen (1999) documented two forms of earnings management. The first form involves choosing appropriate accounting methods to reach desired levels of earnings and the second uses the timing and/or magnitude of operating decisions to reach desired earnings (i.e., real activities manipulation). The latter, which, merely contributes to operating decisions, may be harder for an outsider to observe (Schipper, 1989) and is unlikely to be judged violations of securities law.

According to Roychowdhury (2006), "Real activity manipulation is defined as departures from normal operational practices, motivated by managers' desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations." Certain methods for manipulating real activities, such as sales promotions using discounted price and/or a discretionary expenditures reduction, are optimal given certain economic circumstances.

Previous studies on the real activities manipulation have been conducted by several researchers. Gunny (2009) describes four techniques in real activities manipulation, namely, reducing discretionary expenses of research and development, reducing discretionary expenses of sales, administration and general affairs, applying fixed assets sales timing with the aim to increase profits, and giving price discounts or waivers of credit to increase sales or reduce production costs. Roychowdhury (2006) stated that real activities are manipulated through operating cash flow, production costs, and discretionary costs.

Oktorina and Hutagaol (2008) discusses the manipulation of real activities and its impact on market performance. The impact of real activities manipulation through cash flow from operation on market performance is difference, which is the company's market performance that allegedly tends to perform real activities manipulation through cash flow from operation is higher than the company's market performance that allegedly tends not to perform real activities manipulation through cash flow from operation.

Roychowdhury (2003) detects abnormally low cash flow from operations and abnormally high production costs for companies that report small positive profits at the annual level. The evidence is consistent with firms trying to increase reported annual earnings beyond zero by giving price discounts to boost sales temporarily and by overproduction. Another evidence suggests that some of these firms reduce discretionary expenses to report higher margins.

The focus of this paper is the analysis of cash flow from operations to test whether management undertake real activities manipulation and its impact on company market performance. It is expected that this paper be useful for studies related to the cash flow because cash flow statement is significant to management for planning the proper cash and maintaining the proper match between cash inflows and outflows.

Our findings are consistent with the findings of the studies conducted by Roychowdhury (2003) and Oktorina and Hutagaol (2008) showing that the company likely to manipulate real activities through cash flow operations have abnormally lower cash flows operating activities than it should be. The company's market performance that allegedly tends to perform real activities manipulation through cash flow from operation is higher than the company's market performance that allegedly tends not to perform real activities manipulation through cash flow from operation.

The paper proceeds as follows. In Section 2, the authors review the literature and empirical research conducted on both real activities manipulation through cash flow from operation and company's market performance. In Section 3, the authors develop hypotheses the real activities manipulation can be detected through cash flow from operating activities; LQ-45 listed companies likely to manipulate the real activities through cash flow from operating activities tend to have higher market performance than companies likely not to undertake. In Section 4, the authors introduce the types of data and models used in this paper. Section 5 presents results and interpretation. Section 6 contains the conclusions of this paper and the implications of the evidence and potential areas for further research.

2. LITERATURE REVIEW

2.1. Signaling Theory

Signaling theory is useful for describing behavior when two parties (individuals or organizations) have access to different information. Typically, one party, the sender, must choose whether and how to communicate (or signal) that information, and the other party, the receiver, must choose how to interpret the signal (Connelly, 2011). Signaling theory states that company's executives who have better information about the company are encouraged to provide

this information to prospective investors in which the company can enhance corporate value through its reporting by sending a signal through its annual report. The information submitted by the manager about the good condition of the company through the financial statements is a signal that the company has done its operations well. Good signal will either be responded well by other parties (Scott, 2009).

2.2. Earnings Management

The main objective of firms is to maximize shareholders' value by exploiting the assets acquired by equity capital and debt. To raise capital, shareholders should be incentivized to invest, which only occurs if they expect positive future firm performance. It is therefore in the firm's interest to report positive earnings, positive earnings growth and to meet analysts' forecasts in order to acquire capital (Degeorge et al. 1999). Scott (2009, p. 403) states that earnings management is the choice by a manager of accounting policies to achieve some specific objectives.

Since earnings are composed of cash flow from operations and accruals, firms have two options to manage earnings. First, firms can manage earnings through deviation from the normal business operations, so that the cash flow from operations will be affected. Deviating from normal business practices to manipulate reported income is defined as real earnings management (Roychowdhury, 2006). Second, a firm can alter the level of accruals to obtain the desired level of earnings. Managers use judgments in financial reporting which can be defined as accrual-based earnings management (Healy and Wahlen, 1999).

2.3. Earnings Management through Real Activities Manipulation

Oktorina and Hutagaol (2008) states that real activities manipulation is manipulation done by management through daily activities of the company during the current accounting period. Roychowdhury (2006) describes the definition of real activities manipulation as differences in operating practices carried out with normal operating practices, which are motivated by the desire of management to provide any wrong insight to the shareholders so that they believe that certain financial reporting objectives have been achieved according to the company's normal operating practices. According to Roychowdhury (2006), techniques which can be performed in real activities manipulation include sales management, overproduction, and reduction in discretionary expenses.

2.4. Operating Cash Flow and Real Activities Manipulation

Operating cash flow is cash flow from the principal revenue-producing activities, which involve cash effect of transactions that enter into the determination of net income in the income statement. Operating cash flow is used to determine whether the operation of the company is sufficient to repay short-term debt and to pay the costs related to the operation of the company. Operating cash flow shows cash receipts and expenditures of the company's operations.

Sales management is the real activities manipulation techniques that will affect the operating cash flow. Management boosts sales

by giving discounts and credit term payment for goods sold. This will increase sales, which in turn makes the profits generated by the company higher, but the opposite condition affects the cash flow statement, primarily on cash flow of operational activities. Cash flow of operational activities of the company will be lower than if the company is selling normally. The company receives this small cash because of an increase in accounts receivable due to the company selling on credit and the discounted price that requires the company to cut the price of the sale. Therefore, the cash received by the company is smaller than normal sale (Ji'ah and Pujiati, 2013).

2.5. Operating Cash Flow and Market Performance

Abnormal return is one of the indicators used to look at the market performance of the company. Jogyanto (2008, p. 549) states that abnormal return is the excess of the return that is actually going to normal return. Abnormal return is positive if the actual return is greater than the expected return while abnormal return is negative if the actual return is smaller than the expected return.

Market performance is viewed from a long-term stock return. Market performance is a performance measure based on the ability of the company doing the return on company's long-term investment or stock returns. High corporate profit will attract investors to buy company's shares. Higher demand for the stocks will lead to the company's higher stock price. The high price of company's stock makes the rate of return on the stock also high, thus indicating high company's market performance.

Bowen et al. (1987) found that the operating cash flow has additional information other than earnings forwarded to the market. Operating cash flow and aggregate accruals have a relationship with abnormal return (Rayburn, 1986) as well as components of operating cash flows have a relationship with return (Livnat and Zarowin, 1990). The Impact of operating cash flow on the market performance has been investigated by Diana and Kusuma (2004) who found that operating cash flow is important in explaining returns of securities.

2.6. Free Cash Flow (FCF) Theory

FCF is cash flow in excess of that required to fund all of a firm's projects that have positive net present values when discounted at the relevant cost of capital. Such FCF must be paid out to shareholders if the firm is to be efficient and to maximize value for shareholders. Payment of cash to shareholders reduces the resources under managers' control, thereby reducing managers' power and potentially subjecting them to the monitoring by the capital markets that occurs when a firm must obtain new capital. Financing projects internally avoids this monitoring and the possibility that funds will be unavailable or available only at high explicit prices (Jensen, 1987).

Positive FCF indicates that the company is generating more cash than is used to run the company and reinvest to grow the business. A negative FCF number indicates the company is not able to generate sufficient cash to support the business. FCF is similar to earnings for a company without the more arbitrary adjustments made in the income statement. As a result, FCF can help measure

the performance of a company in a similar way to looking at the net income line. However, the cash flow statement is a better measure of the performance of a company than the income statement.

3. HYPOTHESES DEVELOPMENT

To avoid reported losses in order to get the bonus and good performance assessment for both companies and individuals within the company real activities are manipulated. There are many factors affecting the reported earnings used in practice in profit and loss accounts, for example by increasing sales by offering rebates, allowing low-interest credit sales, and providing soft loan. In this way, the reported sales increase and accordingly, the reported earnings increase in the period.

These real activity manipulations also have an impact on reported cash flow in the same period by offering discounts, reduced advertising expenses, reduced sales expenses, overproduction, and reduced research and development expenses. As a result, the cash flow from operating activities is lower than normal condition or abnormally low.

Cash flow from operating activities will be used to determine whether the company attempts to manipulate the real activities, as shown in the mean of "abnormally low" operating cash flow (below zero). The zero mean of 'abnormal' operating cash flow implies the same actual cash flow and normal cash flow. This leads to the following hypothesis:

H1: The real activity manipulation can be detected through cash flow from operating activities.

Cash flow from operating activities had an impact on market performance (Livnat and Zarowin, 1990). Oktorina and Hutagaol (2008) argue that the real activities manipulation by company through cash flow from operating activities has significant difference in mean of abnormal cash flow operations. The impact of real activities manipulation through cash flow of operating activities on market performance is different. The market performance of companies that allegedly tend to manipulate the real activities through cash flow of operating activities is higher than the market performance of companies that allegedly tend not to manipulate the real activities through cash flow operations because high profit is one of good performance indicator for company that respond to the rise in company's stock prices. This leads to the following hypothesis:

H2: Companies likely to manipulate the real activities through cash flow from operating activities tend to have higher market performance than the counterpart companies.

4. DATA AND ESTIMATION MODELS

4.1. Data Introduction

The population of this study is the firms listed on the Indonesian stock exchange and the authors use the firms that include in calculate LQ-45 index from 2012 to 2015. LQ-45 Index is a market

capitalization of 45 most liquid and large capitalized being an indicator of liquidity. LQ-45 uses 45 stocks selected based on the liquidity stock and adjusted every 6 months (every early February and August). Thus, the stocks contained in the index will always change. LQ-45 index consists of 45 stocks that have been chosen through a variety of selection criteria, which will consist of stocks with liquidity and high market capitalization. Based on the sample criteria 25 firms were selected as the sample, thus there are 100 firm year observation. The authors use these samples to test the hypotheses in this paper.

4.2. Estimation Models

Before hypothesis testing, the authors will make regression analysis to determine the cash flow from normal operating activities. To estimate the model, the authors use Roychowdhury (2003) model shown below:

$$CFO_t/A_{t-1} = \alpha(1/A_{t-1}) + \beta_1(S_t/A_{t-1}) + \beta_2(S_{t-1}/A_{t-1}) + \varepsilon$$

CFO_t/A_{t-1} : Cash flows from operating activities in year t scaled by total assets at year t-1

$\alpha(1/A_{t-1})$: Intercept divided by total assets at year t-1 in order the cash flow from operating activities do not have a value of 0 when sales and sales lag is 0

(S_t/A_{t-1}) : Net sales in year t divided by total assets at year t-1

(S_{t-1}/A_{t-1}) : Net sales in year t-1 divided by total assets at year t-1.

To calculate the “abnormal” CFO for every firm-year we used the “actual” CFO minus the “normal” CFO calculated using estimated coefficients from the corresponding industry-year model and the firm-year’s sales and lagged assets.

To test the first hypothesis which states the real activity manipulation can be detected through cash flow from operating activities. The real activities manipulation through cash flow from operating activities, the mean of “abnormal” operating cash flow below 0, determined by the mean and the significance of “abnormal” CFO. If the mean of “abnormal” CFO of all samples were below 0 and significant, it can be said that the companies have made the real activities manipulation through CFO. Otherwise, if the mean of “abnormal” CFO is above 0 it means that there is no real activities manipulation by the companies through CFO. The mean of “abnormal” CFO resulted from descriptive statistics and the significance level was tested using one samples t-test.

To test the second hypothesis which state that companies likely to manipulate the real activities through cash flow operating activities tend to have higher market performance than the counterpart companies using two independent samples test. Proxy for market performance is FCF as fundamental indicator for most investors. FCF formula is shown below:

$$FCF = CFO - (\text{net capital expenditures} + \text{change in working capital})$$

CFO: Increase or decrease in cash flow from operating activities

Net capital expenditure: Ending balance of fixed assets - beginning balance of fixed assets

Change in working capital : Working capital at year-end - working capital at beginning year.

5. EMPIRICAL RESULTS AND INTERPRETATION

5.1. Descriptive Statistics

As mentioned above the “abnormal” operating cash flow can be used to detect real activity manipulation by management. The “abnormal” operating cash flow is calculated with the “actual” operating cash flow minus the “normal” operating cash flow. The “normal” operating cash flow can be calculated using a regression model advanced by Roychowdhury (2003). Table 1 below shows the results of the descriptive statistics of the variables used to calculate “normal” operating cash flow:

Table 1 presents the results of descriptive statistics. The mean of operating cash flow is 63.94% relative to total assets. The median is 0.451328 and standard deviation is 0.877970. The mean of sales at t period is greater than the sales at t-1 period 16% relative to total assets. The median of sales at t period is 0.508399 and the sales period t-1 is 0.374394. Subsequent regression coefficients for calculating the ‘normal’ operating cash flows are presented by Table 2.

Table 2 shows that the two sales variables are statistically significant, so the coefficient can be used to estimate the “normal” operating cash flow. Furthermore, the “actual” operating cash flow minus the “normal” operating cash flow gives ‘abnormal’ operating cash flow.

Descriptive statistics of “abnormal” operating cash flow (ABN_CFO) and FCF (FCF) are presented on Table 3.

Table 3 presents the results of descriptive statistics. The mean of “abnormal” operating cash flow is -7.4861. The median is -52.8216 and standard deviation is 934.7154. The mean, median, and standard deviation of FCF respectively are 38.9375, -1.1992, and 681.5543. The mean of “abnormal” operating cash flow of -7.4861 indicates that the company had manipulated the real activities. Roychowdhury (2003) argues that companies likely to manipulate do the real activities show lower of operating cash flow.

Table 1: Descriptive statistics variables used for estimating “normal” operating cash flow

Variables	Mean	Median	Maximum	Minimum	Standard deviation
CFO_t/A_{t-1}	0.639409	0.451328	8.055740	0.082647	0.877970
$1/A_{t-1}$	0.000001	0.000000	0.000008	0.000000	0.000000
$Sales_t/A_{t-1}$	0.718454	0.508399	8.922963	0.095011	0.972373
$Sales_{t-1}/A_{t-1}$	0.556479	0.374394	6.451829	0.041962	0.710912

Table 2: Coefficients regression for “normal” operating cash flow

Variables	Coefficients	P
Constanta	0.000299	0.999
$Sales_t/A_{t-1}$	0.951	0.000
$Sales_{t-1}/A_{t-1}$	0.968	0.000
F-stat=0.000		

Table 3: Descriptive statistics of ABN_CFO and FCF

Variables	Mean	Median	Maximum	Minimum	Standard deviation
ABN_CFO	-7.486140	-52.821643	9358.967205	876.197918	934.715451
FCF	38.937599	-1.199245	6583.872590	861.880240	681.554371

FCF: Free cash flow

Table 4: The results of first hypothesis testing

Variable	Mean	P	Explanation
ABN_CFO	-7.486140	0.039*	H1 be accepted

*: Level of significance of 5%

Table 5: Descriptive statistics for the market performance of companies that likely undertake manipulation of real activities through cash flow from operating activities and companies likely not undertake

Variable	Likely undertake manipulation=54's			Likely not undertake manipulation=46's		
	Mean	Median	Standard deviation	Mean	Median	Standard deviation
FCF	955.1811	247.0357	1,602.6589	565.8051	355.0426	9,581.2833

FCF: Free cash flow

Table 6: The statistics result on market performance between the companies likely undertake manipulation and the companies likely not to undertake manipulation

Descriptions	FCF
Mann-Whitney U	0.000
Wilcoxon W	1485
Z	-8.590
P	0.000

FCF: Free cash flow

However, to know whether the mean of "abnormal" operating cash flow is statistically significant the one sample t-test was used. The results are shown in Table 4.

Table 4 presents the probability (P-value) of ABN_CFO is 0.039 that is significant at 5%. Therefore, manipulation of real activities can be detected through cash flow from operating activities.

Descriptive statistics for the market performance in this case is represented by the FCF for the entire sample likely to manipulate real activities through cash flow from operating activities and likely not manipulate real activities can be seen in Table 5.

As we see in Table 5 above the mean of companies likely to undertake manipulation is greater than the mean of companies likely not undertake manipulation (955.1811 > 565.8051). Thus, the market performances of companies that likely undertake real manipulation through operating cash flow are different from companies that likely do not undertake. Further testing to ensure whether the mean difference between companies likely to undertake manipulation and companies likely not to undertake manipulation is different significantly, it can be seen in Table 6.

Table 6 shows the P=0.000, which implies that market performance of likely undertake manipulation companies and likely not undertake manipulation companies are significantly different. In this case, the market performances of likely undertake manipulation companies are higher than likely not undertake manipulation companies. Therefore, these results are consistent with hypothesis

H2. It is understood that in a way manipulation of the real activities could reach a certain profit target at a certain period, which in turn would increase the company's market performance as reflected by the increase in the company's stock price so that more and more managers have an incentive to manipulate the real activities.

6. CONCLUSION AND FUTURE RESEARCH

This study examines whether operating cash flow could detect the real activity manipulation and its effect on market performance. Our study finds evidence consistent with Roychowdhury (2003) and Oktorina and Hutagaol (2008) in that there is a significant mean difference in "abnormal" operating activities cash flow. In other words, the operating activities cash flow might be used to detect real activities manipulation.

Further analysis reveals that the effect of real activities manipulation through operating activities cash flow on the market performances is different significantly. Companies likely to undertake the real activities manipulation will have higher market performances than companies likely not to undertake.

The findings have implications for investors, auditors and regulators, respectively. Investors should realize that firms that face financial distress or high industry competition might manage earnings to meet short-term targets. Therefore, it is recommended to analyze the operating activities cash flow thoroughly before investing in a firm. Furthermore, auditors should be more skeptical when auditing a firm that faces high industry competition and financial distress as it is likely that the firm applies real earnings management. Regulators should increase the regulations in order to keep these firms from applying real earnings management.

An important and very interesting issue for further research is to use the categories in the components of operating activities cash flow in order to see the impact of the components in the cash flow of operating activities on the market performance. Otherwise, it can use proxy cumulative abnormal return as a proxy for market performance.

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