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The Value Relevance of Book Value, Earnings Per Share and Cash Flow: Evidence of Tunisian Banks and Financial Institutions

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Abstract

Value relevance can be measured as the statistical association between accounting information and stock price valuation. Using a sample of available financial firms listed in the Tunisian stock exchange during the period 2010 to 2016, the purpose of this paper is to investigate the relative value relevance of book value, earnings and cash flows in security prices. We find that book value, earnings and cash flow are significantly and positively related to the firm value. Also, the using of these variables jointly is positive related to the firm stock price share. Comparatively, we obtain evidence that book value is statistically more value relevant than earning per share models, expectedly the earnings explains a high proportion of the stock price for the group of financial institutions more than the banks. The paper use recently available accounting data, and proposed an improvement concerning the measure of value relevance of accounting value relevance.

Keywords: Value relevance, Book value, Earnings, Cash Flow. Share price, financial sector.

JEL codes: D8 L25 M41

1. Introduction

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The increasing important of financial report for international markets led to more study to examine the accounting information relevance in emerging markets (Kargin, 2013; Chebaane & Othman, 2014; Umoren & Enang, 2015; Abubakar et al., 2017; ahmadi, 2017). The results of this literature on these emerging markets provided different findings on the relevance of accounting information with respect to local accounting standards and new accounting reporting standards for different countries and sectors.

The paper investigates the value relevance of book value and earnings in security prices from

The accounting value relevance research is based on the idea that accounting information are useful in the determination of firm value in the case that their cross sectional variation corresponds with the cross sectional variation in stock prices value. Thus, the value relevance implies the ability of the accounting information to affect decisions of investors whether by changing or confirming their expectations about the result or consequences of actions or events. Refer to the study Barth (2001), accounting information to be relevant it will verify the condition that accounting numbers should be related to current firm value. Indeed, if there is no association observed between accounting numbers and firm value, the accounting information cannot be considered as value relevant. Barth (2001) provides the value relevance research examines the association between accounting amounts and equity market values. The value-relevance stream of our study is based on the premise that if accounting information is useful, investors will adjust their behavior and the market will respond through changes in stock prices value. Therefore, accounting information is considered value-relevant if stock price movements are associated with the release of the information. Francis and Schipper (1999) suggested four possible alternative interpretations of value relevance.

Refers to Beaver (2002), the value relevance research investigates the relationship between a security price dependent variable and a set of independent accounting variables related to accounting information, therefore there are several approaches to this definitional explanation.

Oyerinde (2009) define the accounting value relevance from four perspectives: (1) The predictive view of value relevance: The accounting number is relevant if it can be used to predict future earnings, dividends, or future cash flows. (2) the information view of value relevance – where the value relevance of accounting information is measured in terms of market reactions to new information. (3) According to this approach value relevance focuses on the usefulness of accounting information in equity valuation. Fundamental analysis view of value relevance - intrinsic value of the firm is measured without referring to market value. (4) Concerning measurement view of value relevance, the authors provide that the financial statement is measured by its ability to capture or summarize information that affects equity value.

According to Dontoh et al., (2012), the accounting value relevance has been a primary paradigm in accounting research. Indeed, several research of accounting literature has suggested that accounting data have lost their value relevance because of a shift from a traditional capital-intensive economy to a high-technology, service oriented economy. Moreover, it is claimed that financial statements are less relevant in assessing the fundamental value of listed firms on the capital market. These considerations are based on researches that provide a temporal decline in the implication of accounting information (earnings, book value, dividends, and cash flow) on the stock prices valuation. Indeed, Nilsson (2003) states that "if an accounting item has a reliable association with a market matrix, then the accounting matrix captures

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or aggregates the information that is used by market participants to determine prices or returns". These studies examined the association between a combinations of earnings, change in earnings and book value and contemporaneous stock prices or returns.

Our study is motivated by several empirical literatures on accounting value relevance including Ohlson (1995), Jang et al. (2002), Choi et al. (2006) and among others. Many literatures revue have raised the questions about the accounting and financial information contents and value relevance of accrual earnings (Collins et al. 1997; Jang et al. 2002). Several studies reports that much weaker accounting information contents of earnings for loss companies than the level profit firms. Similarly, Collins et al. (1997) provides that the value relevance of 'bottom line' earnings has declined. Also, Jang et al. (2002) find an incremental explanatory power of book values increase, while that of earnings decrease from 1981 to 2000. Choi et al. (2006) reports that the accrual earnings are more value relevant factor than cash flows in the growth stage, but in the decline stage, cash flows are more value relevant than earnings. This study investigates firstly on the effect of value relevant variable among book value, earnings per share and cash flows in firms' valuation model. Secondly, has the value relevance of book values, earnings and cash flows increased or decreased?

The rest of the paper proceeds as follows. Section 2 presents the previous related literatures that examine the accounting value-relevance and outlines the hypothesis. Section 3 presents research design. Section 4 discusses the results. The section 5 includes the main conclusion.

2. Literature Review and Hypothesis

Since the study of Ball and Brown (1968), many literatures have tested the accounting value relevance of book value, earnings and cash flows. Other studies reports that book values and earnings have significant information content in equity valuation (Ohlson 1995; Feltham and Ohlson 1995). Hadi (2004) examined the accounting information content to the investors in Kuwaiti banks listed in stock exchange market. The author was uses six financial ratios in his study along with regression analysis to clear the problems of study. The findings indicate that the accounting information is very useful to investors in Kuwaiti banks, and most ratios are significant except the loss ratio.

Elshandidy (2014) examines the accounting information relevance of the Chinese stock market during 1999 to 2012, the author shows that the converged International Financial Reporting Standards (IFRS) with Chinese Accounting Standards is more value relevant in A-shares and B-shares and it is partially more value relevant with the H-share market.

Perera and Thrikawala (2010) conducted a research about the relevance of accounting data on investor's stock market decisions in Commercial Banks listed in the Colombo Stock Exchange (CSE) of Sri Lanka. The relevance of accounting information was measured by the level of correlation between the Market Price per Share (MPS) and accounting data such as Earning per Share (EPS), Earning Yield (EY) and Return on Equity (ROE). The data analysis was based on the accounting information in the annual report of Commercial banks listed in the CSE from 2006 to 2009. The finding reports a significant relationship between the relevance of accounting information and value of Market Price per Share of Commercial Banks listed in the stock market of Sri Lanka. Akarim, et al. (2012) examined the relevance of earnings data on stock market returns in Turkish Banking Sector traded in Istanbul Stock Exchange from 2000 to

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2010. The results reveal that there is a significant relationship between stock returns and accounting earnings data supporting the relevance theory. Although most prior research (Biddle et al. 1995; Dechow et al. 1998; Landsman and Maydew 2002) reports that the earnings are more value relevant than cash flows, but the findings are not conclusive. Contrary, other previous studies raised the questions of earning' value relevance of (Basu 1997; Francis Schipper 1999; Jang et al. 2002). These studies argue that the value relevance of earnings declined similarly to the increasing book value. Accordingly, other research reports that a negative earnings and earnings management can cause the deterioration of the value relevance of earning

Prior researches provide that the combined value relevance of book value and earnings has declined when firms have negative earnings (Basu, 1997). Several studies document that the value relevance of earnings declined, while that of book value increased. Similarly, other studies also indicate that negative earnings can cause the deterioration of the value relevance of earnings. Thus, following main research hypotheses emerge from the proceeding discussions of the paper.

These hypotheses are focused on analysis of relationship between share prices and accounting information on the Tunisia selected companies:

H1: Earnings are positively associated with stock price share.

H2: Book values are positively associated with stock price share.

H3: cash flows are positively associated with stock price share.

H4: The combined value relevance of book value, earnings and cash flows increase in the explanation of stock price share

3. Research Design

3. 1 Research Design

A research design refers to the approaches, framework or the overall strategy of conducting research studies. Here the researcher has no control over certain factors or variables as the events already exist and can neither be manipulated or changed. The population of the study refers to the totality of all the elements or variables under study from which the researcher draws his sample. The study population comprised of 24 banks and financial firms quoted on the Tunisian Stock Exchange (TSE, 2016). The data collection method was secondary data. The secondary data-earnings per share, book value per share and returns on equity were obtained from the Data are taken from the official site of the DataStream (worldscope). Annual data of during the period 2010-2016 have been collected from the above mentioned site. This study adopted the stratified random sampling technique by selecting 24 corporate firms drawn from financial sector listed on the Tunisian Stock Exchange.

The Tunisian stock exchange is the principal stock market of Tunisia established in 1969 and has currently (till June, 2016) 83 listed firms. In order to examine the relationship between the book value, earnings and the firm' equity value, this paper basically use a generalized version of the Ohlson (1995) model. The research was conducted on selected companies whose shares are listed in the Tunisian Stock

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Exchange, and in order to achieve better analysis of accounting value relevance analysis was limited 24 companies during 7 years.

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

Table 1: Sample composition

Services	Code	Number of firms in the sample per sector	
Banks	1	11	45,80%
Other financial institutions	2	13	54,20%
Total		24	100%

3.2 Methodology

The methodology is based on quantitative approach using multiple regression analysis. In this area, we contribute to the accounting literature on the quality of financial reports by showing the importance of book value and earnings on the explanation of Stock price. In order to test the research hypothesis related to the value relevance of accounting information, the value relevance of financial statements is measured by their ability to capture or summarize the information that has affected stock price summaries which makes them relevant in equity valuation. The Ohlson' (1995) Price Valuation Model has been used in the present study to determine the value relevance of accounting information. This model expresses market price per share (MP) as a function of both earnings per share (EPS) and book value per share (BVPS). This paper uses one main dependent variable: the stock price. The stock price is the adjusted close price of shares. We collected variables from Datastream to cover the period of three months after the fiscal year end so as to ensure that the accounting information was available and had been absorbed by investors (Tsalavoutas et al., 2012). The following Value Relevance Models have been used to assess the value relevance of accounting information:

$$P_{it} = \alpha_0 + \alpha_1 EPS_{it} + e_{it} \quad (1)$$

$$P_{it} = \alpha_0 + \alpha_1 BV_{it} + e_{it} \quad (2)$$

$$P_{it} = \alpha_0 + \alpha_1 CashF_{it} + e_{it} \quad (3)$$

$$P_{it} = \alpha_0 + \alpha_1 EPS_{it} + \alpha_2 BV_{it} + \alpha_1 CF_{it} + e_{it} \quad (4)$$ where:

P_{it} – Stock price 3 months after the end of fiscal year t, where year t is the event year.
EP_{it} – earnings per share in year t,
BV_{it} – book value per share at the end of year t,
$CashF_{it}$- cash slow in period t
e_{it} – Earnings in period t

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4. Empirical Results

The table 2 gives descriptive statistics for the dependent variables (P), independent variables (EPS and BV). P is the adjusted close price of shares. Table 2 gives descriptive statistics for the dependent variables (P), independent variables (BV, EPS and CashF). The panel A of table 2 shows that Share price at 3 months after year end (P) has a mean and standard deviation of 16.33333 and 23.75112 respectively, its highest value is 83. Total means of book value per share (BV) is 3.09444 and a standard deviation of 5.07155, and its highest value is 16.66231. The earnings per share (EPS) over the period with the average mean of 1.12356 and standard deviation of 2.775708, its highest value is 7.7088. The cash flow (CashF) over the period with the average at -258.3889.

The panel B shows the existence of positive correlation between the dependant variable with the BV and EPS respectively in the level of 0.4414 and .3161. The overall result of correlation matrix indicates that there is no problem of multi-colinearity between the independents variable (BV, EPS and CashF), indeed the level of correction is quite low.

Table 2. Descriptive statistics and correlation matrix

Panel A: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
P	168	16.33333	23.75112	2.3	83
BV	168	3.09444	5.07155	.3666	16.66231
EPS	168	1.12356	2.775708	-5.6	7.7088
CashF	168	-258.3889	12185.15	-52192	68506

Panel B: Correlation matrix

	P	BV	EPS	CashF
P	1.0000			
BV	0.4414	1.0000		
EPS	0.3161	0.0740	1.0000	
CashF	0.1871	0.1234	0.0909	1.0000

To test the hypothesis, the regression analysis is carried from four models. Table 3 reports the value relevance of book value, earnings and cash flow separately and a combined model of book value, earnings and cash flow jointly. The model 1, 2 and 3 examine the univariate regression results for the three accounting variables separately. A first look of results in table 3, shows that both models reveal that book value, earnings and cash flow are significantly related with the share prices. However, the R^2 for the book value model is 40.57 percent while the corresponding figure is 29.99 percent for the earnings and 23.50 percent for cash flow model'. Therefore, the explanatory power of book value is higher than those of the earnings per share and cash flow. These results reflect that the book value is more relevant than the earnings and cash flow in the stock price valuation of the Tunisian financial sector. Turning to our

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hypotheses, the finding from the estimation of the book values provides evidence for a positive and significant relationship related book value to the share prices. The result are consistent with the predict hypothesis with t-statistics = 34.37 and P-value = 0.0000, these results gives evidence to support the hypotheses H1.

Concerning the second model, the statistics from the equation (2), such as an R^2= 0.3399 and F= 15.77. This result was supports the second hypothesis, that shows a high values takes by the statistics of earnings per share. Comparatively with the equation (1) the results provide that the earnings per share are less relevant in the explanation of share price variation than the book value. About The third hypothesis the results are land consistent each other for the sample of our study, the findings argument that cash flow are relevant to explain the variation of share price valuation', the results give some supportive evidence for third hypothesis that provide the needed of information about cash flow such that it influences the economic decisions of investors by helping them to evaluate past, present and future events for investors and others makers' decisions related to the Tunisian of financial institutions. The findings give evidence to support H3.

The study highlighted the significant role of BV, EPS and CashF in determining the levels of price share of Tunisian banks and financial institutions. The results of research show that the book value, earnings and cash flow are differently related to share prices of the overall sample. The highest total explanatory power of accounting information is measured by third model the where the book value and earnings per share jointly (56.79%) and the lowest by the first model with the earnings (23.50%). The results are satisfactory in terms of usual diagnostic tests. The value of R^2 is quite high depicting that indeed the independent variables jointly explain about 56.79% of the total variation in dependent variable such us presented by the result of the third model. The overall performance of the model is satisfactory as shown by F-statistics (F= 18.87 and P=0.0000). These results gives evidence to support the hypotheses H4 that expect a positive relationship between combined of book value, earnings and cash flow in association with stock price share valuation. Although our findings show positive and significant coefficients of independent variables, these results are consistent with previous research studies. By comparison, the average R^2 values of the book value, Earnings and cash flow model are higher than those of the separately book value model, earnings model and cash flow respectably. Comparatively with the others models, the results indicate that the cash flow is low significant than the other variables in the explanation of accounting information value relevance.

Table 3: Value relevance of earnings and book value of the Tunisian banks and financial institutions

	Dependent Variable Stock price per share			
Model	$Pit = \alpha_0 + \alpha 1 BV_{it} + e_{it}$	$P_{it} = \alpha_0 + \alpha_1 EPS_{it} + e_{it}$	$P_{it} = \alpha 0 + \alpha 1 CashFit + e_{it}$	$P_{it} = \alpha_0 + \alpha_1 EPS_{it} + \alpha_2 BV_{it} + \alpha_3 CF_{it} + e_{it}$
Intercept	9.67 (0.000)***	4.69 (0.000)***	15.16 (0.000)***	3.31 (0.001)***
BV	5.86 (0.000)***	-	-	5.65 (0.000)***
EPS	-	3.97 (0.000)***	-	3.84 (0.000)***
CashF	-	-	2.27 (0.025)**	1.55 0.123
R^2	0.4057	0.3399	0.2350	0.5679

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Adj R^2	0.4001	0.3136	0.282	0.5426
F *fisher statistics*	34.37	15.77	5.15	18.87
Prob > F	0.0000	0.0000	0.0247	0.0000

5. Conclusions

This study empirically examined the value relevance of book value, earnings per share and cash flow in Tunisia in order to ascertain whether certain accounting variables have the ability to affect share price on the financial sector of Tunisian Stock Exchange. The scope of the study is limited to the data of 2011 to 2015. The result of the analysis revealed that book value, earnings per share and cash flow are sensitive to share price with large proportion being positively sensitive to share price. In addition, it was found that v book value is the most widely used accounting variable for investment decision in Tunisia, followed by earning per share and cash flow. The findings of this study are consistent with those of Al-Shubiri, (2010); Ramasawmy and Ramen (2010) and Abiodun (2012). The conclusion reached was that in Tunisia, accounting information has not lost its value (i.e accounting information is value relevant).

The important contribution of the study is investigating the value relevance and incremental information contents of book value, earnings and cash. More precisely our study documents the value relevance of accounting information in the financial firms of Tunisian stock exchange. This paper tests four hypotheses. First, the results shows that in the book value, earnings and cash flow have greater explanatory powers are relevant in the explanation of price per share. Second, Book value is more value relevant than the earnings per share and cash flow has greater than other accounting information. The paper shows supportive evidence for all hypotheses. In sum, both the book values and earnings models provide consistent evidence and the results are in general are consistent with the literature, in that we can confirm that accounting information is value relevant in the Tunisian Stock Exchange. A potential policy implication is that financial sector in Tunisian market needs complementary information sources other than published accounting reports to become more informationally-efficient.

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