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THE STOCK PRICE VALUATION OF EARNINGS PER SHARE AND BOOK VALUE: EVIDENCE FROM TUNISIAN FIRMS

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Abstract

Without making any distinction of the applicable accounting standards, the aim of this paper is to present a comparative analysis of accounting value relevance of earnings and book value, of firms listed in Tunisian Stock Exchange. The findings provide that the book value is more relevant than the earnings per share, whilst the combined value relevance of book value and earning has declined when firms have negative earnings. The important contribution of this study is documenting the decreasing of value relevance of negative earnings and the increasing value relevance of book value in the variation of share prices.

Keywords: **Accounting Information; Value Relevance; Earnings; Book Value; Stock Price**

INTRODUCTION

The accounting value relevance is “the ability of accounting numbers and values to summarize the information underlying the situation of firm’ stock prices, thus the value relevance are indicated by the statistical association between financial and accounting data and prices or returns” Liu and Liu [1] identify. Indeed, the stock exchanges is the places which contribute in rising of facilitate the corporations equity capital reflects the maintain an availability of liquidity and continuous of economic growth for the holder of the stocks who invest in these stocks. On the other terms the main purpose of accounting value and data is to provide information about the firm’s economy to different stakeholder and users’ information.

In this paper, the market price of the firms is taken as measurement of dependent variable and accounting information and value are taken as independent variable. Accounting information is explained by the book value and earnings per share. The important criteria for determining the firm’s value is the stock’s price are the most obvious. In fact, the stock price maximization is the most important objective for organizations to save their credibility and economic growth and in the mind of potential investors. During the investment process potential investors compare the value of company which is determined by the stock prices [2]. To understand the determinant that can affect firm’ stock price, the investors anticipate the trend of price changes and accordingly they make necessary decisions about the purchase, the taken or not taken of stock.

Accordingly, the making decision of financial aspects in any organization about the firm’s future is dependent on accounting information disclosure and other information available. The Accounting information can be viewed as the product of firms’ accounting systems which linked on accounting standards (e.g., Core et al. [3]). Indeed, most investors make their financial decisions based on accounting data and values, it is expected that rational decisions are made. Whether or not the accounting information disclosed is linked to investors' decisions becomes an imminent empirical issue to be considered.

The using of accounting information depends on several determinants and criteria, some of which are related to the information’ users while others are related to the information’ quality characteristics. Accounting and financial information are important in the making decisions and they will reduce the problem of informational asymmetry between the managers and the investors. Scott [4], report that the accounting information is hypothesized to be value if it conveys information that modifies investor expectations of the firms’ future cash flows, and ultimately causes the stock price to change.

Though the investors can use non-financial information in order to make their investment decisions, still conventional investors give more weight to the use of financial information then the non-financial information. According to the survey realized by the Boston College (2007), 62% of respondents favour financial information in the investment decisions and only 38% preferred to the non-financial information for use. The main objective of this study is to examine the relevance of accounting information for the valuation of stock in an emerging market. Indeed we investigate the importance of accounting information for Tunisian stock market responsiveness.

The remaining of the paper is organized as follows. The section 2 presents the review of literature. Section 3 details the hypotheses and explains sample and methodology. The results of our study are discussed in section 4. The last section is the conclusion of the study.

LITERATURE REVIEW

The value relevance of accounting information topics was examined amply in several studies, however, this research has the incentive to evaluate the value relevance of accounting respectably with stock price, which are mostly not considered in the financial literature. Similarly, Abiodun [5] have conduct a study on the value relevance in corporate sectors' of 40 Nigerian companies, during the period 1999 to 2009, using the logarithmic regression model. The findings reports that the earnings per share are more relevant than the book values by extension that, the information contained in the income statements, as ably proxied by the earnings, reflects more the corporate values of firms than the information contained in the balance sheet, as ably proxied by the book values. Relevant accounting information is such that affects the process of making decisions by the evaluation of past, present and future events. Accordingly, Abayadeera [6] examines the value relevance of financial and non-financial information of 91 Australian firms in high-tech industries running through various sectors of Australian economy. The equity evaluation model developed of Ohlson [7] was applied by several studies to test the value relevance of accounting information, with overall findings argues that book value is the most significant factor and earnings are the least significant determinants in deciding share prices in high-tech industries in Australia. Abayadeera [6] gives argues to support previous research that showed a declined value relevance of earnings value relevance combined with increasing of book value relevance'.

Mohammadi [8] examines the association between accounting and the stock price value, based on the sample of 194 firms listed in Tehran exchange market from 2007-2009. The results provide that there is no significant association relating the accounting value relevance to the firms' value. The research argues that this may be happening due to lack of efficiency of investment market and inability in using the accounting value relevance by investment market activists.

Based on a sample of 38 firm listed in the Athens Stock Market from 1996-2008, Glezakos et al. [9] tested the implication of book value and earnings on the firms' stock prices. Their findings reported that the combined of explanatory power of the above parameters in the formation of firm' stock prices enhances over time of research. The research further argues that the effect of earnings decreased comparatively with an increasing of book value effects. The findings generated by the research conducted by Halonen et al., from Large Cap of Sweden during 2007 to 2010, reports that the value relevance from the information of balance sheet measured by book value per share has increased as compared with the earning per share. These research shows that accounting information explains a high level of the stock price valuation. In a recent study, Nayeri et al. [10] investigates on the factors explaining the value relevance of accounting information for the investors in e firms of Tehran Stock Exchange during six years. The authors use the Ohlson [11] model and the cumulative regression analysis to test the firm size, being profitable or loss generating, the earnings stability and firm growth on the value relevance of accounting information. The study provides that the factors used in the model contribute in the enhancement of the value relevance of accounting information for investors in Tehran Stock Exchange.

In another research, Dobija and Klimczak [12] conducted a comparative value relevance study by examining patterns in the relevance of accounting information as an estimation of the month in which he estimated current market values. The research observed Ohlson [11] model on a sample of firms listed in the Germany and France stock exchange, and shows dramatically divergent patterns of fit. In France firms, the research finds that the accounting data have a high significance in the relevance for market valuation after two and three months from the publication of annual reports. However in Germany, accounting information has stronger relevance during the fiscal year. Pervan and Vasilj [13], examine the accounting' information relevance on the capital markets of 97 firms listed in Southeast Europe stock exchange (Ljubljana Stock Exchange, Zagreb Stock Exchange, Sarajevo Stock Exchange, Banja Luka Stock Exchange and Belgrade Stock Exchange). The findings provide the relevance of accounting information in all stock exchanges of their study with some difference in this Stock Exchange.

Similarly, Miah [14] examine the effects of earnings per share and net assets value per share on market price of share. The study provide that there is insignificant relationship between these two variables as only about 6.5% of variation in share price can be explained by changes in earnings per share and net assets value per share. Using the GARCH models, Mgbame and Ikhatua [15] examined if the accounting information affects the stock price volatility of stock market returns in the Nigerian Capital Market. The findings provide that the accounting information can explains the stock price volatility in the Nigerian stock market. More specifically, the dividend per share, book values and earnings are more related to the stock price volatility.

HYPOTHESES DEVELOPMENT AND RESEARCH METHODOLOGY

Hypotheses Development

Based on the reviews of the value relevance literature, there is a significant association between value relevance of accounting information and stock prices valuation. Indeed, several theoretical insights in the topic of value relevance of accounting, and in order to answer to the question whether there is an affects of accounting information on share prices valuation, the research hypotheses was set. Thus, following main research hypotheses is focused to analyse the relationship between share prices valuation, Earnings per share and Book values for the Tunisian selected companies:

Hypothesis 1: the accounting information represents a determinant that affects the stock price valuation of selected companies of Tunisian capital market

H 1a: The stock price valuation is positively related to the earning per share.
H 2b: The stock price valuation is positively related to Book value per share.

Hypothesis 2: Book value is more value relevant than earnings per share in the stock price valuation.

Hypothesis 3: The book value and earnings relevance' declined when firms have negative earnings.

Sample and Methodology

In order to meet the objectives of the study, we refer to an extensive literature revue, studies ad several research in the topic of accounting value relevance which notice that the most of research were conducted on the developed capital markets but that there are very few research conducted on small capital market of developing counties. Regarding the fact that the accounting value relevance research was not severally tested in the Tunisian Stock Exchange it is reasonable to ask the following questions:

Is there any relationship linked the share prices to accounting variables in an emerging market which observed and support in several developed capital markets? Is there an enhancement was observed about the value relevance of accounting information during the period of our study?

The Data about the Tunisian firms were collected from primary sources from the DataStream databases. These data sets span the 6-year period from 2010 to 2015. During the process of sample selection, the study includes firms with stock prices, book values and earnings, cash flows other financial data sufficient for empirical analysis, but the paper excludes financial banking business firms and impairment of capital firms due to administrative issues.

Our sample consists of twenty eight firms listed on Tunisian stock exchange.

- Total firms listed in Tunisian stock exchange 83
- Total firm in banks and financial firms 24
- Missing data 31 Firms
- Final sample size 28 non-financial firms.

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By substituting both dependent and independent variables in the above model:

In order to test the hypotheses the following models can be formed based on the studies of Ohlson [11] and Feltham and Ohlson [7]:

$$P_{it}=\alpha 0 + \alpha 1EPS_{it} + e_{it} \quad (1)$$

$$P_{it}=\alpha 0 + \alpha 1BV_{it} + e_{it} \quad (2)$$

$$P_{it}=\alpha 0 + \alpha 1EPS_{it} + \alpha\ 2BV_{it} + e_{it} \quad (3)$$

Where:

P_{it} – the value of Stock price 3 months after the end of fiscal year "t", where year "t" it is the event year,

EPS_{it} – the value of earnings per share in year "t",

BV_{it} – book value per share at the end of year t,

e_{it} – other value relevant accounting information in year "t".

RESULTS

Table 1 illustrates that the descriptive statistics for the sample over a period of 6 years from 2010 to 2015. Share price at 3 months after year end (P) has mean and standard deviation of 19.62423 and 48.03809 respectively. The earnings per share (EPS) over the period with the average earning per share at 0.5375 and standard deviation of 2.646446 (Table 2). The average of Book value per share (BVPS) is 4.530357 with a value of standard deviation is 16.92672.

Table 1: Descriptive Statistics.

Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
P	168	19.62423	48.03809	0.68	366.05
EPS	168	0.5375	2.646446	-13.5	11.5
BV	168	4.530357	16.92672	0.4	191.8

Table 2: Correlation Matrix.

	P	**EPS**	**BV**
P	1.0000		
EPS	0.5604	1.0000	
BV	0.0823	-0.0365	1.0000

It can be seen from the above Table 2 that there is positive correlation between the stock price and earnings per share. While the correlation between Book Value and Earning per share is quite low and takes a negative coefficient (Table 3).

Table 3: Model Summary of the panel least square regression.

	Dependent Variable Stock price per share		
MODEL	1	2	3
Intercept	4.51	3.86	3.32
	0.000	0.000	0.001
EPS	8.72	*	9.79
	0.000	*	0.000
BV	*	12.27	13.27
	**	0.000	0.000
R^2	0.3141	0.4755	0.6682
Adj R^2	0.3099	0.4724	0.6642
F *fisher statistics*	76.01	150.51	166.18
p-value	0.0000	0.0000	0.0000

*Correlation is significant at the 0.05 level. **Correlation is significant at the 0.01 level (2-tailed).

The regression analysis is undertaken with the dependent variable taken at 3 months after fiscal year end, in order to accommodate the market' inefficiency. As opined by Dung, the using of prices sometime after year end has the advantage of impounding more fully the accounting information at year end. The inefficiency of the market demands the passage of time to afford the resolution of the inefficiency of the market in accommodating accounting information released after year end. The regression model is carried from three equations using the Panel OLS, after that we divided the sample on profit firm and loss firms to compare the value relevance of accounting information with the two groups of companies.

From the equation (1), the result from earning per share, using the panel estimation are consistent with the predict sign in a high level of significance with t-statistics=8.72 and P-values=0.0000, with an acceptable global significance of R^2=31.41 and F=76.01. The result displayed in Table 3, shows a significant and positive relationship relation the earning per share to the share price. From the foregoing, we accept the hypothesis H1a and conclude that earning per share is value relevant.

Concerning the equation (2), the results from the estimation of the book values show that under the panel least square, the relationship with share prices is positively significant. The result are consistent with the predict hypothesis with t-statistics=12.27 and P-value=0.0000, these results gives argument to support the hypotheses H1b. Comparatively with the equation (1) the results provide that the book value are more relevant in the explanation of share price variation than the earning per share, indeed the finding supports the alternative hypothesis, the statistics from the equation (2), such as an R^2=0.4755 and F=150. 51 gives more explanation about the variation of the dependent variable than those from the equation (1) R^2=31.41 and F=76.01. Accordingly to these result, these result was supported by the third equation that shows a high values takes by the statistics of book values than those related to the earning per share. Moreover, the Table 3 argues that the book values are more relevant than the earning per share.

The predictive content of EPS and BV are significantly reflects in the price share valuation. The results provided in the above Table 3 lend stronger support for the predict hypothesis. The results are satisfactory in terms of usual diagnostic tests.

It is found that from the Table 3, we can observe stock price valuation is explained by value relevance of the variation in coefficients standing at independent variables by 67%. The spearman correlation matrix show there is no problem of autocorrelation between the variables. The model have an overall satisfactory level of power as shown by F-statistics (F=166.18 and P=0.0000).

From the above statistical data it is obviously apparent that there is a relationship between the changes in share price and changes in accounting variables (i.e. EPS and BVS). The R^2 for the panel regression indicates that earnings and book value jointly explain about 67 percent (F=166.18 at $P<0.00$) of the cross-sectional variation in stock prices of the whole sample. Both of the repressors are significantly related to stock prices (Table 4). This result is similar to other emerging markets such Bae and Jeong and Pathirawasam about the Sri Lankan firms and Okuns and Peter in the Nigerian firm. Therefore, the explanatory power of earnings and book value of Tunisian firms are significantly similar than that of developed countries.

Table 4: Regression of Stock prices for Profit firms and Loss firms, respectively.

	$P_{it}=\alpha_0 + \alpha_1 EPS_{it} + \alpha_2 BV_{it} + e_{it}$	
	(A) Profit Firms	(B) Loss Firms
α_0	-6.56	4.00
	0.000	0.000
α_1	9.89	0.74
	0.000	0.468
α_2	9.94	2.75
	0.000	0.010
R^2	0.7160	0.2227
F *fisher statistics*	126.08	4.44
p-value	0.000	0.0201

Table 4 present the combined value relevance of earnings per share and book value by dividing total sample into profit and loss firms groups. The results presented in the Table 4 argues that the book value is the dominant variable in the valuation of stock price for both group of profit and loss firms, while earning per share is insignificant valuation of stock price for the group of loss firms but it have a significant effect on the value relevance in the group of profit firms. The average coefficients of EPS and BV are about 9.89 and 9.94 in profit firms with R^2 value of 0.7160 and these variables takes value of 0.74 and 2.75 in the group of loss firms with adjusted R^2 value of 0.2227. By comparison, the average R^2 are higher than that in profit firms (0.7160 vs. 0.2227). The results argues that the earnings have no value relevance in the combined value relevance of book value and earnings model while book value exhibit dominant value relevance regardless of earnings quality.

CONCLUSION

This study empirically examined the value relevance of accounting information in Tunisia in order to ascertain whether certain accounting variables have the ability to explain the valuation of stock price on the Tunisian Stock Exchange. The research design of this study refers to the Ohlson' [11] price model to present the regression' results. It has investigated the value relevance of accounting information in Tunisia. The paper provides strong evidence to value relevance of accounting information in the price model valuation of TSE firms. The period covered by the study was 2010 to 2016. The study was motivated by literature review in the U.S and Europe market and some emerging markets. The findings show that the focus of investors should be on book values and less emphasis should be on earnings.

This study has been undertaken to assess the relationship between two accounting variables (EPS and BV) and market price of share valuation. The results presents above reflect a strong relationship related these two variables and the share price value. Overall, the implication of this study is the suggestion that the investors should have more basic knowledge and accounting information about business and economics to make their decision. Also, the investors should not refer to the accounting information disclosed by speculators or other co-investors who have the similar interest of the identical phenomenon.

Accordingly to the hypothesis testing the association related the earning per share to the book value per share, it can be argued that the predict null hypothesis is rejected as shown by the results which confirmed that the value relevance of book value and earnings has declined when firms have negative earnings.

In other terms a positive relationship between changes in share price and Book value per share is provided, and the result gives argues to reject the null hypothesis. Hence it is apparently assumed that accounting information is properly reflected on share price or investors use the accounting information to make their investment decision in Tunisian stock exchange and share price is significantly influenced by the accounting variables used in this study. Rather other variable it may be for example the cash flow also play an important role to explain the variation of price share aspect.

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