

The Relationship between Accounting Information Reported In Financial Statements and Stock Returns - Empirical Evidence from Vietnam

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Abstract

Based on Easton & Harris model (1991), this study aims to investigate the relationship between accounting information reported in financial statements and stock returns. We collected the sample of 108 listed firms on the Ho Chi Minh stock market - the most developmental economic zone in Vietnam during the period of 4 years, from 2010 to 2013. In order to examine the relationship, this paper principally used quantity approach and data estimation techniques of Pooled Regression Model, Fixed Effects Model (FEM) and Random Effects Model (REM). We then utilized the Hausman Test to choose an appropriate model between FEM and REM. The results indicate that there is an association between accounting information and stock returns in Vietnam, but this association is considerably weak. It implies that the accounting information is less useful to make investment decisions in the Vietnamese stock market.

Keywords: Stock returns; accounting information; value relevance

1. Introduction

The stock market, a platform for raising capital, plays a vital role to a country's economic development. With the conditions that Vietnam's economy has been integrating into the world, the role of the stock market is strongly emphasized. Although recently established, the Vietnamese stock market, and its rapid growth rate, requires the usefulness of accounting information in order to help investors make sound decisions, particularly with financial statements.

To date, there have been a great number of empirical studies on value relevance of accounting information conducted on a variety of stock markets. In this paper, we aim to examine the relationship between accounting information and stock returns in Vietnam.

2. Literature review

2.1. *The usefulness of accounting information*

The purpose of financial statements is to provide information about financial positions, performance, and changes in financial position of an entity that is helpful for users to make economic decisions.

According to the International Accounting Standards Board (IASB), accounting information is useful when it includes 4 qualitative characteristics: understandability, relevance, reliability, and comparability.

Viability is represented in the content of financial statements. A statement of financial position reports an entity's assets, liabilities, and equity at a specific point in time. Based on this statement, readers can assess the entity's financial ability and the possibility of meeting matured financial obligations. Results of the entity's operating performance and its profitability are reflected in a statement of comprehensive income. Furthermore, a statement of cash flows reports the entity's cash flow activities, specifically within its operation, investing together with financing activities.

2.2. *Stock returns, earnings levels and earnings changes*

Stock returns is the ratio which measures the percentage of income on invested capital. The formula for the stock returns is the appreciation in the price plus any dividends paid, divided by price at the beginning of the return period.

$$\text{STOCK_RETURNS} = \frac{P_t - P_{t-1} + D_t}{P_{t-1}}$$

Where

P_t, P_{t-1} : price of share at the end of year t and t-1, respectively

D_t : dividend per share for the year t

Basic EPS: The portion of a company's profit allocated to each outstanding share of common stock. EPS serves as an indicator of a company's profitability.

$$\text{EPS} = \frac{\text{Net Income} - \text{dividends on preferred stock}}{\text{Average Outstanding Shares}}$$

EPS should be compared to the benchmarks: EPS = 0, the previous year's EPS (or the same quarter of the previous year) and forward EPS.

Retrospective adjustment of EPS

If the number of ordinary or potentially - ordinary shares increases as a result of stock split, stock dividend, bonus issue or rights issues, or decreases as a result of a reverse share split, EPS cannot be compared over time. Therefore, EPS in prior periods is required to be adjusted for the bonus element so that the history is comparable.

Retrospective adjustment of EPS = Basic EPS × Adjustment factor

$$\text{Adjustment factor} = \frac{\text{share price just before the ex - rights date}}{\text{theoretical ex - rights price of the share}}$$

Earnings level (EPS_P): shows the percentage of each currency unit invested in the stock that was earned by the company, calculated by earnings divided by price at the beginning of the return period.

$$\text{EPS}_P = \frac{\text{EPS}_t}{P_{t-1}}$$

Where

EPS_t: accounting earnings per share over the time period t

P_{t-1}: price of share at the end of year t - 1

Earnings change (dEPS_P): calculated by change in earnings divided by beginning-of-period price.

$$\text{dEPS}_P = \frac{\text{dEPS}_t}{P_{t-1}}$$

Where dEPS_t = EPS_t - EPS_{t-1}

2.3. Easton & Harris Model (1991)

The foundation of this model relied on the idea that book value (owners' equity) and market

value are both “stock” variables indicating the wealth of the firm’s equity holders. Meanwhile, earnings are considered as an important indicator specifying the company’s profitability; in other words, earnings play a vitally essential part to the decision-making process of investors. With the initial intention of answering whether the level of earnings divided by price at the beginning of the return period (EPS/P_{-1}) is relevant for assessing the relationship between earnings and stock returns, Easton and Harris have established a return model incorporating both earnings and stock returns variables, commonly known as Easton & Harris model (1991).

Firstly, the researchers investigated the earnings/stock returns association based on a book value valuation model in which price and book value are both measures of the “stock” value of the shareholders’ equity, implying that

$$P_{jt} = BV_{jt} + u_{jt} \quad (1)$$

Where

P_{jt} is the price per share of company j at time t

BV_{jt} is the book value per share of company j at time t

u_{jt} is the difference between P_{jt} and BV_{jt} .

The connection between the variables – accounting earnings and security returns – may be obtained by taking first difference of the variables in equation (1). The result is:

$$\Delta P_{jt} = \Delta BV_{jt} + u'_{jt} \quad (2)$$

But, in common:

$$\Delta BV_{jt} = EPS_{jt} - D_{jt} \quad (3)$$

Where

EPS_{jt} is accounting earnings per share of company j over the time period $t - 1$ to t

D_{jt} is dividends paid per share of company j over time period $t - 1$ to t .

Substituting (3) into (2), rearranging as well as dividing by P_{jt-1} yields:

$$\frac{\Delta P_{jt} + D_{jt}}{P_{jt}} = \frac{EPS_{jt}}{P_{jt-1}} + u''_{jt} \quad (4)$$

That is, if the assumption is correct, then earnings divided by beginning-of-period price should be an appropriate variable for explaining returns.

Under the light of an earnings valuation model, Easton and Harris examined changes in earnings, particularly the earnings changes variable ($\Delta EPS_{jt}/P_{jt-1}$).

Thanks to proving the linear relation, Easton and Harris addressed that both earnings level and earnings change variables are associated with security returns. The regression model is:

$$R_{jt} = \alpha_0 + \alpha_1 \left[\frac{EPS_{jt}}{P_{jt-1}} \right] + \alpha_2 \left[\frac{\Delta EPS_{jt}}{P_{jt-1}} \right] + \epsilon_{jt}$$

Where

$$R_{jt} = \frac{\Delta P_{jt} + D_{jt}}{P_{jt-1}}$$

is the stock returns

P_{jt} is the price per share of company j at time t

P_{jt-1} is the price per share of company j at time t – 1

D_{jt} is dividends paid per share of company j over time period t – 1 to t

EPS_{jt} is accounting earnings per share of company j over the time period t – 1 to t

$\Delta E_{jt} = E_{jt} - E_{jt-1}$ is the change in earnings per share of company j over the time period t – 1 to t.

2.4. The relationship between of accounting information and stock markets

In the recent decades, the relevance of accounting information on investors' decisions has been mentioned in a lot of studies, for example that of Miller and Modigliani (1966). The aforementioned study shows that earnings variables are the most crucial explanatory ones in valuation models. In other words, accounting information is closely paralleled with investors' decisions. In their research, notably "An empirical evaluation of accounting income numbers", Ball and Brown (1968) assessed the usefulness of accounting information disclosed in the global market. In the same year, Beaver (1968) also suggested that accounting earnings are associated with security price; simultaneously, the study emphasizes EPS (earnings per share) is the indicator that investors care about the most. Moreover, the study conducted by Peasnell *et al* (1987) on London capital market, indicates that accounting information has a small but significant impact on stock returns in the days leading up to announcement. Kirsten Ely and Gregory Waymire (1999) pointed out that income plays essential part to NYSE stock valuation; Collins *et al* (1997) proved the relative association between stock price and information reported in financial statements. Using a different approach, Andreas Charitou *et al* (2000) proposed that Japanese stockholders primarily used earnings and cash flows for evaluating security prices, meaning that disclosed information has a great influence on stock returns. Dimitrios I. Maditinos *et al* (2007) carried out a study

on the Greek stock market from 1992 to 2001, and concluded that stock returns has a relation with EPS, but not ROI (return on investment) and ROE (return on equity).

In Vietnam, several authors investigated the accounting information and stock price relationship, such as Dung Nguyen (2009), who documented the relationship in his domestic market between 2003 and 2007. Based on the Ohlson model (1995), Lina Tran (2013) supported the increase in the value relevance of accounting information over the years. It is worth noting that most Vietnamese studies utilized only price models, while those of other nations widely used both price and returns models to validate the association between accounting figures and market behaviors. Thus, in this paper, we approach this recent issue in the Vietnamese capital market with the aid of the returns model.

3. Data and research methodology

Our data is supported by a four-year dataset from 2010 to 2013 consisting of 108 listed companies on the Ho Chi Minh Stock Exchange. Based on the Easton & Harris model (1991), the Econometrics Theories and the Efficient Market Hypothesis, this study aims to examine the relationship between accounting information reported in financial statements and stock returns on the capital market. We analyzed the data via three econometrics models consisting of the Pooled Regression Model, the Fixed Effects Model (FEM) and the Random Effects Model (REM). We then applied the Hausman Test in order to pick the most appropriate model, between FEM and REM, to describe the actual situation of Vietnam. After regressing panel data of the 108 listed companies, we later performed cross-sectional regression for each year to consider changes in R-square (R-square implies changes in explanatory power of earnings variables in regard to stock returns). Thanks to this procedure, the paper identifies explanatory power of earnings levels and earnings changes variables (EPS_P and dEPS_P) on stock returns (STOCK_RETURNS).

4. Results and discussion

Firstly, we gathered and assessed the sample of listed firms by using the Pooled Regression Model. Our findings are presented in the following table:

Table 1 – Results of Pooled regressions

	Intercept	EPS_P	dEPS_P	Adjusted R-square
Coefficient	0.039528	0.413280**	0.572120**	0.123965

** : statistically significant at 1%. *Source: authors' calculation*

The result shows that the two independent variables (EPS_P and dEPS_P) are each associated with the dependent variable (STOCK_RETURNS) and coefficients are statistically significant at 1%. However, R-square in the model is relatively low (roughly 12.4%), implying the linearity is not apparent. To avoid potential pit falls in thinking, we further analyzed the data by using both FEM and REM. We then ran the Hausman Test to choose the most optimal model. Our results are illustrated in the table below:

Table 2- Results of FEM and REM regressions

	Coefficient	
	FEM	REM
Intercept	0.046479	0.039528
EPS_P	0.374179	0.413280*
dEPS_P	0.598635**	0.572120**
R ²	0.199788	0.123965
Hausman Test	0.088132	

* and **: statistically significant at 1% and 5%, respectively.

Source: authors' calculation

FEM and REM reflect positive linearity between accounting information and stock returns on the market. The coefficients in REM have significance levels at 1% and 5% while the EPS_P coefficient in FEM is not statistically significant at 5%. In addition, the Hausman Test offers no remarkable difference between FEM and REM; therefore, the test supports choosing REM. Statistically, if the number of cross-sectional units N in a panel dataset is large and the number of time observations T is small, and if the assumptions underlying the Random Effects Model holds, then the Random Effects Model estimator is more efficient than the Fixed Effects Model estimator (Damodar, 2006). In addition to this, ESP_P coefficient in REM is higher and more statistically significant than that in FEM while dEPS_P coefficient in REM also has statistically significant levels at 1%.

Although the positive linearity is proven, R-square is rather low, approximately 12.4%. It implies that the effects of accounting information expressed in financial statements on the Vietnamese stock market are considerably weak. A possible explanation is the fledging capital market in Vietnam, so disclosures of financial statements are not yet complete, and cannot be relevant in the decision-making process. Consequently, investors should not wholly depend on reported information.

In order to observe changes in R-square over the period more closely, we performed a cross-sectional regression. The table below presents the results:

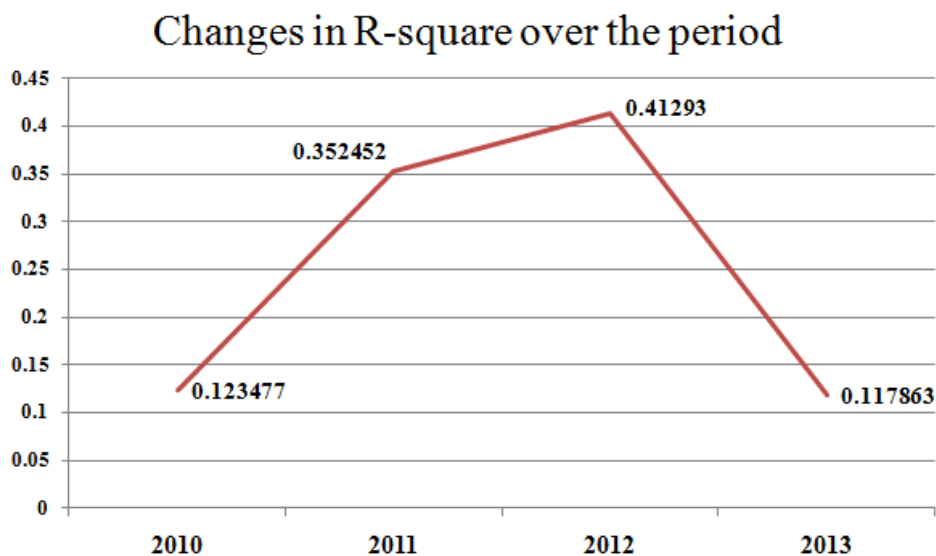
Table 3- Results of Cross-sectional Regression

	Intercept	EPS_P	dEPS_P	Adjusted R-square
2010	-0.284967**	0.764891*	0.870285*	0.123477
2011	-0.446325**	0.853825**	0.300532	0.352452
2012	0.040565	1.190992**	0.268106	0.412930
2013	0.579356**	0.113571	0.441279**	0.117863

* and **: statistically significant at 5% and 1%, respectively.

Source: authors' calculation

Diagram 1- Diagram illustrates changes in adjusted R-square during 2010-2013



Cross-sectional regression again depicts the positive linearity in the explanation of the dependent variable from the independent variables. Nevertheless, only the coefficients in 2010 are all statistically significant. EPS_P coefficients are only meaningful in 2010, 2011 and 2012 while dEPS_P coefficients are only significant in 2010 and 2013.

After considering R-square over the years, we find out that R-square tends to increase in 2010, 2011 and 2012, but suddenly decreases in 2013 (diagram 1); 2013 also experiences a statistically insignificant EPS_P coefficient. A marked enhancement of R-square from 2010 to

2012 shows a potential prospect in explaining stock returns from accounting information. The estimated explanatory power at nearly 41.3% in 2012 is relatively large and expected. Yet, R-square in 2013 plummets to only 11.8%. Such an occurrence illustrates an unstable relationship between accounting information and stock returns, thus creating a need for prudent decision makers.

5. Conclusion

This study examines the relationship between accounting information and stock returns in the Vietnamese stock market. As shown by the results, both earnings levels and earnings changes are each positively associated to stock returns, although said associations are unstable and weak. To provide more insightful information for investors, there is an urgent need to improve the quality of accounting information as well as disclosure procedures. Therefore, there is a need for joint collaboration from the government, corporations and related departments in Vietnam.

References

- Aboddy D., Hughes J. and Liu J. (2002), "Measuring Value Relevance in a (Possibly) Inefficient Market", *Journal of Accounting Research*, 40, 965-986.
- Ball, R. and Brown, P. (1968), "An empirical evaluation of accounting income numbers", *Journal of Accounting Research*, 6, 159-177.
- Beaver, W. (1968), "The information content of annual earnings announcements", *Journal of Accounting Research*, Vol. 6, 67-92.
- Charitou, A., Andreou, A. and Clubb, C. (2000), "The Value Relevance of Earnings and Cash Flows: Empirical Evidence for Japan", *Journal of International Financial Management and Accounting*, Vol. 11, No. 1, 1-22.
- Collins, D., Maydew, E. and Weiss, I. (1997), "Changes in the Value-relevance of Earnings and Book Values over the Past Forty Years", *Journal of Accounting and Economics*, 24, 39-67.
- Damodar, G. (2006), "Panel data regression models", *Essentials of econometrics - 3th ed*, McGraw-Hill international edition.
- Dung Nguyen (2009), "Value-Relevance of Financial Statement Information: A Flexible Application of Modern Theories to the Vietnamese Stock Market", *The DEPOCEN Working Paper Series*, No. 2010/02.
- Easton, P., and Harris, T. (1991), "Earnings as an explanatory variable for returns", *Journal of Accounting Research*, 29 (1991), 19-36.
- Ely, K. and Waymire, G. (1999), "Accounting standard-setting organizations and earnings relevance: Longitudinal evidence from NYSE common stocks, 1927-93", *Journal of accounting Research*, 293-317.
- Fama E. (1965), "The behavior of stock market prices", *Journal of Business*, 38, 34-105.
- IASB (2000), "The framework for the preparation and presentation of financial statements", para. 25-42.
- Lina Tran (2013), "The relationship between stock prices and accounting information

reported in financial statements of the Company Vietnam – empirical investigation through Ohlson model”, Master’s thesis, *University of Economics Ho Chi Minh City*.

Miller, M. H. and Modiglian, F. (1966), “Some estimates of the cost of the capital to the electric utility industry, 1954-57”, *American Economic Review*, 56, 333–391.

Maditinos, D., Šević, Z., Chatzoglou, P. and Theriou, G. (2007), “Earnings as an explanatory tool in explaining stock market returns and the use of Easton and Harris (1991) model: the case of Greece”, *International Scientific Conference, Contemporary Challenges of Theory and Practice in Economies*, University of Belgrade, September 2007.

Peasnell, K., Skerratt, L. and Ward, C. (1987), “The share price impact of UK CCA disclosures”, *Accounting and Business Research*, 18, 3-16.

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