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**An analysis of the effects of profit to security return: An empirical study of Vietnam**

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**ABSTRACT**

The paper analyzes the effects of profit to security return of firms which are listing in stock market of Vietnam. Application of Ordinary Least Square (OLS) and Quantile Regression Model (QR), for data collected from firm in the period from 2006 - 2017. The research measures security return in two different approaches by Easton & Harries (1991) and Benninga (2001). The research result indicates that earning per share and firm size have positive effects to security return, meanwhile the changes in dividend per share have no effect on security return. Upon the results the paper proposes several instructive recommendations for investors, for firms and also for policy makers for their own decisions.

**Keywords:** Earning per share; Dividend per share, Security return.

**1. INTRODUCTION**

The security return has been a topic of great interest for many years. Ball & Brown (1968), Basu (1983), Freeman (1987), Collins & Kothari (1989), Easton & Harris (1991) has modeled income from income variables and security return variables by examining the relationship between the current accounting profit divided by the opening-year price of the stock and the security return. Lipe et al. (1998), Dimitropoulos & Asteriou (2009), and Cheng et al. (2013) used the time series profit model to examine regular income affecting the role of profit level and profitability changes in explaining the security return.

Collins, et al. (1997) conducted an intertemporal and cross-sectional research on the effects of earnings on EPS by collecting data from the US stock market and they reported that the profit model explains 54% for changes in stock price. King & Langli (1998) used a regression model finding the effects of earnings and book value on stock prices and research results with explanatory power of 70%, 60% and 40% respectively for UK, Norway and Germany. The research results show the significant differences between accounting information and stock prices across countries and over time. In an efficient market, stock prices are unpredictable, so earnings from stocks will also be random and the changes follow the standard distribution (Malkiel & Fama, 1970).

In Vietnam, there have been some studies on the relationship between profit and stock price, for instance, the study by Dung (2010), Hai, Diem, & Binh, (2015), and Ha, Hung & Dung (2018). The results of the study are not entirely the same, due to the measurements of

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independent variables used in the model, the studies usually used the data for a short time. In addition, those studies have not shown the effects of profit figure on security return.

The purpose of this study was to analyze the effect of earnings on security return. We measure security return by model found either by Easton & Harris (1991) and (Benninga, 2001) aim to answer question whether it can be applicable to Vietnam market. The study uses a variety of robust regression models to ensure effective estimation, as well as quantile regression model, to ensure a more comprehensive and complete regression.

## 2. Literature review

Up to now, there have been numerous studies of relationship between the profit and security returns. Ball & Brown (1968) investigating the usefulness of profit information to investors' decisions through testing the impact of the EPS on the unforeseeable changes of security return.

Basu (1983) explored the relationship between earnings, market value and return on security. Freeman (1987) studied the relationship between security return and the accounting profitability of large-scale companies compared to small-scale firms. Collins & Kothari (1989) conducted a study of factors affecting the relationship between accounting information and security return. Easton & Harris, (1991) built the profit model from income variables and security return by testing the relationship between beginning ratio of earnings over stock price and dividend per share. Lipe et al.(1998) shows the nonlinear relationship between stock returns and accounting profit, the difference between the capital loss and the profit, and the difference between the companies. Dimitropoulos & Asteriou (2009) examined the relationship between financial statement information and financial indicators or stock prices of listed companies conducted on the Greek stock market. Agnes Cheng et al. (2013) used the time series profit model to examine the regular income effect on the role of profit level and profit change in explaining the stock's return using the unobservable component model classification of earnings into regular profit and temporary profit. Angahar & Malizu (2015) investigated the relationship between earnings and the Nigerian stock markets.

Sharma, et al. (2012) conducted an empirical study examining the relationships between stock price and explanatory accounting variables such as book value per share, dividend per share, earnings per share, dividend payout from Indian firms in the period 2000-2008. Research results show that earnings per share, dividends per share and book value per share have significant impact on the market price of the stock.

Al-Hares, et al. (2012) has conducted a study of all non-financial companies listed on the Kuwait Stock Exchange for the period 2003-2009. Also, researches by Stark & Thomas, (1998), Hand & Landsman, (2005), Lo & Lys, (2000) show that stock price depends significantly on the profit. These studies reinforces previous research findings conducted by Green, et al. (1996), Rees, (1997), Chen, et al. (2001), and Alfaraih & Alanezi (2011). The results of the study also show that there is no difference of the models: book value and income, and book value and dividends. So it can be said that in addition to profits, dividends are also a strong influence on stock prices. Based on the model by Ohlson (1995), there have been many empirical studies for developing countries, such as the study of Shamki (2012) for Jordan, Khanagha (2011) for UAE, Omokhudu & Ibadin (2015) for Nigeria, Khanna (2014) for India, and Pirie & Smith, (2008) for

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Asian countries. The results show that there is a correlation between earnings and stock price, with varying degrees of explanation. Dimitropoulos & Asteriou (2009) researched with data collected from a sample of 101 non-financial companies listed on the Athens Stock Exchange. The time frame extends from 1995 to 2004 and the method used is the OLS regression model. The results show that the ROA and total revenue over total assets have a positive influence on the share price.

For Vietnam, there have been several research conducted by Hai et al. (2015), Ha et al., (2018), Hung, et al. (2018) also reflect the effect of profit information to security return.

In general, the relationship between earnings and security return has been studied extensively throughout the world. In Vietnam, the research on this issue has been followed with different models. From the results of the study, there was evidence of the relationship between profitability and return of security. However, previous studies are based on a variety of theories and models of which has their advantages and disadvantages. Moreover, data collection is not similar in pattern, in size, in time frame, etc. This study will look at what measurement is appropriate for security return. How does profits affect to return of security with firm size is used as independent variable.

### 3. Hypotheses, research model and methodology

#### 3.1. Research hypotheses

**Earnings and changes in earnings:** According to Easton & Zmijewski, (1989), Collins & Kothari (1989) believe that the relationship between the security return and the profit is based on the idea that stock prices are a function of the expected dividend in the future. Stock prices change is based on the investors' expected future dividends which vary accordingly to the expected return of security. The ERC( $\beta$ ) coefficient is an important variable in the linear model for considering the relationship between security return and accounting information reported in the financial statements (represented by profitability information) because it shows the level at which earnings impacts on return of security. Easton & Harris (1991) studied the problem and showed that profit and profit changes simultaneously explain the security return. The authors also demonstrated that the rate of return and the change in the income ratio were correlated with the stock's return. In this study, accounting information is represented by two main variables: earnings and change in earnings. Based on the study by Easton & Harris (1991), the earnings and change in earnings have a positive effect on return of security, the paper puts forward the hypotheses H1 and H2 as follows:

*Hypothesis H1: Profitability have positive effect on return of security*

*Hypothesis H2: The changes in profitability affect positively on return of security*

**Firm size:** Company size is one of the characteristics commonly used in the correlation studies between earnings and stock return in the accounting and financial sectors. Studies show that the size of the company influences this relationship. The be applicable research the author uses the natural logarithm of total assets (Collins & Kothari, 1989)

Basu, (1983) shows that stocks of small-scale companies yield a significantly higher value of stock than their larger peers and that the impact of scale variations is almost non-existent when the security return is controlled by risk and E/P ratio.

According to Freeman (1987), there is a difference in the impact of accounting data between large and small companies. Stock prices of large companies are affected before the effect occurred in small companies. And the magnitude of security return fluctuations around the declaration point of time of small company is larger than that of large companies and the level goodness or badness of extraordinary profit negatively associated to the size of the business

Easton & Zmijewski, (1989) found evidence that company size has the positive impact on the relationship between earnings and security return. Often, large companies are less risky so security returns are expected to be lower and large companies will not react slowly to new information from the market. In addition, larger companies publish more information on profit declaration (Easton & Zmijewski, 1989). Collins & Kothari (1989) also demonstrated through their study that the relationship between profitability and security return varies with different firm scales. Thus we set the Hypothesis 3 as follows:

*Hypothesis 3: The firm size have positive effects to security return*

### 3.2. Research model

Based on the literature review and application of the model proposed by Easton & Harris (1991) and Benninga (2001) to conduct empirical study for data collected on the Ho Chi Minh City Stock Exchange with regression equation model as follows:

$$\text{Model 1: } SR1_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 DEPS_{it} + U_{it}$$

$$\text{Model 2: } SR2_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 DEPS_{it} + U_{it}$$

$$\text{Model 3: } SR1_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 DEPS_{it} + \beta_3 SIZE_{it} + U_{it}$$

$$\text{Model 4: } SR2_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 DEPS_{it} + \beta_3 SIZE_{it} + U_{it}$$

$\beta_0$ : intercept

$\beta_1, \beta_2, \beta_3$ : The regression coefficient of the independent variables

$U_{it}$ : Random error

The variables of models are explained and measured in Table 1

**Table 1: Independent and dependent variables**

Symbol	Variables	Variable type	Measurement	Expected impact
SR1 <sub>it</sub>	Security return of firm <i>i</i> in year <i>t</i>	Dependent	$SR1_{it} = \text{Log} \left( \frac{P_{it}}{P_{it-1}} \right)$	
SR2 <sub>it</sub>	Security return of firm <i>i</i> in year <i>t</i>	Dependent	$SR2_{it} = \frac{(P_{it} - P_{it-1}) + D_{it}}{P_{it-1}}$	
EPS <sub>it</sub>	EPS of firm <i>i</i> in year <i>t</i>	Independent	$EPS_{it} = \frac{EPS_{it}}{P_{it-1}}$	+
DEPS <sub>it</sub>	Changes in corporate earning of firm <i>i</i> in year <i>t</i>	Independent	$DEPS_{it} = \frac{EPS_{it} - EPS_{it-1}}{P_{it-1}}$	+
SIZE <sub>it</sub>	Size of firm <i>i</i> year <i>t</i>	Controlled	$SIZE_{it} = \text{Log} (Tài sản)$	-

Source: Author's establishment

### 3.3. Research Methodology

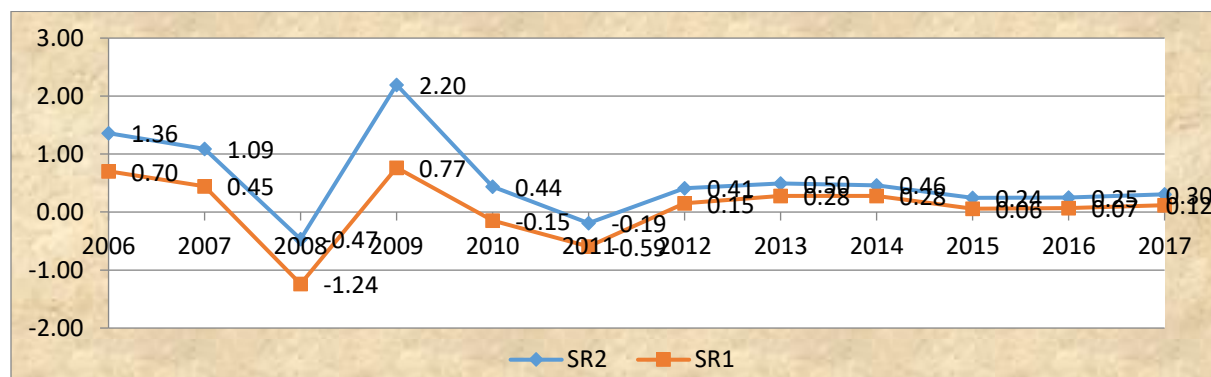
Research data are secondary data collected from financial statements of enterprises listed on the Ho Chi Minh City Stock Exchange during the period 2006 - 2017. The total number of observations is 2001. Data collected including earnings per share (EPS), stock prices at the end of each fiscal year of each company and data are collected from the stock market database.

Using the regression method on panel data to explore the effect of profitability on the security return of listed companies in Vietnam Securities Exchange. Regression methods include standardized OLS regression and Quantile regression model (QR).

Koenker & Bassett (1982) proposed the estimation of the regression parameters on each sub-unit of the dependent variable so that the total absolute difference of the regression function at the dependent variable  $\tau$  of the dependent variable is the smallest. In other words, instead of determining the effect of the independent variable on the mean value of the dependent variable, the regression will help to determine the effect of the independent variable on the dependent variable on each sub-unit of the variable. The quantile regression model has superior benefits over OLS regression. It allows the researcher to look at the whole variation of variable  $y$  of firm  $i$  ( $Y_i$ ) based on the change in percentile  $\theta \in (0;1)$ . On the other hand, according to Hao & Naiman (2007), the assumption in QR is not too stringent as OLS for example, standard distribution conditions and homogeneity variance are not needed to be comply.

**4. Findings and discussions**

Based on Figure 1, there were fluctuations of the security return of enterprises in the period 2006-2017. Specifically, in the first period from 2006 to 2011, there were large fluctuations, especially in 2008 and 2009. Surprisingly, in the period 2012-2017 the security return had little fluctuation. In the period of 2006-2017, there were only 2 years of which the security returns were negative, that is the year 2008 and 2011. The reason for low stock returns was financial distress happened in Vietnam. Figure 1 shows that stock return measured by SR2 higher than SR1, due to the way applied to measure security return. In addition, SR2 also includes annual dividends, so SR2 is always greater than SR1.



**Figure 1: Security return of listed firms in the period of 2006-2017**

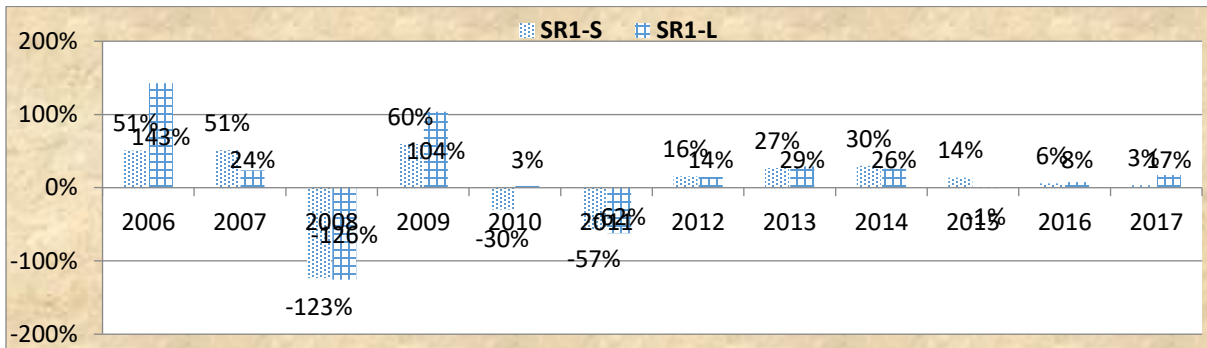


Figure 2: Security return (SR1) of listed firms based on firm size from 2006-2017

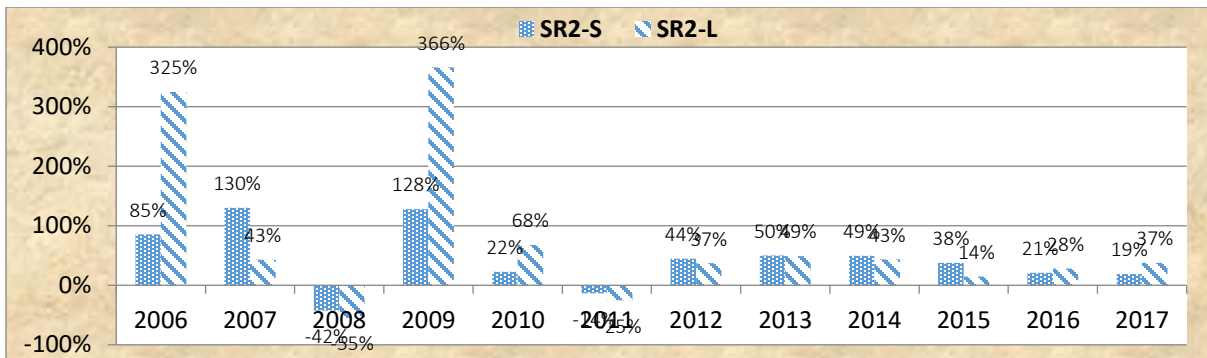


Figure 3: Security return (SR2) of listed firms based on firm size from 2006-2017

Figures 2 and 3 show that firms' security return in each of the years for the whole research period of 2006-2017. The model with SR2 show that for security return of large size companies is much higher than that of the small ones, especially in the difficult years like 2006 and 2009.

The descriptive statistics (Table 2) show that average security return measured by SR1 was 2.4%, and median of 9.5%, meanwhile these indicators measured by SR2 were 33.3%, and 19.3%, respectively. For the earnings, the mean and median value were 20.7%, and 15% while the mean and median value for changes in earnings was 1.3% and 0%. The size of the firms measured by the logarithm of total assets has an average value of 13.951 and a median of 18.41. Thus, the statistical data show that there is a large difference between the mean and the median, so the data of the dependent variable may not follow the normal distribution rule.

Table 2: Descriptive data for variables in the model

Variable	Obs	Mean	Median	Std. Dev.	Min	Max
SR1	2001	0.024	0.095	0.623	-2.659	3.341
SR2	2001	0.333	0.190	1.047	-0.910	27.280
EPS	2001	0.207	0.150	0.387	-3.550	4.330
DEPS	2001	0.013	0.000	0.363	-3.480	3.730
SIZE	2001	13.951	13.841	1.249	11.122	19.185

Source: data extracted from Stata 13.0 by author

Table 3 shows the correlation coefficients between variables, the purpose of this is to examine the correlation between independent variables and dependent variables to eliminate



factors that may lead to multi-collinearity before conducting regression model. As a result, the correlation coefficients between the any pair of independent variables in the model are greater than 0.8, so it is unlikely that multi-collinearity will occur between the independent variables using the regression model. By using VIF value the result shows that the mean VIF of the variables in the model is less than 2. According to (Baltagi, 2008), there is no multi-collinearity occurring in the model.

**Table 3: The result of correlation matrix**

	SR1	SR2	EPS	DEPS	SIZE
SR1	1				
SR2	0.7230*	1			
EPS	0.3404*	0.4700*	1		
DEPS	0.1772*	0.1191*	0.5370*	1	
SIZE	0.0480*	-0.0159	-0.0734*	-0.0173	1

*t* statistics in brackets, \*  $p < 0.05$ ,

Source: data extracted from Stata 13.0 by author

To overcome autocorrelation and error variances, the paper used regression using the OLS-Robust method. As shown in Table 4, the earnings variables have a positive influence on the security return with a statistical significance of 1%, so the hypothesis H1 is accepted. However, the variation and the change in the earnings ratio were negatively correlated with security return. However, the change is so insignificant that the hypothesis H1 was rejected.

**Table 4: Result from OLS-Robust about the effects of profit to security return**

	VIF	SR1	SR2
EPS	1.54	0.554***	1.544***
DEPS	1.41	-0.0134	-0.54
_cons		-0.0912***	0.0197
N		2001	2001
R-sq		0.2518	0.3365

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Source: data extracted from Stata 13.0 by author

**Table 5: Regression result about the effect of profit on security return by period**

	SR1		SR2	
	From 2006-2011	From 2012-2017	From 2006-2011	From 2012-2017
EPS	1.120***	0.455***	3.065***	0.862***
DEPS	-0.0748	-0.00419	-1.499*	-0.0926
_cons	-0.691***	0.0761***	-0.613***	0.207***
N	511	1490	511	1490
R-sq	0.1802	0.3138	0.276	0.342

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Source: data extracted from Stata 13.0 by author

**Table 6: Regression result about the effect of profit on yearly return of security measured by SR1**

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
EPS	0.418*	0.650***	0.979***	0.0911	1.509***	0.820***	0.490***	0.440***	0.319***	1.153***	1.121***	0.158
DEPS	0	-0.251	0.853***	0.199	-0.648***	0	-0.0814	-0.0423	0.0862	-0.0302	-0.131	0.00477
_cons	0.439**	0.212***	-1.326***	0.666***	-0.593***	-0.798***	-0.0133	0.184***	0.212***	-0.113***	-0.0741*	0.107***
N	19	70	101	39	68	214	235	244	247	254	255	255
R-sq	0.22	0.498	0.238	0.035	0.261	0.246	0.292	0.205	0.224	0.249	0.233	0.018

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Source: data extracted from Stata 13.0 by author

**Table 7: Regression result about the effect of profit on yearly return of security measured by SR2**

	SR2											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
EPS	1.083**	4.527***	1.183***	0.874	1.837***	1.017***	1.009***	0.832***	0.688***	1.890***	1.456***	0.32
DEPS	0	-3.862**	-0.0805	-0.405	-0.656***	0	-0.34	-0.0885	0.159	-0.0862	-0.0676	-0.147
_cons	0.675**	-0.565***	-0.631***	1.680*	-0.0951	-0.444***	0.0642	0.317***	0.322***	-0.0323	0.0629	0.280***
N	19	70	101	39	68	214	235	244	247	254	255	255
R-sq	0.254	0.876	0.514	0.021	0.248	0.592	0.49	0.298	0.322	0.189	0.315	0.015

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

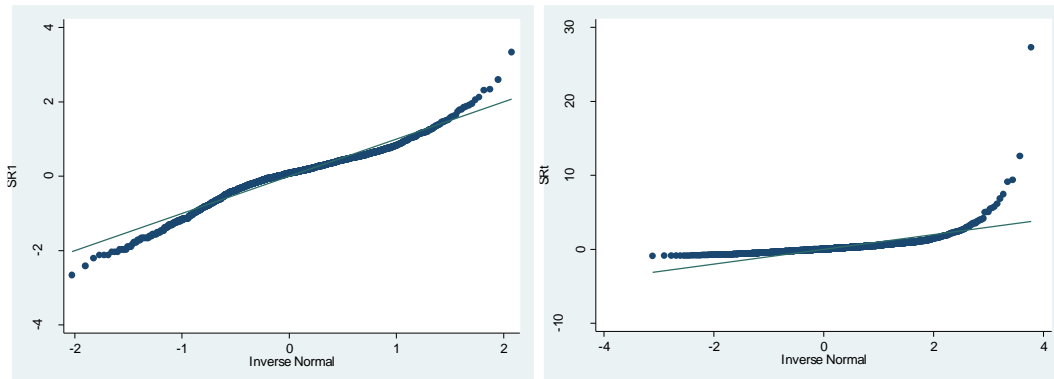
Source: data extracted from Stata 13.0 by author



As Figure 1 shows, in the period 2006-2017, changes in return on security can be divided into two phases. Phase 1 from 2006 to 2011, the return had a strong fluctuation and the second phase from 2012-2017 that indicator had little change. On the basis of this, we conduct a regression using the OLS-Robust, results show in Table 5, which indicate that the income ratio affects the security return in both periods whatever it is measured SR1 or SR2. For the change in the earnings, there was a negative effect, statistically significant at 10% in the period 2006-2011, measured by SR2, the others were not statistically significant.

We continue to analyze the impact of earnings on the annual security return and we found the similarity in results between studies when measuring security return by SR1 or SR2. In Table 6, Table 7 shows that the earnings has statistically significant influences on security return, except for 2009 and 2017. Meanwhile, the change in the earnings causes some insignificant variation in security return, except for 2008 and 2010, when measurement of security return SR1 and except for year 2007 and 2010 when it was measured by SR2.

Descriptive statistics results show the shape of mean and median of SR1, SR2. This indicates the significant impact on regression if the dependent variable does not follow the normal distribution rule.



Source: data extracted from Stata 13.0 by author

**Figure 2: Security return of research firm in the period of 2006-2017**

Upon figure 2, we could realize that the security return does not follow the standard distribution rule. Also, the Shapiro-Wilk test results, the Shapiro-Francia test for the model, also evidence that security return (measured by either SR1 or SR2) do not follow standard distribution rules. Therefore, when considering the effect of profit on the least squares regression model (OLS), the results will not be reliable, so the usage of quantile regression model is needed to meet the verification requirements.

**Table 8: Result of quantile regression model (QR) for the effect of profit on security return (measured by SR1)**

	SR1						
	1%	10%	25%	50%	75%	90%	99%
EPS	0.774***	0.736***	0.606***	0.639***	0.578***	0.493***	0.409
DEPS	0.214	0.16	0.11	0.0619**	0.0278	-0.0782	-0.199
_cons	-1.880***	-0.938***	-0.356***	-0.0292***	0.222***	0.522***	1.287***

N	2001	2001	2001	2001	2001	2001	2001
Pseudo R2	0.0623	0.0548	0.0555	0.0806	0.0873	0.0792	0.093

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Source: data extracted from financial statements and calculated from Stata 13.0 by author

**Table 9: Result of quantile regression model (QR) for the effect of profit on security return (measured by SR2)**

	SR2						
	1%	10%	25%	50%	75%	90%	99%
EPS	0.693***	0.953***	0.971***	1.075***	1.181***	1.208***	1.92
DEPS	0.237***	-0.00279	0.0444	0.0497	0.00722	-0.179	-0.967
_cons	-0.790***	-0.542***	-0.274***	-0.0102	0.259***	0.694***	3.071***
N	2001	2001	2001	2001	2001	2001	2001
R-sq	0.1176	0.1229	0.1269	0.1406	0.1335	0.1017	0.107

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Source: data extracted from financial statements and calculated from Stata 13.0 by author

Table 8 and Table 9 show that the correlation coefficients have positive relationship and it is statistically significant at 1% in all quantiles, except for quantile 99%. Meanwhile, the change in the earnings has positively correlated and the median was statistically significant when measuring security return by SR1, but the effect was very small. For security return by SR2, the change in earnings has positive relationship and statistically significant at quantile 1%.

**Table 10: Result for OLS for the effects of profit on security return based on firm size**

	SR1	SR2	SR1		SR2	
			Small-scale	Large-scale	Small-scale	Large-scale
EPS	0.565***	1.549***	0.558***	0.697***	1.786**	1.325***
DEPS	-0.0173	-0.542	-0.106	0.133	-0.905	0.137
SIZE	0.0367***	0.0192	0.0411	0.0622***	-0.163	0.0854
_cons	-0.605***	-0.249	-0.664	-1.013***	2.045*	-1.139
N	2001	2001	1001	1000	1001	1000
R-sq	0.2436	0.3351	0.0216	0.2521	0.0819	0.3471

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Source: data extracted from Stata 13.0 by author

In the study, when analyzing the impact of profit on security return, we examine the impact of firm size (measured by assets) on security return. We divided the sample firms into two groups (based on median), including large firm group and small one. The results of Table 10 show that the earnings has positive effect at statistically significant level. Scale variables have a positive and statistically significant effect on the security return when measured in SR1, but only significant for large-scale groups, thus the accepted H3 hypothesis. However, the firm size

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variables do not affect security return when measured in SR2. From the research results, the authors give some following discussions:

The EPS is positively correlated with the stock's return and is statistically significant at 1%, consistent with the original hypothesis (H1), which again confirms the model by Easton & Harris (1991), and in accordance with the case of the Vietnamese stock market. The findings are consistent with research conducted by Ball & Brown (1968), Basu (1983), and Hung et al. (2018).

The change in dividend per share was not statistically significant with the security return, so the hypothesis H2 was rejected. This study is also contrary to the findings of Freeman (1987), Collins & Kothari, (1989), and Easton & Harris (1991).

The firm size factor (SIZE) yield a positive and statistically significant 1% impact on the security return, thus the initial hypothesis H3 is accepted. The results of this study are consistent with the studies by Lipe et al., (1998), Dimitropoulos & Asteriou (2009), Agnes Cheng et al. (2013), and Dang, Tran, & Nguyen (2018).

## 5. Recommendations and conclusion

The author used panel data with 2001 observations collected from firms listed on the Vietnam stock market from 2006 to 2017. We applied the regression model of OLS, and Quantile Regression model with independent variables are the earning per share (EPS), the change of the dividend per share and control variable is firm size (SIZE). The regression results show that the EPS, SIZE has a positive effect on the security return, while the change in dividend per share variable does not affect the return on security. Based on the results of the study, the research team made some recommendations as follows:

For investors, when deciding to invest in stocks, they should pay focus on provided the accounting information, because this information affects the stock price, such as the EPS on the income statement. However, there are many other factors that have influenced the security return as well as the stock market. The report show that the  $R^2$  is 33.3% it means that the model can only explain 33.3%). Before investing in a stock, investors should look at the EPS and the EPS over share price. If these two variables increase, then the stock return will increase and vice versa. The empirical results on the different firm size also suggest the difference between firms about rate of return on security.

Enterprises need to disclose their financial statements in a timely manner, because investors can rely on financial statements to make investment decisions, so the enterprises itself need to ensure the quality of the financial statements published so that they could attract new investors and maintain the current investors. The full disclosure of financial statements, audited reports and others documents will provide investors with confidence in the transparency of information.

EPS is one of the most important factors affecting the security return. So enterprises need to have solutions to minimize expenses, improve efficiency of production and business. Taking advantages of high technology, friendly with the environment, etc. also attract new investors, reducing the cost of raising capital.

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Finally, the research results also show that the scale has an impact on the security return. Therefore, enterprises should take advantage of scale in order to increase business efficiency and firms' stock price.

## References

- Agnes Cheng, C., Lee, B.-S., & Yang, S. (2013). The value relevance of earnings levels in the return-earnings relation. *International Journal of Accounting and Information Management*, 21(4), 260-284.
- Al-Hares, O. M., AbuGhazaleh, N. M., & Haddad, A. E. (2012). Value relevance of earnings, book value and dividends in an emerging capital market: Kuwait evidence. *Global Finance Journal*, 23(3), 221-234. doi: <https://doi.org/10.1016/j.gfj.2012.10.006>
- Alfaraih, M., & Alanezi, F. (2011). The usefulness of earnings and book value for equity valuation to Kuwait stock exchange participants. *The International Business & Economics Research Journal*, 10(1), 73-89.
- Angahar, P. A., & Malizu, J. (2015). The Relationship between Accounting Information and Stock Market Returns on the Nigerian Stock Exchange. *Management and Administrative Sciences Review*, 4(1), 76-86.
- Ball, R., & Brown, P. (1968). An empirical evaluation of accounting income numbers. *Journal of accounting research*, 6(2), 159-178.
- Baltagi, B. (2008). *Econometric analysis of panel data*: John Wiley & Sons.
- Basu, S. (1983). The relationship between earnings' yield, market value and return for NYSE common stocks: Further evidence. *Journal of financial economics*, 12(1), 129-156.
- Benninga, S. (2001). *Financial Modeling*. Cambridge, The MIT Press.
- Collins, D. W., & Kothari, S. (1989). An analysis of intertemporal and cross-sectional determinants of earnings response coefficients. *Journal of accounting and economics*, 11(2-3), 143-181.
- Collins, D. W., Maydew, E. L., & Weiss, I. S. (1997). Changes in the value-relevance of earnings and book values over the past forty years. *Journal of accounting and economics*, 24(1), 39-67.
- Chen, C. J., Chen, S., & Su, X. (2001). Is accounting information value-relevant in the emerging Chinese stock market? *Journal of International Accounting, Auditing and Taxation*, 10(1), 1-22.
- Dang, N. H., Tran, M. D., & Nguyen, T. L. A. (2018). Investigation of the impact of financial information on stock prices: The case of Vietnam. *Academy of Accounting and Financial Studies Journal*, 22(2), 1-12.
- Dimitropoulos, P. E., & Asteriou, D. (2009). The value relevance of financial statements and their impact on stock prices: Evidence from Greece. *Managerial Auditing Journal*, 24(3), 248-265.
- Dung, N. V. (2010). Value-relevance of financial statement information: A flexible application of modern theories to the Vietnamese stock market. *Quarterly Journal of Economics*, 84, 488-500.

- 
- Easton, P. D., & Harris, T. S. (1991). Earnings as an explanatory variable for returns. *Journal of accounting research*, 19-36.
- Easton, P. D., & Zmijewski, M. E. (1989). Cross-sectional variation in the stock market response to accounting earnings announcements. *Journal of accounting and economics*, 11(2-3), 117-141.
- Freeman, R. N. (1987). The association between accounting earnings and security returns for large and small firms. *Journal of accounting and economics*, 9(2), 195-228.
- Green, J. P., Stark, A. W., & Thomas, H. M. (1996). UK evidence on the market valuation of research and development expenditures. *Journal of Business Finance & Accounting*, 23(2), 191-216.
- Ha, H. T. V., Hung, D. N., & Dung, T. M. (2018). Impact of Accounting Data on Stock Prices: The Case of Vietnam. *International Journal of Accounting and Financial Reporting*, 8(1), 140-154.
- Hai, T. T. T., Diem, N. N., & Binh, H. Q. (2015). The Relationship between Accounting Information Reported In Financial Statements And Stock Returns-Empirical Evidence From Vietnam. *International Journal of Accounting and Financial Reporting*, 5(1), 229-238.
- Hand, J. R., & Landsman, W. R. (2005). The pricing of dividends in equity valuation. *Journal of Business Finance & Accounting*, 32(3-4), 435-469.
- Hao, L., & Naiman, D. Q. (2007). *Quantile regression: Thousand Oaks, CA: SAGE*.
- Hung, D. N., Ha, H. T. V., & Binh, Đ. T. (2018). Impact of accounting information on financial statements to the stock price of the energy enterprises listed on Vietnam's stock market. *International Journal of Energy Economics and Policy*, 8(2), 1-6.
- King, R. D., & Langli, J. C. (1998). Accounting diversity and firm valuation. *The International Journal of Accounting*, 33(5), 529-567.
- Koenker, R., & Bassett, J. G. (1982). Robust tests for heteroscedasticity based on regression quantiles. *Econometrica. Journal of the Econometric Society*, 50(1), 43-61.
- Khanagha, J. B. (2011). Value relevance of accounting information in the United Arab Emirates. *International Journal of Economics and Financial Issues*, 1(2), 33.
- Khanna, M. (2014). Value Relevance of Accounting Information: An Empirical Study of Selected Indian Firms. *International Journal of Scientific and Research Publications*, 4(10), 1-6.
- Lipe, R. C., Bryant, L., & Widener, S. K. (1998). Do nonlinearity, firm-specific coefficients, and losses represent distinct factors in the relation between stock returns and accounting earnings? *Journal of accounting and economics*, 25(2), 195-214.
- Lo, K., & Lys, T. (2000). The Ohlson model: contribution to valuation theory, limitations, and empirical applications. *Journal of Accounting, Auditing & Finance*, 15(3), 337-367.
- Malkiel, B. G., & Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The journal of finance*, 25(2), 383-417.
- Ohlson, J. A. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research*, 11(2), 661-687.
- Omokhudu, O. O., & Ibadin, P. O. (2015). The value relevance of accounting information: Evidence from Nigeria. *Accounting and Finance Research*, 4(3), 20-30.

- Pirie, S., & Smith, M. (2008). Stock prices and accounting information: evidence from Malaysia. *Asian Review of Accounting*, 16(2), 109-133.
- Rees, W. P. (1997). The impact of dividends, debt and investment on valuation models. *Journal of Business Finance & Accounting*, 24(7-8), 1111-1140. doi: DOI: 10.1111/1468-5957.00154
- Shamki, D. (2012). Impact of non accounting information on the value relevance of accounting information: The case of Jordan. *International Journal of Business and Social Research*, 2(1), 9-24.
- Sharma, A. K., Kumar, S., & Singh, R. (2012). Value relevance of financial reporting and its impact on stock prices: Evidence from India. *South Asian Journal of Management*, 19(2), 60.
- Stark, A. W., & Thomas, H. M. (1998). On the empirical relationship between market value and residual income in the UK. *Management Accounting Research*, 9(4), 445-460. doi: <https://doi.org/10.1006/mare.1998.0088>