

The value relevance of accounting information: A study of listed banks in the Egyptian Stock Exchange (EGX).

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Abstract

The purpose of this research is to provide empirical evidence concerning the value relevance of accounting information announced by the banks listed in the Egyptian Stock Exchange (EGX) including Earnings per share (EPS), Book value per share (BVPS), and market value per share (MVPS) or share prices over the period 2010-2015. Additionally, the research aims at identifying the most significant value relevant variables among the financial related variables. In particular, the research attempts to measure the quality of accounting information. This includes investigating the statistical relationship between the accounting information represented by bottom line information i.e. book value and earnings per share, and the market value per share. The research was conducted based on Ohlson residual income valuation model (1995). Data were collected from secondary sources mainly the financial statements of the banks for the financial period from 2010 to 2015. The findings of the research indicated that the accounting information disclosed by the Egyptian listed banks for the whole sample with pooled data reported a low percentage of variation in the banks' stock prices. In addition it was revealed that EPS has a significant impact on stock prices or market value per share (MVPS) while BVPS has an insignificant impact on MVPS. This result was quite different in the case of each bank individually. So the main conclusion of the study is that earning per Share (EPS) is the most value relevant variable in this study and it is significant at 0.05 level.

Keywords: Value relevance of accounting information, book value, earnings, share price, Egyptian Stock Exchange (EGX).

1. Introduction

Numerous value relevance studies have been conducted since over 45 years with different perspectives. Value relevance literature investigates the relation between stock market values or returns and the accounting numbers reflected in the financial statements. This trend of research has been begun by Ball and Brown (1968) as the first trial to investigate the empirical relationship between earnings and stock market return, it was considered as a distinction in the capital market research. The study of Ball and Brown was followed by many other landmark empirical studies in the same trend, with applications vary among different countries in order to measure the value relevance of accounting information. There were many important attempts to measure the value relevance till the study of James Ohlson 1995 which succeeded in finding the most suitable financial statement information directly related to stock prices in measuring the value relevance in addition to determining the theoretical model for measurement and its theoretical foundation which is embedded in the neoclassical theory of finance (Dung 2010, Bolibok 2014). Ohlson model (1995) has been implemented by many studies for investigating the value relevance of accounting information and provided superior results (El Shamy & Kayed 2005, Khanagha 2011, Ferraro & Veltri 2012, Vann

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2012, Bartulovic et al. 2013, Chandrapala 2013, Elisa et al. 2013, Kargin 2013, Bolibok 2014, Günther 2015).

It is worth mentioning that the market value of a company is an aspect of most importance to investors when taking investment decisions due to the need for reliable and relevant financial information (Khanagha, 2011). Investors have to assess the market value using information contained in the financial statements among other macroeconomic information. Reliable and relevant financial information play an important role in decision making by equity investors and other stakeholders. While the usefulness of financial statements' information was the basis to ascertain the quality of this information; value relevance is considered one of the main tools for investigating the usefulness of accounting information contained in the financial statements in the process of decision making. Toward this end, value relevance investigation is important to be conducted especially on the banking sector in Egypt for its own specificity for stock market growth (Kothari 2001, Khanagha 2011). So, the research question about the value relevance of the banking sectors' information in Egypt can be justified. Despite all efforts in the capital markets and financial accounting research; to the best of our knowledge there is a few numbers of empirical studies to identify the value relevance of accounting information in Egypt.

The importance of this research emerges from the notion that value relevance research is one of important capital markets research topics of current interest to researchers (Kothari 2001). It was considered one of the basic measures of the financial reporting quality and so gets its importance as financial statements are the tools of communication between the companies and their shareholders. So research on value relevance of accounting information is of importance due to capital market regulators' and standard setters' interest in improving the quality of financial reporting (Nimalathasan and Vijitha 2014).

The research was motivated by the lack of value relevance research in the Egyptian economy. Evidence emerged from the research results is likely to be helpful in capital investment decisions concerning banks. In addition the study results shed light on the importance of the sustainable development of the Egyptian Stock Exchange (EGX) through providing more valuable and reliable financial information. Also it contributes to the critical argument of the gap between regulations of accounting standards and the actual implementation in the market.

The remainder of this paper is organized as follows. Continuation of this section contains literature review and followed by defining value relevance from different perspectives. The second section discusses value relevance models. The third section related to the research methodology and selecting data and sample. The fourth section is about findings. The summary, discussions, and future research are presented in the last section.

1-1 Literature review

Over the last decades; a recent trend of research measuring the relation between accounting numbers and stock market values or returns has appeared with a great attention from researchers, market participants, and standard setters as well. Value relevance approach is one of three different approaches of studying the impact of accounting information on stock market values or returns (i.e. information content, valuation relevance, and value relevance), with the objective of measuring the usefulness of accounting amounts in equity valuation.

Value relevance research is an important trend of capital market research that relates the ability of accounting information to create value with the market value of equity. Many academicians addressed the importance of this trend of research; Beaver (2002) stated that

value relevance research is important in providing evidence on the relation between accounting numbers and equity value and the predictive ability of those accounting information. Also the study of Modi (2015) indicated that the importance of value relevance research is implied in its objective of investigating the validity, adequacy, and reliability of the company's accounting information provided for investors' useful decisions.

Studies of value relevance have been mainly classified further into different types of studies which have been conducted in different ways (Francis and Schipper 1999, Holthausen and Watts, 2001, Nilsson 2003, Barth 2006, Mortensen 2009, AL Barrak 2011). An important trend of value relevance studies investigates the impact of IFRS application on the value relevance of accounting information in many different countries. Literature has offered contradicting results about whether relevance of accounting information has declined or increased over time in accordance with IFRS application. Khanagha (2011) investigates the value relevance of accounting information in United Arab Emirates (UAE) and provided evidence that accounting information is value relevant in UAE stock market which has been declined post IFRS adoption. Furthermore, Bolibok (2014) aims at investigating the impact of IFRS on the value relevance of accounting information of banks listed on the Warsaw Stock Exchange and the study's analysis indicated that there was no significant improvement in the value relevance of accounting information announced by banks after introducing IFRS in Poland. Additionally, Elbannan (2016) investigates the value relevance of banks voluntary human capital disclosures in addition to the impact of IFRS adoption on the value relevance of these disclosures. The study has indicated that comprehensive IFRS framework adoption has reduced the value relevance of voluntary human capital disclosures due to the availability of alternative information.

On the other hand Kargin (2013) investigates the value relevance of accounting information in pre and post financial periods of IFRS applications for Turkish listed firms and the results showed that there was an improvement in the value relevance of accounting information in the post-IFRS period considering book values with no improvement for the value relevance of earnings. Also the study of Elisa et al. (2013) investigates the value relevance of financial reporting and its impact on stock prices in Sweden after the introduction of the new IFRS standards in 2005 and the results revealed that value relevance from the balance sheet, measured by BVPS, has increased while the importance of the value relevant accounting data from income statement has decreased.

Many other studies followed other trend in studying the value relevance of accounting information. The study of Tharmila and Nimalathasan (2013) aimed at identifying the impact of value relevance of accounting information on share market vulnerability of the listed manufacturing companies in Colombo stock exchange (CSE) and the results revealed that the value relevance of accounting information affect market vulnerability with high explanatory power that 83.3% of variation in market vulnerability was explained by variation in value relevance of accounting information. Also in the same trend was the study of Vijitha and Nimalathasan (2014) which focused on examining the impact of value relevance of accounting information on share price by identifying the variables of value relevance of accounting information such as Earning per Share (EPS), Net Assets Value Per Share (NAVPS), and Return On Equity (ROE) and Price Earnings Ratio (P/R) and their relation to Share Prices of manufacturing companies in Colombo Stock Exchange (CSE) and its results indicated that the value relevance of accounting information has significant impact on share price and is significantly correlated with share price. Additionally the study of Chandrapala (2013) was based on the value relevance of two variables i.e. earnings and book value and how ownership concentration and firm size affects the value relevance of the two variables and concluded that the value relevance for ownership concentrated firms is higher than ownership non-concentrated firms; in addition the value relevance for larger firms is higher

than smaller firms, and the value relevance of earnings and book value is below average which reflects that the model needs more variables to be included, and that book value of equity is more value relevant than earnings in Sri Lanka. Moreover, the study of Obaidat (2016) focused on determining the more value relevant accounting information with concern to accrual signals and cash signals for investors in making investment decisions in Amman Stock Exchange (ASE) and the results indicated that the most value relevant information was financial risk followed by previous earnings, liquidity, expected earnings, market stock price, stability of dividend and stability of earnings respectively in addition to indicating the superiority of the value relevance of earnings to cash flow information.

The current research embraces the second trend of value relevance studies which scopes the importance of investigating the value relevance of accounting information depending on different disclosed information and how this affects the investors' decisions which were regarded as the most important users of information disclosed in the financial statements.

1-2 Value relevance from different perspectives.

Value relevance definitions can vary according to its different perspectives; the research will focus on the early described perspectives by Francis and Schipper (1999), which were the first interpretations of value relevance, then after Mortensen (2009), has indicated those perspectives as the different approaches of value relevance.

While value relevance has been studied from many different perspectives, it has been applied in different countries with different methodologies, and gives different results. As a result, there were a voluminous number of studies investigating the value relevance of accounting information providing many different views resulting in different definitions. Value relevance can be defined from the fundamental analysis view (Mortensen, 2009) as the ability of financial statements information to convey the intrinsic value of shares according to the movements in stock prices, which results in trading profits. On the other hand, it can be defined from the prediction view as, the ability of financial statements information to predict the variables used in the specific valuation model of the company. In addition, under the information view; value relevance can be defined in terms of the statistical association between information presented by financial statements and stock returns; based on the impact of new information on investors' actual usage in assessing stock returns (Barth, 2006). while under the measurement view, value relevance can be defined in terms of the statistical association between information presented by financial statements and stock returns based on the impact of bottom line measurements of the financial statements on the value of stocks, regardless of the usage of those information by investors. Francis and Schipper (1999) stated that; " Under this view, value relevance is measured by the ability of financial statement information to capture or summarize information, regardless of source, that affects share values". So, both the information and measurement perspectives of value relevance research can be inspired from the qualitative characteristics of accounting information prescribed in the conceptual framework of IASB and FASB, i.e. relevance and reliability.

The study's view of interest of value relevance is the measurement view and it can be differentiated according to the applied research design into relative association studies and incremental association studies (Mortensen, 2009). The relative association studies are comparative studies where it compares the association between market values and different accounting numbers under different standards. The study can be classified as an incremental associate study which is concerned with investigating the explanatory power of a certain variable to the stock market value.

2- Models of value relevance.

In order to link accounting amounts to value creation; this is the role of valuation models. Albarrak (2011) described this relation as deciding whether accounting disclosures contain useful information about the firm's ability to create value. Valuation models mostly used in value relevance studies were; balance sheet model, earnings capitalization model, and Ohlson model (Albarrak, 2011). The majority of value relevance research was based on the valuation theory set forth in Ohlson valuation model (1995) and its subsequent refinements; it was also considered one of the most important developments in capital market research (Beaver 2002, Nilsson 2003).

Ohlson residual income valuation model was based on two basic assumptions (Ota 2001, Nilsson 2003, Beisland 2009, Albarrak 2011); the first one was concerned with the equality of firm's equity value with the present value of all future dividends. The second assumption of Ohlson model deals with clean surplus accounting where any change in book value of equity must be resulted from earnings after accounting for net dividends.

In order to study Ohlson valuation model it can be decomposed into two basic components; residual income model appeared in 1938 in a research of Preinreich fifty years before Ohlson model, in addition to the information dynamics proposed by Ohlson (Lo and Lys, 2000).

2-1 Residual Income Valuation RIV-model.

It is one of the mostly used valuation models for measuring the value created by firms just in the case of a positive residual income. Nilsson (2003) stated that there were two main elements for firm valuation; the book value of equity as a measure of capital investment, and earnings or abnormal earnings as a measure of the present value of stocks expected future residual income. Ohlson model combined its two basic assumptions in this first component which is combination of the divined discount model which constitutes that the market value of a firm equal the present value of all future dividends or free cash flow to equity (Beisland 2009, and Albarrak 2011) in addition to Ohlson's assumption that the clean surplus relation holds i.e. book value of equity only changes with net income or dividends withdrawals; this is in order to use accounting variables in equity valuation (Ohlson, 1995).

2-2 Information dynamics by Ohlson as an extension to RIV model.

Ohlson valuation model was designed basically for overcoming the limitation of the RIV model represented in not accounting for and relating the current earnings and past information concerning book values of equity to equity value (Nilsson, 2003). So, other information should be included when valuing a firm and measuring its equity value. This results in considering the stochastic process of residual income known as liner information dynamics which implies that residual income of future periods is dependent on the current residual income in addition to considering the impact of non accounting information by error correction factors (Bolipok, 2014).

3-Research methodology

The research was based on the regression variation approach in order to measure the value relevance of accounting information. This approach was based on investigating the explanatory power as a measure of market value according to the price model in terms of the ability of earnings and book values of equity to explain stock performance (Khanagha, 2011). However research on value relevance was basically based on studying the relation between market values and accounting information, it doesn't take into account how this accounting information used in valuing the company but how it explain variations in stock prices

(Chandrapala 2013, Beisland 2009). The research was based on the data of banks listed in the Egyptian stock exchange. Due to EGX listed banks and the continuance of banks during the research period, in addition to the availability of banks' data, the final sample consists of 7 banks. The combined data on market values, book values, and earnings yielded the final sample of 126 bank-year observation. Ohlson residual income model (1995) is used for investigating the value relevance of accounting data for the given period 2010:2015 with the aim of exploring the relations between equity market values with the two financial reporting variables, i.e. equity book value per share as an indicator from the balance sheet, and earnings per share as an indicator from the income statement (Kargin, 2013).

The model equation can be stated as follows:

$$MVPS_i = \alpha_0 + \beta_1 BVPS_{it} + \beta_2 EPS_{it} + \epsilon_{it}$$

Whereas;

$MVPS_{it}$ represents market value per share (stock prices) for bank i at time t , $BVPS_{it}$ represents book value of equity per share for bank i at time t , and EPS_{it} represents earnings per share for bank i at time t .

Possible hypothesis can be formulated based on the conceptualization of the research problem in order to achieve the research objective.

H1: Value relevance of accounting information has a significant impact on share price.

H1a: Value relevance of earnings per share (EPS) has a significant impact on share price.

H1b: Value relevance of book values per share (BVPS) has a significant impact on share price.

4-Findings

Table 1 presents the estimation results of the regression analysis of price on earnings and book value. The results revealed that adjusted R^2 for banks listed in the Egyptian stock exchange is different among banks; it indicates that earnings and book value jointly according to model 1 for CIB, QNB, Credit Agricole, and Gulf Bank explain around 60, 51, 65, and 60 percent respectively of variations in stock prices against 36 percent in Al-Baraka Bank and 4 percent according to Housing & Development Bank which is a low explanatory power of earnings and book values for variations in stock prices. On the other side, the analytical results with correspondence to model 2 for each bank revealed that earnings express 62, 69 percentage for CIB and Credit Agricole respectively which means that a high proportion of the variance in stock prices is explained by the bank's earnings. While for the same accounting period for the other banks; earnings explain a low percentage of variations in stock prices. For the third model which is based on book values as the independent variable 69, 72, 54, and 51 percentage of variations of stock prices is explained by book values in CIB, Credit Agricole, Gulf Bank, and Suez Canal Bank respectively, with rest of the sample's banks explain a low variations of stock prices.

In accordance to the research hypotheses; all banks revealed insignificant impact of earnings per share and book values per share jointly as representative of the financial statements information on stock prices according to model 1. While in accordance to model 2 and model 3 with EPS and BVPS respectively as independent variables all banks also revealed insignificant impact on stock prices except CIB and Credit Agricole which revealed a significant impact of EPS and BVPS individually on stock prices or MVPS.

Table 2 presents the estimation results of pooled regression of price on earnings and book values of Egyptian banks. The sample consists of 126 year observations of 7 Egyptian banks listed in the Egyptian Stock Exchange for the period from 2010 to 2015. The adjusted R² for the pooled data of the banks indicates that earnings and book value jointly explain around 18 percent of the variations in stock prices for the whole sample. While earnings as an independent variable are significantly related to stock prices, book value of equity is not significantly related. This means that for the whole sample of banks, book value of equity has insignificant impact on the variations in stock prices, but earnings per share has a significant impact on stock prices or market values.

Table 1- Value relevance of earnings and book value of listed banks individually.

No	Bank name	Models	Regression coefficient		R ²	Adj.R ²	F-Value	Sig
			EPS	BVPS				
1	CIB	Model 1	0.175	0.705	0.757	0.595	4.677	0.120
		Model 2	0.834		0.696	0.619	9.137	0.039
		Model 3		0.868	0.753	0.692	12.220	0.025
2	QNB	Model 1	3.286	-2.700-	0.708	0.513	3.636	0.158
		Model 2	0.641		0.411	0.264	2.796	0.170
		Model 3		0.518	0.269	0.086	1.470	0.292
3	Credit Agricol	Model 1	0.303	0.596	0.789	0.648	5.598	0.097
		Model 2	0.867		0.752	0.690	12.143	0.025
		Model 3		0.883	0.779	0.724	14.118	0.020
4	Gulf Bank	Model 1	-0.302-	0.915	0.706	0.509	3.594	0.160
		Model 2	0.066		0.004	-0.245-	0.017	0.901
		Model 3		0.793	0.629	0.536	6.785	0.060
5	Suez Canal Bank	Model 1	-	0.778	0.605	0.506	6.119	0.069
		Model 2	-	-	-	-	-	-
		Model 3	-	0.778	0.605	0.506	6.119	0.069
6	Al-baraka Bank	Model 1	-	0.700	0.491	0.363	3.852	0.121
		Model 2	-	-	-	-	-	-
		Model 3	-	0.700	0.491	0.363	3.852	0.121
7	Housing & Dev Bank	Model 1	0.352	0.763	0.423	0.039	1.100	0.438
		Model 2	-0.050-		0.003	-0.247-	0.010	0.924
		Model 3		0.578	0.334	0.167	2.002	0.230

Source: SPSS results.

Notes:

Model 1; $MVPS = \alpha_0 + \beta_1 BVPS_{it} + \beta_2 EPS_{it} + \epsilon_{it}$

Model 2; $MVPS = \alpha_0 + \beta_1 EPS_{it} + \epsilon_{it}$

Model 3; $MVPS = \alpha_0 + \beta_1 BVPS_{it} + \epsilon_{it}$

Table 2- Value relevance for earnings and book values for all banks (pooled data)

Model variables	Regression Coefficients	Sig
EPS	0.636	0.005
BVPS	-.287-	0.184
Measurements to assess the accuracy of the value relevance estimation		
R ²	0.216	
Adjusted R ²	0.176	
F-Value	5.367	
Sig	0.00	

Source: SPSS results

5-Summary, Discussion, and Future research

This paper has examined the value relevance of accounting information of the banking sector in Egypt which is supported by Ohlson price model. The findings based on the price model revealed that the explanatory power of both earnings and book values were different among banks. In addition it is important to indicate that Credit Agricool Bank and CIB showed a high explanatory power for model 1 which is concerned with measuring the proportion of variance in MVPS explained by both EPS and BVPS, model 2 which measures the proportion of variance in MVPS explained by EPS, and model 3 which measures the proportion of variance in MVPS explained by BVPS. On the other side, the analytical results for the sample of listed banks individually revealed an insignificant impact of both EPS and BVPS jointly on stock prices which means to accept the null hypothesis and reject the alternative hypothesis H1. Also for model 2 and 3 the results revealed an insignificant impact of either EPS or BVPS on stock prices except for CIB and Credit Agricool Bank which revealed a significant impact indicating that the value relevance of accounting information of these two banks affects the market value of their share prices which means to accept the null hypothesis and reject the alternative hypothesis H1.

In addition, the analytical results of the pooled data of all sample's banks together revealed a low explanatory power which means that a low proportion of variance in stock prices of banks in Egypt is expressed by EPS and BVPS jointly. Also it revealed that EPS has a significant impact on stock prices of listed banks in Egypt while BVPS as an insignificant impact on stock prices of listed banks. This provides the research with the evidence to reject the null hypothesis for pooled data and accept the alternative one concerning EPS i.e. H1a.

Further research could be conducted on a bigger sample of banks in Egypt due to the banking sectors' importance in the Egyptian economy and the transparency of its operations. In addition more variables could be entered into the valuation model i.e. cash flow, net assets value per share, return on equity, Debt to Equity, and firm size (Nimalathan and Vijitha 2014) in order to get more reliable results. Moreover, it is important to note that future research could be addressed on the relation between value relevance research and market efficiency research in the Egyptian economy which is concerned with the investors' usage of accounting information presented in the financial statements in equity valuation.

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