วารสารวิชาชีพบัญชี

บทความวิจัย

Investor Misperception about the Ability of Net Operating Assets to Forecast Future Performance: Thai Evidence

Warinya Charoenchit*

Somchai Supattarakul, Ph.D.**

ABSTRACT

This study aims at investigating investor misperception about the ability of net operating assets to forecast future performance for Thai stock market. Specifically, this paper empirically examines the persistence and the market pricing of net operating assets of firms listed in the Stock Exchange of Thailand (SET) during 2000-2008.

This study employs the Mishkin (1983) test to investigate the market pricing of net operating assets, cash flows, and accruals. Our results show that net operating assets are negatively associated with one-year-ahead earnings and that the stock market overprices the ability of net operating assets to forecast future earnings. Our empirical results are consistent with empirical results of U.S. firms documented in Hirshleifer et al. (2004).

Keywords: Net Operating Assets, Earnings Persistence, Market Pricing, Cash Flows, Accruals

* Mubadala Petroleum (Thailand) Limited

** Thammasat Business School, Thammasat University

Corresponding author: Thammasat Business School, Thammasat Univesity, 2 Prachan Rd., Pranakorn, Bangkok, 10200 Thailand. email: somchai.supattarakul@tbs.tu.ac.th

ปีที่ 10 ฉบับที่ 27
เมษายน 2557
หน้า 32-44

บทคัดย่อ

งานวิจัยนี้ศึกษาการรับรู้ที่ผิดไปของนักลงทุนเกี่ยวกับการพยากรณ์ผลการดำเนินงานในอนาคตจากสินทรัพย์ดำเนินงานสุทธิสำหรับบริษัทในตลาดหลักทรัพย์แห่งประเทศไทย กล่าวคือ งานวิจัยนี้ศึกษาเชิงประจักษ์เกี่ยวกับความคงอยู่ในกำไรในอนาคต (Persistence) และการรับรู้ของตลาดทุนเกี่ยวกับความคงอยู่ของกำไรในอนาคต (Market Pricing) ของสินทรัพย์ดำเนินงานสุทธิของบริษัทบริษัทในตลาดหลักทรัพย์แห่งประเทศไทยระหว่างปี พ.ศ. 2543 ถึงปี พ.ศ. 2551

งานวิจัยนี้ศึกษาการรับรู้ของตลาดทุนเกี่ยวกับความคงอยู่ในกำไรในอนาคตของสินทรัพย์ดำเนินงานสุทธิ กระแสเงินสด และรายการคงค้าง โดยใช้วิธีทดสอบที่เสนอโดย Mishkin (1983) ซึ่งพบว่าสินทรัพย์ดำเนินงานสุทธิมีความสัมพันธ์แบบผกผันกับกำไรในอีกหนึ่งปีข้างหน้า และตลาดทุนรับรู้ความคงอยู่ในกำไรในอนาคตของสินทรัพย์ดำเนินงานสุทธิสูงเกินไป ผลการศึกษาดังกล่าวสอดคล้องกับผลการศึกษาของ Hirshleifer et al. (2004) ซึ่งศึกษาในบริบทของตลาดทุนในประเทศสหรัฐอเมริกา

คำสำคัญ: สินทรัพย์ดำเนินงานสุทธิ ความคงอยู่ในกำไรในอนาคต การรับรู้ของตลาดทุนเกี่ยวกับการคงอยู่ของกำไรในอนาคต กระแสเงินสดรายการคงค้าง

Introduction

Investors normally believe that a firm with high net operating assets seems to possess a strong financial position. However, Hirshleifer et al. (2004) argue that a firm with high net operating assets is less attractive than its appearance suggests due to a lack of sustainability of current earnings performance and investor misperceptions. They propose that current earnings may not be sustained in the future therefore, investors who focus on current earnings with favorable aspects may overvalue the firm's stock. A lack of sustainability of current earnings performance of the firm with high net operating assets may be a result of a subsequent reversal of previous earnings management or a limited attention of investors to make full use of accounting information. Hirshleifer et al. (2004) examine the persistence and the market pricing of net operating assets for U.S. stock markets and find that net operating assets is negatively associated with future earnings and investors overprice the persistence of net operating assets.

Thai stock market is an emerging market with much smaller market capitalization and trading volume, relative to developed capital markets such as U.S. stock markets and is not efficient [Islam et al. (2007) and Tantipanichkul and Supattarakul (2013)]. The investor misperception about the predictability of net operating assets in Thailand may be different from U.S.A. Therefore, this study aims at investigating the persistence and the market pricing of net operating assets of Thai listed firms.

Our sample includes firms (2,243 firm-year observations) listed in the Stock Exchange of

Thailand (SET) during 2000–2008. This study uses the Mishkin (1983) test to investigate the market pricing of net operating assets, cash flows, and accruals. Our results show that cash flows are more persistent than accruals. More interestingly, we find that net operating assets are negatively associated with one-year-ahead earnings. Moreover, we document that Thai stock market overprices both cash flows and accruals and more interestingly, we find that Thai stock market overprices an the predictability of net operating assets. Our empirical results of Thai firms are consistent with empirical results of U.S. firms documented in Hirshleifer et al. (2004).

Our study contributes to the accounting literature on the persistence and the market pricing of accounting information. Specifically, this study provides empirical evidence on the persistence and the market pricing of net operating assets as well as cash flows and accruals of emerging markets (i.e., Thai stock market). The results are beneficial to financial analysts and investors of Thai listed firms in that when they are predicting a firm's future earnings in an estimation of the firm's stock price, they should take into account information in net operating assets. A limited attention of investors to make full use of information in net operating assets may lead to an over-estimation of future earnings and stock values.

The remainder of this paper is organized as follows. Section 2 discusses prior research on the persistence and the marketing pricing of net operating assets as well as cash flows and accruals. Section 3 describes the sample selection criteria, variable measurements, and model specifications. Empirical tests and results are discussed in Section 4. The final section concludes the paper.

Prior Research and Hypothesis Development

Hirshleifer and Teoh (2003) propose that more salient accounting information is likely to be used by more investors and therefore it tends to be fully reflected into stock prices. As a result, a firm highlighting favorable (unfavorable) financial measures is more likely to be overvalued (undervalued). Specifically, they predict that a firm disclosing unrecognized high employee stock option expenses is overvalued and in turn earns negative long-run abnormal returns, relative to a firm recognizing the expenses. This suggests that investors have limited attention and cognitive processing power.

Empirical results on the market mispricing of accounting information are an implication of investors' limited attention and cognitive processing power. Specifically, Sloan (1996) uses the nonlinear generalized least squares estimation or the Mishkin (1983) test to examine whether stock prices fully reflect the persistence of cash flows and accruals in the United States during 1962–1991 and finds that stock markets in United States overprice (underprice) the persistence of accruals (cash flows). Kraft et al. (2007) use the OLS estimation of one-year-ahead returns on cash flows and accruals to investigate whether stock markets in the United States misprice the persistence of cash flows and accruals during 1974–2003. Their results are consistent with Sloan (1996).

Extending Sloan (1996), Xie (2001) uses the Mishkin test to examine the market pricing of the persistence of cash flows and two accrual components (i.e., normal and abnormal accruals) in the United States during 1971–1992 and finds that stock markets in the United States underprice the persistence of cash flows and normal accruals but overprice abnormal accruals. Overall, empirical evidence on stock markets in the United States reveals that investors underprice the cash flows persistence but overprice the accruals persistence, and that the accruals overpricing is mostly due to abnormal accruals.

Pincus et al. (2007) investigate the market pricing of the persistence of cash flows and accruals during 1994–2002 in 20 countries, including Australia, Canada, Denmark, France, Germany, Hong Kong, India, Indonesia, Italy, Japan, Malaysia, the Netherlands, Singapore, Spain, Sweden, Switzerland, Taiwan, Thailand, the United Kingdom, and the United States. They find that stock markets in the United States overprice both the persistence of cash flows and accruals. They also document that stock markets in Germany, Malaysia, Singapore, and Spain underprice both cash flows and accruals persistence. Investors in Indonesia overprice the cash flows persistence but underprice the accruals persistence. Their empirical evidence also shows that stock markets in Australia, Canada, and the United Kingdom overprice the accruals persistence while results on the mispricing of the cash flows persistence are insignificant. Finally, stock markets in France, Italy, Japan, The Netherlands, Sweden, Switzerland, Taiwan, and Thailand underprice the cash flows persistence while results on the mispricing of the accruals persistence are insignificant.

In additon, Supattarakul and Vivattanachang (2013) use the Mishkin test to investigate the market pricing of the persistence of cash flows and accruals in Thailand during 1999–2007. Consistent with Pincus et al. (2007), their results suggest Thai stock market underprices both cash flows and total accruals persistence. Extending Supattarakul and Vivattanachang (2013), Supattarakul (2013) empirically investigates the market pricing of cash flows, normal and abnormal accruals in Thailand during 1999–2009, using the Mishkin test, and finds that Thai stock market misprices the persistence of all three earnings components. Specifically, results indicate that Thai stock market underprices the persistence of cash flows and normal accruals but overprice the abnormal accruals persistence.

Hirshleifer et al. (2004) argue that a firm with high net operating assets is less attractive than its appearance suggests due to a lack of sustainability of current earnings performance and investor misperceptions. They illustrate that when a firm records credit sales, its net operating assets (i.e., accounts receivable) and earnings increase. Similarly, when a firm records expenditures as assets rather than expenses, its net operating assets and earnings increase. If current earnings are not sustained with respect to future earnings, investors focusing on current earnings with favorable aspects are likely to overvalue the firm's stock. A lack of sustainability of current earnings performance of a firm with high net operating assets may be a result

of a subsequent reversal of previous earnings management or a limited attention of investors to make full use of accounting information. They use the iterative weighted nonlinear least squares regressions or the modified Mishkin test to examine whether investors misprice the ability of net operating assets as well as cash flows and accruals to forecast future earnings for U.S. stock markets during 1964–2002. They find that the level of net operating assets is negatively associated with future earnings. More importantly, they find that U.S. stock markets misprice the persistence of net operating assets and overprice (underprice) the persistence of accruals (cash flows).

Thai stock market is an emerging market with much smaller market capitalization and trading volume, relative to developed capital markets such as U.S. stock markets and is not efficient [Islam et al. (2007) and Tantipanichkul and Supattarakul (2013)]. The investor misperception in Thailand may be different from U.S.A. Therefore, this study aims at investigating the market pricing of the ability of net operating assets to forecast future earnings of Thai listed firms.

Sample Selection, Variable Measurements, and Model Specifications

1. Sample Selection

Stock markets in Thailand consist of two markets: the Stock Exchange of Thailand (SET) and the Market of Alternative Investment (mai).[1] Our sample include only firms listed in SET because firms listed in mai are significantly smaller in size and trading volume relative to firms listed in SET. We then exclude form our sample firms in financials and financial distressed firms. Our sample period is 2000–2008. We further eliminate firm-year observations with missing required data on SETSMART[2] and firm-year observations with 1% extreme values at both ends. Our final sample consists of 3,243 firm-year observations.

2. Variable Measurements

The empirical analysis on the persistence of the cash flows, accruals, and net operating assets requires three variables: (i) accruals (ACC), (ii) cash flows from operations (CFO), and (iii) net operating assets (NOA).

[1] **The Stock Exchange of Thailand (SET)** is a juristic entity set up under the Securities Exchange of Thailand Act, B.E. 2517 (1974). Its mandate is to be a market for the trading of listed securities, a promoter of personal financial planning and provider of related services while the Market for Alternative Investment (mai) has been established under the Securities Exchange of Thailand Act. The objective is to create new fund-raising opportunities for innovative business with high potential growth as well as provide a greater range of investment alternatives for investors. It officially commenced operation on June 21, 1999.

[2] **SETSMART** (SET Market Analysis and Reporting Tool) is the web-based application from the Stock Exchange of Thailand (SET) that can seamlessly integrate comprehensive sources of Thai listed company data, i.e., historical stock prices, historical indices, listed company profile, and historical news.

ACC is defined as follows:

$$ACC_{it} = [(\Delta CA_{it} - \Delta CASH_{it}) - (\Delta CL_{it} - \Delta STD_{it}) - DEP_{it}] / TA_{it-1} \quad ...(1)$$

where

ACC_{it} = accruals, deflated by total assets, of firm i for year t,

ΔCA_{it} = a change in current assets of firm i for year t, $CA_{it} - CA_{it-1}$,

$\Delta CASH_{it}$ = a change in cash on hand of firm i for year t, $CASH_{it} - CASH_{it-1}$,

ΔCL_{it} = a change in current liabilities of firm i for year t, $CL_{it} - CL_{it-1}$,

ΔSTD_{it} = a change in short-term debts of firm i for year t, $STD_{it} - STD_{it-1}$,

DEP_{it} = depreciation and amortization expenses of firm i for year t, and

TA_{it} = total assets of firm i for year t.

CFO is defined as follows:

$$CFO_{it} = (EARN_{it} - ACC_{it}) / TA_{it-1} \quad ...(2)$$

where

CFO_{it} = cash from operations, deflated by total assets of firm i for year t and

$EARN_{it}$ = net income or earnings of firm i for year t.

NOA is defined as operating assets minus operating liabilities, deflated by total assets:

$$NOA_{it} = [(TA_{it} - CASH_{it} - STI_{it}) - (TL_{it} - STD_{it} - LTD_{it} - TE_{it})] / TA_{it-1} \quad ...(3)$$

where

NOA_{it} = net operating assets, deflated by total assets, of firm i for year t,

$CASH_{it}$ = cash on hand of firm i for year t,

STI_{it} = short-term investments of firm i for year t,

TL_{it} = total liabilities of firm i for year t,

STD_{it} = short-term debts of firm i for year t,

LTD_{it} = long-term debts of firm i for year t, and

TE_{it} = total equity of firm i for year t.

In addition to three variables defined above, the market pricing of the persistence of cash flows and accruals as well as net operating assets requires future stock returns. Future stock returns or cumulative abnormal returns (CAR) are defined as one-year cumulative size-adjusted returns beginning three months after the end of the fiscal year from which the financial statement data are filed with SET.

3. Model Specifications

In order to investigate the persistence and the market pricing of cash flows, accruals, and net operating assets with respect to one-year-ahead earnings, the nonlinear generalization least squares estimation or the Mishkin (1983) test is employed. The Mishkin test is widely used for testing the rational expectation of investors in pricing the publicly available information [e.g., Sloan (1996), Xie (2001), Fairfield et al. (2003), Hirshleifer et al. (2004), Pincus et al. (2007), Dechow et al. (2008), Supattarakul and Vivattanachang (2013) and Supattarakul (2013)].

The rational expectation implication indicates that the expectation assessed by the markets equals the true conditional expectation using all available historical information. If all information are fully incorporated, investors will earn zero abnormal returns. To test for application of rational expectations to financial markets which is referred as market efficiency, the following set of equations is suggested:

The Market Efficiency Model:

$$E(y_{t+1} - \hat{y}_{t+1} \mid \phi_t) = 0 \quad (4)$$

where

ϕ_t = the set of information publicly available at time t,

$E(... \mid \phi_t)$ = the objective expectation condition on ϕ_t,

y_{t+1} = the return from holding a particular security from t to t + 1,

$\hat{y}_{t+1}$ = the market's subjective expectation where market is in equilibium and provides a "normal" return, and

$y_{t+1} - \hat{y}_{t+1}$ = the abnormal returns which is positively correlated with historical informaion at the time t.

A model that satisfies the efficient-markets condition in (4) is

$$(y_{t+1} - \hat{y}_{t+1} \mid \phi_t) = \beta(X_{t+1} - X^e_{t+1}) + \varepsilon_{t+1} \quad ...(5)$$

where

X_{t+1} = the vector containing variables relevant to the pricing of the security at the time t + 1,

X^e_{t+1} = the vector of one-period-ahead rational forecasts of X_{t+1}, $E(X_{t+1} \mid \phi_t)$,

β = a valuation coefficient, and

ε_{t+1} = a disturbance with the property $E(\varepsilon_t \mid \phi_t) = 0$.

The application of above models to test the persistence and the market pricing of cash flows, accrual, and net operating assets requires two equations to perform jointly estimations using the iterative non-linear least squares regressions. First, the forecasting equation measures a predictive ability of cash flows, accruals, and net operating assets to one-year-ahead earnings using a linear regression. Next, the valuation equation measures the market pricing of cash flows, accruals, and net operating assets resulting in valuation parameters to be compared with the persistence parameters estimated from the forecasting equation. If the market is efficient (i.e., there is no investor misperceptions.), the differences between the persistence parameters from the forecasting and the valuation equations will be insignificant.

The following system of equations is used to test the persistence and the market pricing of cash flows, accruals, and net operating assets.

The Forecasting Equation:

$$EARN_{t+1} = \beta_0 + \beta_1 CFO_t + \beta_2 ACC_t + \beta_3 NOA_t + e_{t+1} \quad ...(6)$$

The Valuation Equation:

$$AR_{t+1} = \gamma_0 + \gamma_1 (EARN_{t+1} - \beta_0 - \beta_1^* CFO_t - \beta_2^* ACC_t - \beta_3^* NOA_t) + \varepsilon_{t+1} \quad ...(7)$$

If the earnings expectations embedded in the one-year-ahead stock returns do not accurately reflect the persistence of net operating assets, β_3^* is expected to be significantly different from β_3.

Mishkin (1983) shows that the following likelihood ratio statistic is distributed asymptotically as $\chi^2(q)$ under the null hypothesis that the market rationally prices one or more earnings components with respect to their associations with one-year-ahead earnings. The likelihood ratio tests the neutrality and rationality by comparing the sum of squared residuals of the unconstrained system with that of the constrained system as follows.

$$2n \ln(SSR^c / SSR^u) \quad ...(8)$$

where

q = the number of constraints imposed for rational pricing test,

n = the number of sample observations,

SSR^c = the sum squared residuals from the constrained system, and

SSR^u = the sum squared residuals from the unconstrained system.

Empirical Tests and Results

1. Descriptive Statistics and Correlation Analysis

Panel A of Table 1 presents the descriptive statistics while Panel B presents the correlation analysis of all variables for our final sample of 2,243 firm-year observations during 2000–2008. Mean and median of sample firms' one-year-ahead earnings ($EARN_{t+1}$) as well as cash flows (CFO_t) are positive while mean and median of ACCt are negative. These are consistent with Supattarakul and Vivattanachang (2013) and Supattarakul (2013). Morover, mean and median of NOAt are 0.7775 and 0.7904, respectively, and mean and median of CAR_{t+1} are –0.0761 and –0.1162, respectively.

$EARN_{t+1}$ and CFO_t are significantly positively correlated. The correlation between $EARN_{t+1}$ and ACC_t are also positive, but insignificant. More interestingly, $EARN_{t+1}$ and NOA_t are significantly positively correlated, suggesting that a firm with high operating assets tends to earn low future earnings. This is consistent with the argument made by Hirshleifer et al. (2004). In addition, the correlated coefficients of CAR_{t+1} with expected to CFO_t, ACC_t, and NOA_t are insignificant.

Table 1 Descriptive Statistics and Correlation Analysis of 2,243 Firm-Year Observations during 2000–2008

Panel A: Descriptive Statistics

	Mean	Median	Standard Deviation	Maximum	Minimum
$EARN_{t+1}$	0.0552	0.0563	0.0844	0.3415	–0.2972
CFO_t	0.0779	0.0880	0.1409	0.5708	–0.5601
ACC_t	–0.0177	–0.0353	0.1210	0.6273	–0.3642
NOA_t	0.7775	0.7904	0.2006	1.5807	0.1259
CAR_{t+1}	–0.0761	–0.1162	0.5635	3.3797	–1.6786

Panel B: Correlation Analysis

	$EARN_{t+1}$	CFO_t	ACC_t	NOA_t
CFO_t	0.384**			
ACC_t	0.002	–0.777**		
NOA_t	–0.027	–0.221**	0.322**	
CAR_{t+1}	0.141**	–0.035	0.003	0.002

** Significant at the 0.01 level (2-tailed).

Variable Definitions:

$EARN_{t+1}$ is net income or earnings, deflated by total assets, for year t + 1,

CFO_t is cash flows operations , deflated by total assets,for year t,

ACC_t is accruals, deflated by total assets, for year t,

NOA_t is net operating assets, deflated by total assets, for year t, and

CAR_{t+1} is cumulative size-adjusted returns for year t + 1.

2. Nonlinear Regression Analysis

An estimation of the forecasting model provides empirical evidence on the persistence of cash flows, accruals, and net operating assets with respect to one-year-ahead earnings. Results are presented in Table 2.

The forecasting parameters or the persistence parameters of CFO_t and ACC_t are significantly positive and the persistence parameter of CFO_t is greater than that of ACC_t. This is consistent with Sloan (1996), Hirshleifer et al. (2004) and Supattarakul and Vivattanachang (2013).

More interestingly, the persistence parameter of NOA_t is significantly negative. This is consistent with Hirshleifer et al. (2004). This suggests that a firm with high operating assets tends to earn low future earnings.

An estimation of the non-linear valuation model provides empirical evidence on the market pricing of cash flows, accruals, and net operating assets. Results on the estimation of the non-linear valuation model are also reported in Table 2.

This study examines whether Thai stock market misprice the persistence of cash flows, accruals, and net operating assets with respect to one-year-ahead earnings. The likelihood ratio statistics of 36.24 ($\beta_1 = \beta_1^*$) and 19.89 ($\beta_2 = \beta_2^*$) reject the null hypotheses that the persistence of cash flows and accruals are accurately priced. Specifically, the valuation parameters of cash flows ($\beta_1^* = 0.7747$) and accruals ($\beta_2 = 0.6884$) are both significantly greater than their forecasting parameters ($\beta_1 = 0.5855$ and $\beta_2 = 0.5444$). This suggests that Thai stock market overprices both cash flows and accruals relative to their ability to forecast one-year-ahead earnings.

More interestingly, the likelihood ratio statistic of 6.73 ($\beta_3 = \beta_3^*$) rejects the null hypothesis that the persistence of net operating assets is correctly priced. Specifically, the valuation parameter of net operating assets ($\beta_3^* = 0.0058$) is significantly greater than its forecasting parameter ($\beta_3 = -0.0010$), suggesting that Thai stock market overprices the net operating assets relative to its ability to forecast one-year-ahead earnings. This is consistent with the U.S. evidence documented in Hirshleifer et al. (2004). The market overpricing of the persistence of net operating assets suggest that for Thai stock market, there are investor misperceptions about the ability of net operating assets to predict future earnings.

Table 2 Nonlinear Regression Analysis of the Persistence and the Market Pricing of Cash Flows, Accruals, and Net Operating Assets (the Mishkin Test)

Forecasting Equation:

$EARN_{t+1} = \beta_0 + \beta_1 CFO_t + \beta_2 ACC_t + \beta_3 NOA_t + e_{t+1}$

Valuation Equation:

$CAR_{t+1} = \gamma_0 + \gamma_1(EARN_{t+1} - \beta_0 - \beta_1 * CFO_t - \beta_2 * ACC_t - \beta_3 * NOA_t) + \varepsilon_{t+1}$

Forecasting Parameters			Valuation Parameters		
Parameter	**Estimate**	**Asymptotic Std. Error**	**Parameter**	**Estimate**	**Asymptotic Std. Error**
β_1 (CFO)	0.5855**	0.0190	β_1* (CFO)	0.3747	0.0724
β_2 (ACC)	0.5444**	0.0159	β_2* (ACC)	0.6884	0.0851
β_3 (NOA)	–0.0260**	0.0074	β_3* (NOA)	0.0058	0.0099
n	2,743				
Adjusted R^2	0.3775				

Tests of Rational Pricing of Cash Flows, Normal Accruals, and Abnormal Accruals

Null Hypotheses	**Likelihood Ratio Statistic**	**Marginal Signifificance Level**
CFO: $\beta_1 = \beta_1$*	56.84	<0.0001
ACC: $\beta_2 = \beta_2$*	19.89	<0.0001
NOA: $\beta_3 = \beta_3$*	6.73	0.0345

** Significant at the 0.01 level (2-tailed).

Variable Definitions:

$EARN_{t+1}$ is net income or earnings, deflated by total assets, for year t + 1,

CFO_t is cash flows operations, deflated by total assets,for year t,

ACC_t is accruals, deflated by total assets, for year t,

NOA_t is net operating assets, deflated by total assets, for year t, and

CAR_{t+1} is cumulative size-adjusted returns for year t + 1.

Conclusion

Hirshleifer et al. (2004) argue that a firm with high net operating assets is less attractive than its appearance suggests due to a lack of sustainability of current earnings performance and investor misperceptions. They examine the persistence and the market pricing of net operating assets for U.S. stock markets and find that net operating assets is negatively associated with future earnings and investors overprice the ability of net operating assets to forecast future earnings.

Thai stock markets are emerging markets with much smaller market capitalization and trading volume, relative to developed capital markets such as U.S. stock markets and are not efficient [Islam et al. (2007) and Tantipanichkul and Supattarakul (2011)]. The investor misperception in Thailand may be different from U.S.A. Therefore, this study aims at investigating the persistence and the market pricing of net operating assets of firms listed in the Stock Exchange of Thailand (SET) during 2000–2008.

This study employs the Mishkin (1983) test to investigate the market pricing of net operating assets, cash flows, and accruals. This framework is widely used for testing the rational expectation of investors in pricing the publicly available information. The forecasting and valuation models are jointly estimated. The forecasting parameter represents the earnings persistence parameter while the valuation parameter represents the market pricing of earnings components.

Our results show that cash flows are more persistent than accruals and net operating assets are negatively associated with one-year-ahead earnings. Our results also show that the valuation parameters of cash flows and accruals are significantly greater than their forecasting parameters, suggesting that Thai stock market overprices both cash flows and accruals. More interestingly, we find that the valuation parameter of net operating assets is significantly greater than its forecasting parameter suggesting that Thai stock market overprices the ability of net operating assets to forecast future earnings. Our empirical results of Thai firms are consistent with empirical results of U.S. firms documented in Hirshleifer et al. (2004).

Our study contributes to the accounting literature by providing empirical evidence on the earnings persistence and the market pricing of cash flows, accruals, and net operating assets of emerging markets (i.e., Thai stock market). The results are beneficial to financial analysts and investors of Thai listed firms in that when they are predicting a firm's future earnings in an estimation of the firm's stock price, they should take into account the level of net operating assets. A limited attention of investors to make full use of information in net operating assets may lead an over-estimation of future earnings as well as stock values.

Reference

Dechow, P.M., S.A. Richardson, and R.G. Sloan. (2008). The Persistence and Pricing of the Cash Component of Earnings. *Journal of Accounting Research*, *46*(3): 537–566.

Fairfield, P.M., J.S. Whisenant, and T.L. Yohn. (2003). Accrued Earnings and Growth: Implications for Future Profitability and Market Mispricing. *The Accounting Review*: 353–371.

Hirshleifer, D., K. Hou, S.H. Teoh, and Y. Zhang. (2004). Do Investors Overvalue Firms with Bloated Balance Sheets? *Journal of Accounting & Economics*, *38*: 297–331.

Hirshleifer, D. and S.H. Teoh. (2003). Limited Attention, Information Disclosure, and Financial Reporting. *Journal of Accounting and Economics*, *36*: 337–386.

Islam, S.M., S. Watanapalachaikul, and C. Clark. (2007). Some Tests of the Efficiency of the Emerging Financial Markets: An Analysis of the Thai Stock Market. *Journal of Emerging Market Finance*, 291–302.

Kraft, A., A.J. Leone, and C. Wasley. (2007). Regression-Based Tests of the Market Pricing of Accounting Numbers: The Mishkin Test and Ordinary Least Squares. *Journal of Accounting Research*, *45*(5): 1081–1114.

Mishkin, F.S. (1983). A Rational Expectations Approach to Macroeconomics: Testing Policy Ineffectiveness and Efficient-Markets Models. *The National Bureau of Economic Research*: [illegible]3.

Pincus, M, S. Rajgopal, and M. Venkatachalam. (2007). The Accrual Anomaly: International Evidence. *The Accounting Review*, *82*(1): 169–203.

Sloan, R.G. (1996). Do Stock Prices Fully Reflect Information in Accruals and Cash Flows About Future Earnings? *The Accounting Review*, *71*(3): 289–315.

Supattarakul, S. (2013). The Earnings Persistence and the Market Pricing of Cash Flows, Normal and Abnormal Accruals: Thailand's Capital Markets. Working Paper at Thammasat Business School.

Supattarakul S. and Vivattanachang, D. (2013). The Persistence and Pricing of Earnings and their Cash Flow and Accrual Components: Empirical Evidence in Thailand. *Journal of Accounting Profession* (forthcoming).

Tantipanichkul, P. and Supattarakul, S. (2013). Can Historical Accounting Information Be Used to Predict Future Stock Returns? Working Paper at Thammasat Business School.

Xie, H. (2001). The Mispricing of Abnormal Accruals. *The Accounting Review*, *76*: 357–373.

JAP