

THE INFORMATIVENESS OF EARNINGS AND OPERATING CASH FLOWS : EMPIRICAL EVIDENCE FROM THE STOCK EXCHANGE OF THAILAND

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บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาว่ากำไรของบริษัทและกระแสเงินสดจากกิจกรรมการดำเนินงานในปัจจุบัน สามารถใช้เป็นข้อมูลสำคัญในการพยากรณ์กระแสเงินสดจากกิจกรรมการดำเนินงานและราคาหุ้นของบริษัทในอนาคตได้หรือไม่ โดยกลุ่มตัวอย่างที่ใช้ในงานวิจัยในครั้งนี้ คือ บริษัทที่จดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย ยกเว้น บริษัทที่อยู่กลุ่มธุรกิจการเงิน จากการวิเคราะห์ข้อมูลในปี 2544 ถึง 2551 โดยใช้การวิเคราะห์การถดถอย ผลการวิจัยพบว่า กำไรของบริษัทและกระแสเงินสดจากกิจกรรมการดำเนินงานในปัจจุบัน มีความสัมพันธ์ในเชิงบวกกับกระแสเงินสดจากกิจกรรมการดำเนินงานและราคาหุ้นของบริษัทในอนาคต และเมื่อได้มีการทดสอบความแม่นยำเพื่อประเมินความสามารถของกำไรของบริษัทและกระแสเงินสดจากกิจกรรมการดำเนินงานในปัจจุบัน ในการพยากรณ์กระแสเงินสดจากกิจกรรมการดำเนินงานและราคาหุ้นของบริษัทในอนาคต โดยใช้ข้อมูลในปี 2552 และ 2553 ผลการศึกษาที่ได้ คือกำไรของบริษัทและกระแสเงินสดจากกิจกรรมการดำเนินงานในปัจจุบัน สามารถใช้เป็นเครื่องมือ เพื่อพยากรณ์กระแสเงินสดจากกิจกรรมการดำเนินงานในอนาคต ได้ดีกว่า ราคาหุ้นของบริษัทในอนาคต โดยผลการวิจัยในครั้งนี้จะเป็นข้อมูลสำคัญที่ช่วยให้ผู้ที่มีส่วนได้เสียที่เกี่ยวข้องกับบริษัท เช่น ผู้ถือหุ้น นักลงทุน และอื่น ๆ ตัดสินใจในการลงทุนได้ถูกต้อง

คำสำคัญ : กำไรของบริษัท กระแสเงินสดจากกิจกรรมการดำเนินงาน ประเทศไทย

Abstract

This paper is aimed to examine whether current earnings and current operating cash flows have the ability to predict future operating cash flows and future stock prices in the case of nonfinancial firms listed on the Stock Exchange of Thailand. Using the 2001-2008 annual data, the results from the regression analysis reveal that current earnings and current operating cash flows are positively associated with future operating cash flows and future stock prices. Moreover, in testing the predictive ability of current earnings and current operating cash flows, the 2009-2010 out-of-sample data were employed and the results show that current earnings and current operating cash flows are able to predict future operating cash flows better than future stock prices. Results from this study then help firms' stakeholders have additional financial information in making investment decisions.

Keywords : Earnings, Operating cash flow, Thailand

JEL Code : M41

Introduction

The ability of firms in generating cash flows is one of the major considerations of firms' stakeholders when making investment decisions. These stakeholders attempt to search for assisting tools in analyzing whether the target firms would be able to generate future returns effectively in the form of dividends and/or capital gains. In order to analyze the ability of firms in generating future returns, an examination on the ability of firms in generating future cash flows should also be done. Hence, to predict future cash flows, it will be more useful to employ the historical figures shown in the financial statements (Collins, Maydew, & Weiss, 1997).

Dudney, Jirasakuldech and Zorn (2008) asserted that cash flows and earnings are relevant and both of them are common figures considered by many investors at the very first step in making decisions (Ball & Brown, 1968). Therefore, investors can apply the information regarding firms' earnings for the purpose of predicting future cash flows. Besides earnings, many prior studies found out that current cash flows itself can be a good predictor

of future cash flows (Bowen, Burgstahler, & Daley, 1986; Percy & Stokes, 1992; Finger, 1994; Subatnieks, 2007; Farshadfar, Ng, & Brimble, 2008; Habib, 2010). Moreover, prior studies have investigated the ability of current earnings and current cash flows in predicting future stock prices (Ball & Brown, 1968; Beaver & Dukes 1972; Collins, et al., 1997; Kim & Kross, 2005; Liu, Nissim, & Thomas, 2002, 2007) as stock prices can be a measurement of firm's future cash flows. Stock prices represent the value of firm's securities affected by the firm's ability to generate cash flows (Dudney, et al., 2008; Habib, 2010).

Therefore, prior studies aforementioned revealed that current earnings and current cash flows are two primary variables used to predict future cash flows, in which the future cash flows itself can also be measured by future stock prices. This is an interesting issue to be investigated in the case of Thailand as those studies were conducted in foreign countries with controversial results. Therefore, the primary objective of this study was to investigate whether current earnings and current operating cash flows are able to predict future operating cash flows

and future stock prices by using the financial data of nonfinancial firms listed on the Stock Exchange of Thailand during 2001 to 2010.

Literature Review

The Financial Accounting Standard Board (FASB) states that financial reporting should provide information to help all firms' stakeholders in assessing the amounts, timing, and uncertainty of firms' net cash flows. To assess the ability of firms to generate future cash flows, the earnings prepared on accrual basis is valuable information which is preferred to the current cash flows itself (FASB, 1978). According to this FASB's assertion, many researchers attempted to prove the correctness of the FASB's statement and to examine the usefulness of earnings and cash flows to predict future cash flows.

Greenberg, Johnson, and Ramesh (1986) attempted to prove FASB's assertion that earnings can indicate firm's ability to generate future cash flows rather than current cash flows itself. Using the 1963-1982 data of all industries, they found out that current earnings have superior predictive ability over current cash flows itself. Although there existed an autocorrelation problem, after eliminating such statistical problem, results remained unchanged. Similar to the study of Greenberg, et al. (1986), Dechow, Kothari, and Watts (1998) investigated the ability of current earnings and current cash flows to predict future cash flows. Using annual financial data from 1963 to 1992, they found that the current earnings is better than current cash flows in predicting future cash flows. Furthermore, Barth, Cram, and Nelson (2001) extended the study of Dechow, et al. (1998). They aimed at testing the predictive ability of earnings and cash flows towards future cash flows, but adding current and two lags of aggregate earnings in predicting multiple lags of cash flows. Using the Compustat annual data of all industries, excluding

finance industry, from 1987 to 1996, results revealed that aggregate earnings have the ability to predict future cash flows up to six lags of cash flows. Moreover, Kim and Kross (2005) found an increasing relationship over time between current earnings and future operating cash flows for the full sample test, the survived firms test and all sub-period tests. It can be concluded that the current earnings are significantly related to the future cash flows.

Although many prior studies have evidenced that current earnings are better indicator of future cash flows than current cash flows itself, another group of researchers found opposite results. Based on the study, the current operating cash flows are better indicator of the future operating cash flows than earnings. Bowen, et al. (1986) examined whether cash flows, calculated using net income plus depreciation, amortization and working capital from operations or earnings is a better predictor of the future cash flows. The result presented that the cash flows variable is a better predictor of future operating cash flows. Supporting the finding of Bowen, et al. (1986), Habib (2010) revealed that operating cash flows-based model outperforms earnings-based model in predicting future operating cash flows for both in-sample and out-of-sample tests. However, the result is significantly strong in predicting operating cash flows one-year ahead; it is quite weak for the next 2 and 3 years. As a result, Habib (2010) concluded that cash flows are better than earnings in predicting future cash flows in the case of Australian firms. Furthermore, Percy and Stokes (1992) and Farshadfar, et al. (2008) concluded that current cash flows are more relevant and provide more accuracy in predicting future cash flows. However, Percy and Stokes (1992) emphasized that the predictive ability of the current cash flows in predicting future cash flow is not equal for each industry. In addition, Finger (1994) compared the predictability of current

earnings and current cash flows to predict the future cash flows. He agreed that current cash flows variable is a better predictor of future cash flows, but just for a short period. For a long period, the predictive ability of current cash flows and current earnings in predicting the future cash flows is not much different. Similar to the results of Finger (1994), Subatnieks (2007) used the data from 1995 to 2005 by testing three different models having different independent variables, (i) only current earnings, (ii) only current cash flows, and (iii) both current earnings and current cash flows included. Subatnieks (2007) then compared the predictive ability among each model in predicting future cash flow (one-year ahead). In the case of Latvia, he concluded that the current cash flows have been found to be better than current earnings in predicting the cash flows one-year ahead. Recently, Al-Debi'e (2011) insisted that operating cash flows have stronger power of predicting future operating cash flows than earnings by using a sample of service and industrial firms listed in on Amman Stock Exchange in Jordan from 2000-2009.

Even though results from prior studies have been subject to controversies, it has been clear that both current earnings and current operating cash flows can be used to predict future operating cash flows. Hence, it is more interesting to see if these existing findings can be found in the case of Thailand.

Besides, Dudney, et al. (2008) asserted that stock prices can reflect the view of investors regarding firms' future cash flows since stock prices are presumably the present value of future cash flows. Their study then believed that current earnings and current cash flows can be used to predict future stock prices because operating cash flows, aggregate accruals and current accruals are information that is consistent with the one that is applied for equity valuation (Rayburn, 1986). There are many

empirical studies supporting this study's proposal. First, Ball and Brown (1968) examined whether the change in earnings or the change in cash flows is associated with the change in the stock returns or not. Using the data from New York Stock Exchange from 1946 to 1966, they found out that stock returns were positively related with the change in earnings, rather than the change in cash flows. This indirectly implied that earnings are better than cash flows in predicting stock prices. Moreover, Beaver and Dukes (1972) extended the work of Ball and Brown (1968), by including the investigation of the alternative accounting methods of measuring earnings and examining the broader class of expectations models and the broader class of methods of transforming the earnings variable (e.g. deflated variables). Beaver and Dukes (1972) used the data from the New York Stock Exchange from the year 1950 to 1967 and they reported that the residual change in the stock returns is highly associated with the change in earnings, rather than the change in cash flows. The magnitude of the results was in the same trend as that of Ball and Brown (1968). In addition, Liu, et al. (2002) attempted to discover whether the reported cash flows are superior to the reported earnings in equity valuation (firm's value or stock price) in the case of the United States. They asserted that reported earnings are better than reported cash flows in the equity valuation. Even in their later study in year 2007, in which the reported earnings and reported cash flows variables to be the predicted numbers, the results are indifferent (Liu, et al., 2007).

However, another group of researchers found contradicting results. Collins, et al. (1997) examined the association between earnings and stock prices and found out that the association between earnings and stock prices is declining over time. Consistent to Collins, et al. (1997), Kim and Kross (2005) also investigated the relationship between earnings and

stock prices. They used current earnings to predict the stock prices three months after each year-ended and revealed that the relationship decreased over time.

As a matter of fact, due to the controversial results of the usefulness of earnings and cash flows in predicting future stock prices, proxy of future cash flows, this aspect becomes interesting in examine the same issue in the context of Thailand in order to provide more information for the investors when making decisions.

Research Methodology

Data Collection

This study used the annual data of nonfinancial firms listed on the Stock Exchange of Thailand (SET) during the periods of 2001-2010. These data were obtained from the SETSMART database. After eliminating firms with incomplete data, the sample consists of 1,645 firms listed from 2001-2008. This in-the-sample data were used for the estimation purpose. In addition, the out-of-sample data consist of 235 firms listed during 2009-2010. They were employed to test the predictive ability of the derived models.

Model Specification

To investigate the association between future operating cash flows and current earnings and current operating cash flows, the following operating cash flows model were examined by using the regression analysis.

$$OCF_{it+1} = \alpha_0 + \alpha_1 ERN_{it} + \alpha_2 OCF_{it} + \epsilon_{it} \quad (1)$$

Where,

OCF_{it+1} = Operating cash flows per share of firm i one-year ahead

ERN_{it} = Earnings per share of firm i at year t

OCF_{it+1} = Operating cash flows per share of firm i at year t

α_0 = Intercept term

α_1 = Coefficient of current earnings

α_2 = Coefficient of current operating cash flows

ϵ_{it} = Error term of the equation

Moreover, to examine the association between future stock prices and current earnings and current operating cash flows, the following stock prices model was tested using the regression analysis.

$$SP_{it+1} = \beta_0 + \beta_1 ERN_{it} + \beta_2 OCF_{it} + \epsilon_{it} \quad (2)$$

Where,

SP_{it+1} = Stock price of firm i three-months after fiscal year-end t

ERN_{it} = Earnings per share of firm i at year t

OCF_{it} = Operating cash flows per share of firm i at year t

β_0 = Intercept term

β_1 = Coefficient of current earnings

β_2 = Coefficient of current operating cash flows

ϵ_{it} = Error term of the equation

Finally, to examine the predictive ability of current earnings and current operating cash flows, the Theil's U statistic, suggested by Kim and Kross (2005), was employed. The Theil's U statistic is commonly used to determine the prediction errors of the estimated models. The lower the errors (U), the better the model is. The comparison of the forecast accuracy among Model (1) and (2) is also discussed in order to provide the best predictive model in this study:

$$U_t = \sqrt{\frac{\sum (OCF_{it+1} - \text{predicted } OCF_{it+1})^2}{\sum (OCF_{it+1})^2}} \quad (3)$$

Where,

- U_t = U-statistics
- OCF_{it+1} = Actual operating cash flows of the year 2010
- $Predicted\ OCF_{it+1}$ = Estimated operating cash flows from the estimated model using the current operating cash flows of the year 2009

Results

Table 1 Panel A below reports the results of regression analysis on the relationship of future operating cash flows (OCF_{it+1}) and current earnings (ERN_{it}) and current operating cash flows (OCF_{it}). It shows that the coefficients of current earnings (ERN_{it}) and current operating cash flows (OCF_{it}) are positively related to future operating cash flows (OCF_{it+1}) at the 0.01 significant level. This implies that the current earnings (ERN_{it}) and current operating cash flows (OCF_{it}) are good predictors of the future operating cash flows (OCF_{it+1}) in which an increase in both variables lead to an increase in the operating cash

flows one-year ahead.

In the case of future stock prices (SP_{it+1}), Table 1 Panel B shows that current earnings (ERN_{it}) and current operating cash flows (OCF_{it}) are significantly related to the future stock prices (SP_{it+1}) with a positive relationship. This means that current earnings (ERN_{it}) and current operating cash flows (OCF_{it}) can be used to predict future stock prices (SP_{it+1}). An increase in both variables is the indicator of an increase in the stock prices in the future.

Table 1: Regression Results

Table below reports the coefficient estimates, t-statistics, and R^2 based on the OLS cross-sectional regressions. OCF_{it+1} is the one-year ahead operating cash flows per share of firm i for year t. ERN_{it} is the earnings per share of firm i for year t. OCF_{it} is the current operating cash flows per share of firm i for year t. SP_{it+1} is the three-month ahead stock price per share of firm i for year t. α_0 and β_0 are intercept terms. The sample for the estimation purpose consists of 1,645 items over 8 years of 2001-2008 selected period. * significant at 0.01 level.

Panel A (Model 1)	Independent variables		
Dependent variable: OCF_{it+1}	α_0	ERN_{it}	OCF_{it}
Coefficients	0.585	0.115	0.863
t-statistics	3.741*	4.755*	48.624*
R^2	69.1		
Panel B (Model 2)	Independent variables		
Dependent variable: SP_{it+1}	β_0	ERN_{it}	OCF_{it}
Coefficients	7.748	3.163	2.045
t-statistics	8.588*	30.888*	14.663*
R^2	58.3		

As shown in Table 1, it seems likely that the operating cash flows model (model 1) outperforms the stock price model (model 2) due to higher coefficient of determination (R^2). However, it does not always mean that model 1 has higher predictive ability than model 2. To investigate and confirm the earlier results, Theil's U statistic was applied by using out-of-sample data (Kim & Kross, 2005). In performing the out-of-sample test, the earnings and operating cash flows of the year 2009 were employed to predict the future operating cash flows and future stock prices of the year 2010.

Table 2 shows the results of the U-statistic. It indicates that the U-statistic of operating cash flows model (model 1) is approximately 10.66%, whereas the U-statistic of stock price model (model 2) is approximately 15.00%. This implies that operating cash flows model (model 1) has less prediction errors than those of stock prices model (model 2). In other

words, the prior model is more accurate in forecasting. Hence, it can be concluded that current earnings (ERN_{it}) and current operating cash flows (OCF_{it}) are better predictors of the future operating cash flows (OCF_{it+1}) than those of future stock prices (SP_{it+1}).

Table 2 : Results of Theil's U statistic

Theil's U statistic (Kim & Kross, 2005) is used to determine the errors of the estimated models by using out-of-sample data. $U_t = \text{the square root of } \{\sum (OCF_{it+1} - \text{predicted } OCF_{it+1})^2 / \sum (OCF_{it+1})^2\}$, where U_t is U-statistics, OCF_{it+1} is actual operating cash flows of the future year, Predicted OCF_{it+1} is the estimated operating cash flows from the estimated equation. The earnings (ERN_{it}) and operating cash flows (OCF_{it}) of the year 2009 are employed to predict the future operating cash flows (OCF_{it+1}) and future stock prices (SP_{t+1}) of the year 2010. The out-of-sample data consist of 235 firms.

Out-of-sample testing (N = 235)	U-Statistic
Model 1: $OCF_{it+1} = \alpha_0 + \alpha_1 ERN_{it} + \alpha_2 OCF_{it} + \epsilon_{it}$	10.66
Model 2: $SP_{it+1} = \beta_0 + \beta_1 ERN_{it} + \beta_2 OCF_{it} + \epsilon_{it}$	15.00

Conclusions

The financial statement information is always valuable to firms' stakeholders. Earnings and Operating cash flows are two components easily derived from financial statements and are two variables mostly used to predict the performance of operating cash flows and stock prices in the future. This study then endeavored to examine such relationship by using the public firms listed on the Stock Exchange of Thailand during 2001-2010. Results show that future operating cash flows and future stock prices can be predicted by both current earnings and current operating cash flows in which an increase in current

earnings and current operating cash flows enhance future operating cash flows and future stock prices.

In addition, using the out-of-sample data, results reveal that current earnings and current operating cash flows are better predictors of future operating cash flows than future stock prices because the Theil U-statistic reports that the errors in the prediction of the future operating cash flows by using current earnings and current operating cash flows are less than those of prediction of the future stock prices. This indicates that the forecast accuracy of the operating cash flows model is greater.

Results from the study provide information

about the usefulness of current earnings and current operating cash flows in predicting the future returns, measured by future operating cash flows and future stock prices. Results reveal significant implication in terms of value relevance of earnings, operating cash flows, and stock prices. This will help investors or fund managers to make reasonable investment decisions in order to grasp higher returns in the future. Moreover, for the creditors, results from this study might provide them addition information that can be used to determine firms' liquidity and the ability to generate future cash flows in order to settle the obligations.

For further study, it is recommended that the researchers attempt to examine the predictive power of firm size to future operating cash flows and future stock price since Al-Debi'e (2011) found out that the predictive power of operating cash flows is relatively strong for firms having large size. Moreover, researchers may extend this work by exploring more control variables such as those in the Fama-French three factor model (Fama & French, 1993).

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