

**IMPACT OF NON ACCOUNTING INFORMATION**  
**ON THE VALUE RELEVANCE OF ACCOUNTING INFORMATION:**  
**THE CASE OF JORDAN**

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**ABSTRACT**

*The paper presents empirical evidence about the impact of firm's shareholders number as non accounting information on the value relevance of its earnings and book value of equity as accounting information for Jordanian industrial firms for the period from 1993 to 2002. Employing the return regression analysis and using shareholders number in two proxies namely local and foreign shareholders number, the findings of the study are fourfold. First, Individual earnings are value relevant while book value is irrelevant. Second, combining earnings with book value leads both of them to be irrelevant. Third, extending local shareholders number has significant impact on the value relevance of individual and combined earnings. Forth, extending foreign shareholders number has significant impact on the value relevance of individual book value and combined earnings. Since studies on the value relevance of these variables have neglected Jordan (and the Middle Eastern region), the study is the first especially in Jordan that tries to fill this gap by examining the impact of shareholders numbers on the value relevance of earnings and book value to indicate firm value.*

**Keywords:** Return regression, earnings and book value, value relevance, local and foreign shareholders number, and Jordan.

**1. Introduction**

Early research has mostly focused on the value relevance of earnings, while it has been extended to include book value of equity in the recent years. Based on the proposed conceptual framework of Ohlson model (1995), research has been extended to indicate the value relevance of the other information. The impact of the other information, as a non accounting information, on the value relevance of accounting information in different markets has been focused by the recent valuation models.

While many studies have examined the value relevance of the accounting information in developed countries such as Europe and Northern America, the study is conformable with previous studies (Alakra, Ali, and Marashdeh, 2009; Anandarajan and Hasan, 2010; Shamki and Abdul Rahman, 2011, 2012) whom pointed out that those studies have neglected developing countries such as Jordan (and Middle Eastern countries) despite the developments and growing importance of the economic in this country.<sup>1</sup> Despite the growth in Jordanian economic, its accounting environment is straitened and

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<sup>1</sup> Being a member in the board of international accounting standards committee on 1988, makes Jordan to leave the confined local accounting requirements to the fold of the international arena. Jordan became a member in the Mediterranean Partnership with the European Union on 1999, the World Trade Organization on 2000, the Organization of Free Trade with the United States on 2001, and the Arabian Gulf Cooperation Council on 2011.

limited and needs to be developed. Actually, based on the accounting standards, there is apparent lack of transparency in Jordan (Wallace and Shoult, 2004). Loosing regulation and lacking business practices uniformity might exacerbate the transparency lack. Although Jordan had made progress towards fiscal transparency, but still it was not sufficient (Anandarajan and Hassan, 2010). Accordingly, the current study examines the value relevance of accounting information in Jordan to extend valuation research in this country as a contribution to improve its accounting environment.

One of many important factors that are related to the growing importance of the Jordanian economic is the increase in the local and foreign ownership. As a recognition of the importance of equity ownership in indicating the firm value, the study examines the impact of shareholders number in two proxies namely local and foreign shareholders numbers (as a non accounting information) on the value relevance of earnings and book value of equity (as accounting information) for Jordanian industrial firms listed in Amman Stock Exchange (ASE) for the period from 1993 to 2002. The study tries to conclude whether firm's non accounting information can influence the value relevance of its accounting information.

Since the impact of firm's shareholders number proxies on the value relevance of its accounting information has not been well research before based on our best knowledge, the study tries to enrich the accounting literature in this area. In ASE industrial firms, our evidence is found to answer these questions: Do earnings and book value have value relevance? Has firm's shareholders number influence the value relevance of its earnings and book value? The study aims to find whether earnings and book value are value relevant in Jordanian industrial firms and whether shareholders number influences the value relevance of the accounting information. Extending the valuation research provides material continuity for the academic research and market participants to better evaluate the firm value and to improve the accounting practices. For market participants, it presents a deeper insight to the real role of the non accounting information in evaluating firm's performance, profitability and then its value. Methodologically, testing the impact of the non accounting information on the value relevance of the accounting information is of interest to academic research to improve the analysis used in valuation research.

In addition to the introduction, the second section presents the stock return, accounting information, shareholders number and the relationships among them. Developing study's hypotheses and methods will be presented in the third section. The paper reveals the findings and summary and conclusions in the final two sections.

## **2. Stock return, accounting information, and shareholders number**

Since the study examines the impact of shareholders number on the value relevance of earnings and book value, the next subsections will briefly discuss the nature and the relationships among these variables in literature.

### **2.1. Stock return**

Return on a stock is the increase in stock price plus the dividend percentage. Since stock returns volatility varies over the time (Ang, Hodrick, Yuhang, and Zhang, 2006), investment opportunities will be changed according to the change in the future market returns expectations. Market participants especially shareholders try to restrict the market volatility changes which can deteriorate investment opportunities, firm performance, and profitability evaluation (Campbell, 1996).

Since return model provides information on firm value by investigating the relationship between stock returns, accounting variables and changes in these variables, this model might restrict market downside risk. The study attempts to examine whether including the impact of firm's non accounting

information such as shareholders number in the return model can significantly affect the value relevance of its accounting information and restrict market volatility changes. If the study concluded significant results, market participants (especially shareholders in Jordan) can use them to better evaluate firm value.

## **2.2. Accounting information**

In general, accounting information can be defined as a set of information extracted from firm's financial statements to describe its economic status as its financial position, performance and cash flows. In a dynamic world, accounting information does not represent the actual position of a firm because it is based on historical cost (Weygandt, Kieso, and Kimmel, 2003).<sup>2</sup> Market participants need relevant accounting information that can assist them in better evaluate the firm performance and profitability then making their right decisions.

## **2.3. Stock return and accounting information**

Prior research points out that since earnings and book value have the ability to reflect stock values and the variance in these values, they can be considered as relevant information (Ohlson, 1995; Barth, 2000; Barth, Beaver, and Landsman, 2001; Anandarajan and Hasan, 2010). In prior valuation research, the value relevance of earnings and book value of equity as a relationship between them and stock return or price has been widely researched using return and price models. According to Ota (2003), both models are theoretically derived from Ohlson model (1995). While price model indicates the value relevance of accounting information, return model indicates the changes in the value relevance of accounting information.

In return model, firm's stock returns, earnings and changes in earnings of the same period are linked together. However, because of the accounting principles (reliability, objectivity, and conservatism), current earnings may not record the relevant events that are reflected in the current returns (Ota, 2010). Therefore, it is of beneficial to turn our attention to add book value of equity and the changes in this value to the return model to examine the value relevance of these accounting variables. Prior research has presented conflicting results. In recent years, numerical studies found that the value relevance of the accounting information has increased. It was non-declining for the period from 1965 to 2004 in Norway (Qystein, Kjell, and Frode, 2007). In Vietnam, the accounting information was found to be relevant (Dung, 2010). In Romania, adopting international financial reporting standards has increased the value relevance of earnings (Filip, 2010).

On the other hand, in the valuation research, the accounting information has been found to be irrelevant or declined in its value relevance. Francis and Schipper (1999) examine the changes in the value relevance of accounting numbers in the industrial and services sectors for the period from 1952 to 1994 and find that the value relevance of earnings is declined and that of book value is increased. Ely and Waymire (1999) examine the changes in the value relevance of the accounting information according to different accounting standard. Their evidence indicates that moving from adopting the accounting principles board within 1960-1973 to the financial accounting standard board within 1974-1993 declines the value relevance of the accounting information. Also, a decline in the value relevance has been found by Lev and Zarowin (1999) within the period 1977-1996. Amir and Lev (1996) find that earnings and book value are largely irrelevant in wireless communication industrial sector.

In Jordan, few studies (Hadi, 2005; Anandarajan and Hasan, 2010; Shamki and Abdul Rahman, 2011, 2012) have examined the value relevance of the accounting information. In their sample, accounting

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<sup>2</sup> Milad (2008) discussed in details the usefulness of accounting information related to historical cost.

information has been found to be value relevant. Since these studies found that Jordanian firm's accounting information has value relevance, it is expected for the present study that earnings and book value will be value relevant.

The conflicting results of the value relevance of accounting information are largely associated to the changes in business environment.<sup>3</sup> To restrict the effect of these changes on the value relevance of the accounting information, recent research trends to examine the impact of different non-accounting information on the value relevance of accounting information. In the same line, the current study tries to examine the impact of local and foreign shareholders number on the value relevance of earnings and book value.

#### **2.4. Shareholders number**

According to the interested party, equity ownership might have take different expressions such as shareholders, brokers, trading account, real states, investment' strategies and so on. Equity ownership could be defined as the value of the local and foreign shareholders' shares or the amount of business assets owned by the local and foreign owners. Legally, firm's shareholders are its owners. Large proportion of shareholders equity (maximized by increasing shareholders number) in a firm could strengthen its financial position (Glautier and Underdown, 1997).

#### **2.5. Stock return and shareholders number**

Since the changes in firm's market value are represented by stock return, it is beneficial to address the factors that influence this value (Clark and Wójcik, 2005). Many valuation methods referred to that firm's shares value is influenced by the expected future dividends. These dividends are used for shareholders consumption and discounted to show the riskiness of firm's activities (Bodie, Kane, and Marcus, 2002).

Whereas providing high return/dividends of a share attracts more shareholders, Amihud, Mendelson, and Uno (1999) examined whether increasing firms' shareholders number can increase its stock value. They concluded positive and significant results. They referred to that, by reducing the minimum trading value, firms could expand their shareholders number because it is hard for small shareholders to trade the minimum unit if it needs a large amount of money. Therefore, shareholders try to have portfolios with various stocks each requires a smaller outlay. Their study concluded that reducing the minimum trading value has increased both shareholders number and stock values.

Since attracting more shareholders can positively and significantly influence the firm's share evaluation (Amihud et al., 1999), firm's stock return and its shareholders number can be indirectly correlated to each other where high/low stock return attracts more/less shareholders which results high/low equity ratio. Logically, high/low equity ratio occurs with low/high debts which is associated with low/high risk, since the debt ratio and the risk of equity are positively correlated (Karma and sander, 2006). Consequently, low/high risk produces low/high stock return because stock return and risk of equity have been found to be positively correlated (Aaker and Jacobson, 1987). Going back to the beginning, low/high stock return attracts less/more shareholders.

#### **2.6. Accounting information and shareholders number**

There is no clear vision has been found for the effects of shareholders control on firm performance. Therefore, firm's ownership may exercise various ways such as various coalitions that drive the current income distribution. This is according to Clark and Wójcik (2005) whom found that it is possible to ensure both management and income distribution that maximize managements' shares of

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<sup>3</sup> Business environment is affected by many factors (economic, social, legal, technological and political) which are associated with foreign and local investments (see Bae and Jeong, 2007; Anandarajan and Hasan, 2010).

current income, leaving a smaller portion for shareholders. Systematic assessment suggests a positive and significant relationship between firm's ownership and its performance. Most of prior studies focus on examining net profit, rate of return on invested capital, and cash flows as proxies for firm's performance. Firm's Performance can be defined as the income produced by the firm and distributed as investments, salaries, wages, and dividends to its managers, shareholders, and stakeholders (Clark and Wójcik, 2005). However, firm with high income enjoys a high stock return rate and in turn attracts more shareholders whom usually look for firms that provide high returns on their shares.

## **2.7. Stock return, accounting information and shareholders number**

Firm's managers are motivated to expand its shareholders number because an increase in firm's market value and a reduction in its capital cost can be reached by increasing firm's shareholders number (Merton, 1987; Amihud et al., 1999). Firms with greater shareholders number have to disclose more relevant financial information which could positively and significantly influences the share value appreciation (Malone, D., Fries, C. and Jones, 1993; Amihud et al., 1999).

Since firm's shareholders number has a significant positive impact on the disclosure level (Malone et al., 1993; Al Arussi, Selamat, and Hanefah, 2009) and the percentage share of foreign ownership has significant impact on the value relevance of earnings in Korea and Jordan (Bae and Jeong, 2007 and Anandarajan and Hasan, 2010 respectively), this study tries to add new evidence relating the impact of shareholders number on the value relevance of earnings and book value that has not been well researched before. Because firm has to respond to the different needs of its shareholders by improving its disclosure level to provide equal relevant information access for all shareholders (Al Arussi et al., 2009), it is expected for this study that extending firm's shareholders number will significantly influence the value relevance of earnings and book value.

## **3. Hypotheses development and study's methods**

### **3.1. Hypotheses development**

The study examines the impact of shareholders number in two proxies on the value relevance of earnings and book value of equity relative to return model in Jordanian industrial firms listed in ASE for the period from 1993 to 2002. Whether earnings and book value of equity are value relevant, this will be the study's first examination step.

In this step, earnings and book value of equity individually and in a combination will be regressed on stock return to capture their ability to explain the variance in stock return and which variable can be more dependable for shareholders decisions in Jordan. To attempt this objective, our first hypothesis is:

H1a: Earnings are value relevant.

H1b: Book value of equity is value relevant.

H1c: Combined earnings and book value is value relevant.

Valuation models have linked earnings and book value of equity with the other (non-accounting) information to better evaluate equity value. In the same line with many valuation studies, this study tries to improve the valuation theory by replacing the other information by local and foreign shareholders number. While the impact of shareholders number on the disclosure level has been widely researched, this impact on the value relevance of earnings and book value has not been well researched before. Therefore, the impact of local and foreign shareholder number on the value

relevance of earnings and book value of equity is hypothesized in the study's second and third hypotheses as:

H2a: Local shareholders number influences the value relevance of earnings.

H2b: Local shareholders number influences the value relevance of book value.

H2c: Local shareholders number influences the value relevance of combined earnings and book value.

H3a: Foreign shareholders number influences the value relevance of earnings.

H3b: Foreign shareholders number influences the value relevance of book value.

H3c: Foreign shareholders number influences the value relevance of combined earnings and book value.

### **3.2. Study's models**

A suitable valuation model has to be adopted when examining the accounting information and firm value association. Most of recently used valuation model is built on Ohlson model (1995) (Barth, 2000; Barth et al., 2001; Ota, 2003, 2010) in which firm value is expressed as a function of earnings and book value. As a result, price model is formulated and it became the most regression model extremely used in valuation research. Ohlson model (1995) used stock price as its dependent variable and earnings, book value, and other information as its independent variables.

$$P_{it} = b_0 + b_1 EPS_{it} + b_2 BVPS_{it} + b_3 v_{it} + e_{it} \quad (1)$$

where for firm  $i$  at a year  $t$  end;  $P_{it}$  = stock price;  $EPS_{it}$  = earnings per share;  $BVPS_{it}$  = book value of equity per share;  $v_{it}$  = other information;  $e_{it}$  = error term.

As a clear motivation provided for price and return regressions by Ohlson (1995), in such a procedure that includes taking the differences, rearranging terms and then deflating by lagged price ( $P_{t-1}$ ), a return model can be driven from price model (Equation) 1. This model uses both earnings ( $EPS_{it}$ ) and changes in earnings ( $\Delta EPS_{it}$ ) as explanatory variables to returns. This is according to Easton (1999) who has derived returns model as:

$$R_{it} = \phi_0 + \phi_1 EPS_{it} + \phi_2 \Delta EPS_{it} + e_{it} \quad (2)$$

where,  $R_{it} = (P_{it} - P_{it-1} + d_{it}) / P_{it-1}$ ;  $EPS_{it}$  = earnings per share deflated by lagged price  $P_{it-1}$ ;  $\Delta EPS_{it}$  = change in earnings per share ( $EPS_{it} - EPS_{it-1}$ ) deflated by lagged price  $P_{it-1}$ ;  $d_{it}$  = dividends per share.

To test study's H1a, Easton model (1999) is adopted. Coefficient  $\phi_1$  represents the value relevance of earnings. So, H1a can be stated in terms of regression coefficients as: H1a:  $\phi_1 \neq 0$ .

Conceptually, other accounting variables have been employed in return model to replace or to be added to earnings in many studies. Francis, Schipper, and Vincent (2005) used dividends and change in dividends individually and in a combination with earnings and change in earnings. For the purposes of this study, book value and change in book value will be used. To test study's H1b, the model is;

$$R_{it} = \mu_0 + \mu_1 BVPS_{it} + \mu_2 \Delta BVPS_{it} + e_{it} \quad (3)$$

where  $BVPS_{it}$  = book value of equity per share deflated by lagged price  $P_{it-1}$ ;  $\Delta BVPS_{it}$  = change in book value of equity per share ( $BVPS_{it} - BVPS_{it-1}$ ) deflated by lagged price  $P_{it-1}$ . Other variables are defined before.

Coefficient  $\mu_1$  represents the value relevance of book value. So, H1b can be stated in terms of the regression coefficients as: H1b:  $\mu_1 \neq 0$ .

Stock return has been regressed on earnings, changes in earnings, book value, and changes in book value to test the value relevance of the combined earnings and book value (H1c). The model is;

$$R_{it} = \delta_0 + \delta_1 \text{EPS}_{it} + \delta_2 \Delta \text{EPS}_{it} + \delta_3 \text{BVPS}_{it} + \delta_4 \Delta \text{BVPS}_{it} + e_{it} \quad (4)$$

All variables are defined before. Coefficients  $\delta_1$  and  $\delta_3$  represent the value relevance of earnings and book value respectively. So, H1c can be stated in terms of the regression coefficients as: H1c:  $\delta_1 \neq 0$ ,  $\delta_3 \neq 0$ .

Ohlson model (1995) has linked earnings and book value with the other information ( $v$ ) to evaluate equity value. It includes other information term ( $v$ ) as an important variable that refers to firm's non-accounting information without referring to what this other information is. Ohlson (1995) assumes that this term has to be taken in consideration as it summarizes the relevant events for firm evaluation that influences its accounting information (Lundholm, 1995). Since the other information is unclear variable (Ohlson, 2001), many researchers have neglected its use in their studies (Beaver, 1999), while we as well as others try to improve the valuation model by replacing the other information to examine the value relevance of the accounting information and the other information. Ohlson model (Equation 1) is used to examine whether the other (non accounting) information is value relevant or to examine its effect on the market value of equity but not on the accounting variables or on their value relevance. This study tries to examine shareholders number to indicate whether it is value relevant by its own right and to add empirical evidence to the literature in this area.

Related to the relationship between stock return and shareholders number and based on the aforementioned discussion, stock return can be expressed as a function of shareholders number:

Stock return =  $f$  {shareholders number}

Hence, the regression model is:

$$R_{it} = B_0 + B_1 \text{LOC}_{it} + B_2 \text{FOR}_{it} + e_{it} \quad (5)$$

Where for a firm  $i$  at a year  $t$  end;

$\text{LOC}_{it}$ : Local shareholders number of a firm used as a dummy variable with value 1 for a firm with local shareholders number greater than sample's median local shareholders number, 0 otherwise.

$\text{FOR}_{it}$ : Foreign shareholders number of a firm used as a dummy variable with value 1 for a firm with foreign shareholders number greater than sample's median foreign shareholders number, 0 otherwise.

Other variables are defined before.

Amir and Lev study (1996) is one of the earlier studies that have combined the accounting and non-accounting variables to indicate their value relevance in the wireless communications industry, while the impact of the latter on the value relevance of the former has not been involved. Since in the primary steps, the study examines the value relevance of earnings and book value individually and in a combination (Equations 2, 3, and 4) and next the value relevance of firm's local and foreign

shareholders numbers (Equation 5), the accounting and non accounting variables as study's independent variables can be linked as;

$$R_{it} = \alpha_0 + \alpha_1 EPS_{it} + \alpha_2 \Delta EPS_{it} + \alpha_3 BVPS_{it} + \alpha_4 \Delta BVPS_{it} + \alpha_5 LOC_{it} + \alpha_6 FOR_{it} + e_{it} \quad (6)$$

Recently, many studies have examined the impact of different non accounting information on the value relevance of the accounting information (Davis-Friday, Eng, and Liu, 2006; Anandarajan and Hasan, 2010). According to our best knowledge, no study has examined the impact of shareholders number on the value relevance of accounting information. Similarly to the methodology used by Francis et al. (2005), Davis-Friday et al. (2006), and Anandarajan and Hasan (2010), we interact each accounting variable (earnings, changes in earnings, book value, and changes in book value) with local and foreign shareholders number. The interaction variables (accounting variable \* shareholders number proxy) will be included in the analysis to capture the impact of these proxies on the value relevance of earnings and book value. To test the impact of local and foreign shareholders number on the value relevance of the individual and combined earnings and book value (H2 and H3), our models are;

$$R_{it} = \gamma_0 + \gamma_1 LOC_{it} + \gamma_2 EPS_{it} + \gamma_3 \Delta EPS_{it} + \gamma_4 EPS * LOC_{it} + \gamma_5 \Delta EPS * LOC_{it} + e_{it} \quad (7a)$$

$$R_{it} = \omega_0 + \omega_1 LOC_{it} + \omega_2 BVPS_{it} + \omega_3 \Delta BVPS_{it} + \omega_4 BVPS * LOC_{it} + \omega_5 \Delta BVPS * LOC_{it} + e_{it} \quad (7b)$$

$$R_{it} = \psi_0 + \psi_1 LOC_{it} + \psi_2 EPS_{it} + \psi_3 \Delta EPS_{it} + \psi_4 BVPS_{it} + \psi_5 \Delta BVPS_{it} + \psi_6 EPS * LOC_{it} + \psi_7 \Delta EPS * LOC_{it} + \psi_8 BVPS * LOC_{it} + \psi_9 \Delta BVPS * LOC_{it} + e_{it} \quad (7c)$$

$$R_{it} = \Omega_0 + \Omega_1 FOR_{it} + \Omega_2 EPS_{it} + \Omega_3 \Delta EPS_{it} + \Omega_4 EPS * FOR_{it} + \Omega_5 \Delta EPS * FOR_{it} + e_{it} \quad (8a)$$

$$R_{it} = \lambda_0 + \lambda_1 FOR_{it} + \lambda_2 BVPS_{it} + \lambda_3 \Delta BVPS_{it} + \lambda_4 BVPS * FOR_{it} + \lambda_5 \Delta BVPS * FOR_{it} + e_{it} \quad (8b)$$

$$R_{it} = \phi_0 + \phi_1 FOR_{it} + \phi_2 EPS_{it} + \phi_3 \Delta EPS_{it} + \phi_4 BVPS_{it} + \phi_5 \Delta BVPS_{it} + \phi_6 EPS * FOR_{it} + \phi_7 \Delta EPS * FOR_{it} + \phi_8 BVPS * FOR_{it} + \phi_9 \Delta BVPS * FOR_{it} + e_{it} \quad (8c)$$

All variables are defined before. In all above equations, coefficients numbered 1, represent the value relevance of local and foreign shareholders number. Coefficients  $\gamma_2$ ,  $\psi_2$ ,  $\Omega_2$ , and  $\phi_2$  represent the value relevance of earnings in the absence of the impact of these factors, while coefficients  $\gamma_2 + \gamma_4$ ,  $\psi_2 + \psi_6$ ,  $\Omega_2 + \Omega_4$ , and  $\phi_2 + \phi_6$  represent the response of stock return to earnings with the influence of these factors. Coefficients  $\omega_2$ ,  $\psi_4$ ,  $\lambda_2$ , and  $\phi_4$  represent the value relevance of book value of equity in the absence of the impact of these factors, while coefficients  $\omega_2 + \omega_4$ ,  $\psi_4 + \psi_8$ ,  $\lambda_2 + \lambda_4$ , and  $\phi_4 + \phi_8$  represent the response of stock return to book value with the influence of these factors. So, H2 and H3 can be stated in terms of the regression coefficients as follows:

$$H2a: \gamma_2 + \gamma_4 \neq 0; \quad H2b: \omega_2 + \omega_4 \neq 0; \quad H2c: \psi_2 + \psi_6 \neq 0, \psi_4 + \psi_8 \neq 0$$

$$H3a: \Omega_2 + \Omega_4 \neq 0; \quad H3b: \lambda_2 + \lambda_4 \neq 0; \quad H3c: \phi_2 + \phi_6 \neq 0, \phi_4 + \phi_8 \neq 0$$

Following previous studies (Burgstahler and Dichev, 1997; Davis-Friday et al., 2006), the study depends on the pooled sample in indicating its final results. Following Davis-Friday et al. (2006), the current study depends on t-tests and p-values to accept or reject its hypotheses. According to Pallant (2007), models  $R^2$  values will be used to evaluate the fitness of study's models.

### 3.3. Sample and data selection



Study's sample is the Jordanian industrial firms listed in ASE for the period from 1993 to 2002. Data is collected from the database that is published on ASE by Amman stock exchange information center. All Jordanian industrial firms with available data for the selected study's variables are included. Total of 180 firms-years and (2700) observations (Obs.)-years (18 firms \* 15 variables \* 10 years) will enter the analysis using SPSS.

#### 4. Empirical results

Regressions analysis assumptions including normality, linearity, homoscedasticity, correlation and multicollinearity have been checked for the study's variables and raw data. Return, book value, and changes in book value show a non normal distribution with kurtosis values well up  $\pm 2$ . The descriptive statistics reported in Table 1 shows sample's valid and missing data, mean, standard deviation, skewness and kurtosis, minimum and maximum values for study's transformed accounting variables. We missed data from the three mentioned variables and their interaction terms on shareholders number proxies leaving a totally of (2484) remained observation. Standard deviation values are well below 3 which suggest the absence of the outliers (Pallant, 2007).

We examine Hypothesis (1) by regressing the individual and combined earnings and book value on stock return (Models 2 to 4) to determine the value relevance of these variables. From the pooled regression results shown in Table 2, as it was expected the individual earnings are value relevant, while it is unexpected that book value is irrelevant. Changes in earnings and book value are irrelevant. These results support H1a but not H1b.

**Table 1**  
**Descriptive statistics**

	R	PES	$\Delta$ EPS	BVPS	$\Delta$ BVPS
N Valid	78	180	180	180	124
Missing	103	1	1	1	57
Mean	-.8567	.0841	-.0015	-.1733	-1.5074
Std. Deviation	.52443	.08845	.06591	.27407	.52727
Skewness	-.532	1.811	-.579	.432	.280
Std. Error of Skewness	.272	.181	.181	.181	.217
Kurtosis	.268	10.046	9.858	1.501	1.748
Std. Error of Kurtosis	.538	.360	.360	.360	.431
Minimum	-2.39	-.19	-.34	-.89	-2.98
Maximum	.07	.59	.30	.79	.56

All variables are defined before.

The results might be explained by that investors rely more on earnings which contain information reflected in the equity market value before releasing earnings which are perfectly predictable (Francis and Schipper, 1999). For the combined earnings and book value (Model 4), earnings and book value are irrelevant. Changes in earnings are significant while those in book value are irrelevant in. These unexpected results do not support H1c.

Related to model 2, our results are consistent with previous studies that found earnings to be value relevant (Qystein et al., 2007; Dung, 2010; Filip, 2010). Inconsistency has been found between our result and that of other studies. The results are inconsistent with Ramesh and Thiagarajan (1995) whom concluded that the value relevance of earnings is declined over time. Our results are inconsistent with the studies of Harris, Lang, and Möller (1994) and Vardavaki and Mylonakis (2007) whom concluded that book value is more value relevant than earnings or with that of Gee-Jang (2009) who found that book value is value relevant while earnings are not. Other studies concluded a decline in the value relevance of earnings and an increase in the value relevance of book value (Berger, Ofek, and Swary, 1996; Burgstahler and Dichev, 1997; Collins, Pincus, and Xie, 1997; Francis and Schipper, 1999; Ely and Waymire, 1999). Related to models 3 and 4, our results are consistent with Amir and Lev (1996) whom found that earnings and book value are largely irrelevant.

**Table 2**  
**Pooled regression sample results: Hypothesis (1)**

Models and Variables	acc. Coef.	t-stat	R <sup>2</sup>	F-stat.	Obs. No.
Return Model (2)					
φ1	.316	2.769***			
φ2	-.129	-1.134	.070	3.910**	436
Return Model (3)					
μ1	-.202	1.500			
μ2	.160	1.185	.052	0.570*	436
Return Model (4)					
δ1	.124	.533			
δ2	-.367	-2.325**			
δ3	-.239	1.337			
δ4	.238	1.389	.109	2.742**	794

Notes:

\*, \*\*, and \*\*\* Significant at 10%, 5%, and 1% levels.

Model (2):  $R_{it} = \phi_0 + \phi_1 EPS_{it} + \phi_2 \Delta EPS_{it} + e_{it}$

Model (3):  $R_{it} = \mu_0 + \mu_1 BVPS_{it} + \mu_2 \Delta BVPS_{it} + e_{it}$

Model (4):  $R_{it} = \delta_0 + \delta_1 EPS_{it} + \delta_2 \Delta EPS_{it} + \delta_3 BVPS_{it} + \delta_4 \Delta BVPS_{it} + e_{it}$

Since prior research found a decline in the value relevance of accounting information using return model compared with that obtained from price model (Ely and Waymire, 1999; Francis and Schipper, 1999; Ota, 2003), adopting return model in this study produces irrelevant individual book value and combined earnings and book value. This might be explained by that the accounting information may lose a significant portion of its relevance due to the changes in business environment or it could be resulted by the volatility changes in market returns within the sample period (Francis and Schipper, 1999) or the insignificant results might be just for the sample selected within the period (1993-2002) in ASE. The model's R<sup>2</sup> values and the significant F-statistics in Table 2 indicate that the three models are fitted the data well. These values for Model 4 are much greater than those of Models 2 and 3.

The impact of shareholders number in two proxies on the value relevance of the individual and combined earnings and book value is represented in Tables 3 and 4. Starting with the impact of local shareholders number (H2), Table 3 shows that local shareholders number is value relevant in its own right relative to Modes 7a and 7c (γ1 and Ψ1 are significant at 0.05 level) Individual earnings and book value (Models 7a and 7b) are value relevant in the absence of the impact of this factor (γ2 is significant at 0.01 and ω2 at 0.1 levels). Both changes in earnings and those in book value are

irrelevant in these models. Local shareholders number has significant impact on the value relevance of earnings ( $\gamma_4$  is significant at 0.05 level) but not on that of book value ( $\omega_2$  is insignificant) Combining earnings with book value (model 7c) leads earnings to keep their value relevance, while book value became irrelevant. While this combination duplicates the impact of local shareholders number on the value relevance of earnings, it keeps showing no impact on the value relevance of book value. These results support H2a and H2c (earnings but not book value) but do not support H2b.

**Table 3**  
**Pooled sample results for testing hypothesis (2)**

Models and variables	Coef.	t-stat	R <sup>2</sup>	F-stat.	Obs. No.
<b>Return Model (7a)</b>					
$\gamma_1$	.460	2.265**			
$\gamma_2$	.845	3.521***			
$\gamma_3$	-.189	-1.350			
$\gamma_4$	-.753	-.753**			
$\gamma_5$	.019	.134	.111	2.929**	976
<b>Return Model (7b)</b>					
$\omega_1$	.198	.465			
$\omega_2$	.400	1.846*			
$\omega_3$	.085	.421			
$\omega_4$	-.274	-1.214			
$\omega_5$	.235	.527	.030	1.347	976
<b>Return Model (7c)</b>					
$\psi_1$	2.149	2.455**			
$\psi_2$	.970	2.465**			
$\psi_3$	-.180	-.571			
$\psi_4$	.166	.736			
$\psi_5$	-.26	-.960			
$\psi_6$	-1.416	-2.427**			
$\psi_7$	-.131	-.389			
$\psi_8$	.171	.611			
$\psi_9$	1.205	2.072**	.156	2.172**	1694

Notes: \*\*\* Significant at 1% levels.

$$\text{Model (7a)} \quad R_{it} = \gamma_0 + \gamma_1 \text{LOC}_{it} + \gamma_2 \text{EPS}_{it} + \gamma_3 \Delta \text{EPS}_{it} + \gamma_4 \text{EPS} * \text{LOC}_{it} + \gamma_5 \Delta \text{EPS} * \text{LOC}_{it} + e_{it}$$

$$\text{Model (7b)} \quad R_{it} = \omega_0 + \omega_1 \text{LOC}_{it} + \omega_2 \text{BVPS}_{it} + \omega_3 \Delta \text{BVPS}_{it} + \omega_4 \text{BVPS} * \text{LOC}_{it} + \omega_5 \Delta \text{BVPS} * \text{LOC}_{it} + e_{it}$$

$$\text{Model (7c)} \quad R_{it} = \psi_0 + \psi_1 \text{LOC}_{it} + \psi_2 \text{EPS}_{it} + \psi_3 \Delta \text{EPS}_{it} + \psi_4 \text{BVPS}_{it} + \psi_5 \Delta \text{BVPS}_{it} + \psi_6 \text{EPS} * \text{LOC}_{it} + \psi_7 \Delta \text{EPS} * \text{LOC}_{it} + \psi_8 \text{BVPS} * \text{LOC}_{it} + \psi_9 \Delta \text{BVPS} * \text{LOC}_{it} + e_{it}$$

Table 4 (Models 8a and 8c) shows that foreign shareholders number is value relevant in its own right ( $\Omega_1$  is significant at 0.1 and  $\phi_1$  at 0.05 levels). Individually (Models 8a and 8b), in the absence of the impact of this factor, both earnings and book value are value relevant ( $\Omega_1$  is significant at 0.01 and  $\lambda_2$  at 0.05 levels respectively). Changes in earnings are value relevant, while those in book value are not.

This table shows that foreign shareholders number has significant impact on the value relevance of book value but not earnings. Combining earnings with book value (Model 8c) significantly increases the coefficients on foreign shareholder number and earnings, while book value became insignificant. These results support H3b and H3c for earnings but do not support H3a.

**Table 4**  
**Pooled sample results for testing Hypothesis (3)**

Models and variables	Coef.	t-stat	R <sup>2</sup>	F-stat.	Obs. No.
Return Model (8a)					
Ω1	.384	1.869*			
Ω2	.617	2.598***			
Ω3	-.245	-1.682*			
Ω4	-.462	-1.512			
Ω5	.132	.899	.082	2.374**	976
Return Model (8b)					
λ1	.561	1.389			
λ2	.586	2.286**			
λ3	.053	-.274			
λ4	-.493	-1.937*			
λ5	.614	1.410	.103	2.313*	976
Return Model (8c)					
φ1	1.989	2.383**			
φ2	.771	1.939*			
φ3	-.274	-1.013			
φ4	.317	1.102			
φ5	-.251	-1.040			
φ6	-1.022	-1.802*			
φ7	-.068	-.231			
φ8	-.093	-.300			
φ9	1.307	2.383**	.180	2.391**	1694

Notes:

\*\*\* Significant at 1% levels.

$$\text{Model (8a)} \quad R_{it} = \Omega_0 + \Omega_1 \text{FOR}_{it} + \Omega_2 \text{EPS}_{it} + \Omega_3 \Delta \text{EPS}_{it} + \Omega_4 \text{EPS} * \text{FOR}_{it} + \Omega_5 \Delta \text{EPS} * \text{FOR}_{it} + e_{it}$$

$$\text{Model (8b)} \quad R_{it} = \lambda_0 + \lambda_1 \text{FOR}_{it} + \lambda_2 \text{BVPS}_{it} + \lambda_3 \Delta \text{BVPS}_{it} + \lambda_4 \text{BVPS} * \text{FOR}_{it} + \lambda_5 \Delta \text{BVPS} * \text{FOR}_{it} + e_{it}$$

$$\text{Model (8c)} \quad R_{it} = \phi_0 + \phi_1 \text{FOR}_{it} + \phi_2 \text{EPS}_{it} + \phi_3 \Delta \text{EPS}_{it} + \phi_4 \text{BVPS}_{it} + \phi_5 \Delta \text{BVPS}_{it} + \phi_6 \text{EPS} * \text{FOR}_{it} + \phi_7 \Delta \text{EPS} * \text{FOR}_{it} + \phi_8 \text{BVPS} * \text{FOR}_{it} + \phi_9 \Delta \text{BVPS} * \text{FOR}_{it} + e_{it}$$

Since, there is no study that examined the impact of local and foreign shareholders numbers on the value relevance of earnings and book value, the results of this study need to be proved by future studies in ASE or other stock exchanges. Hypotheses 2 and 3 results might be explained by the limited shareholders number in Jordanian firms compared with that in developed countries or it might be affected by other country's specific factors such as financial reporting system, accounting

measurement and institutional environment might affect the value relevance (Bao, 2004). <sup>4</sup>Also, the study's results might be related to the study's sample, period, industry or the stock market in this country.

### **5. Summary and conclusions**

The paper examines the value relevance of earnings and book value of equity individually and in a combination using return model for 18 Jordanian industrial firms within the period 1993-2002. Individual earnings are value relevant and book value is irrelevant. Combining earnings with book value leads both of them to be irrelevant. So, H1a is accepted, while H1b and H1c are rejected.

Also this study examines the impact of local and foreign shareholders number on the value relevance of the individual and combined earnings and book value of equity. Local shareholders number has significant impact on the value relevance of earnings individually and in a combination, therefore, H2a and H2c are accepted for earnings, while H2b is rejected. Foreign shareholders number has significant impact on the value relevance of book value and combined earnings, therefore H3a is rejected, while H3b and H3c are accepted for book value.

This paper contributes to the valuation literature in extending the valuation theory by examining the value relevance of the accounting information relative to the return model in an emerging market from Middle Eastern region. Our paper replaced the other information proposed by Ohlson model (1995) by local and foreign shareholders number to add evidence about the impact of these proxies on the value relevance of accounting information.

Conducting this study faced some limitations. The study's small size and observations are limited by the small number of industrial firms in Jordan compared with that in other countries. This paper has addressed this problem by pooling the data. Also, since no study on the impact of local and foreign shareholders numbers on the value relevance of earnings and book value has been found, a comparison between our findings with other studies is unavailable. However, these limitations do not underestimate the study's value and its usefulness and importance is not questionable

Future research is called to examine this impact with larger sample size and period in ASE or other stock markets to prove or disprove our results. Also, researchers are called to employ different proxies related to ownership equity such as equity/debt ratio with or without shareholders number proxies to indicate which equity ownership proxy can be dependable in estimating the firm value.

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<sup>4</sup> These factors are not involved in this study.

## **References**

- Aaker, A., and R. Jacobson. (1987). The role of risk in explaining differences in profitability. *Academy of Management Journal*, 30, 277-296.
- Al Arussi, A., M. Selamat, and M. Hanefah. (2009). Determinants of financial and environmental disclosures through the internet by Malaysian companies. *Asian Review of Accounting*, 17(1), 59-76.
- Alakra, M., M. Ali, and O. Marashdeh. (2009). Development of accounting regulation in Jordan. *The International Journal of Accounting*, 44 (2), 163-186.
- Amihud, Y., H. Mendelson, and J. Uno. (1999). Number of shareholders and stock prices: Evidence from Japan. *The Journal of Finance*, 54 (3), 1169-1184.
- Amir, E. and B. Lev. (1996). Value-relevance of nonfinancial information: The wireless communications industry. *Journal of Accounting and Economics*, 22(1-3), 3-30.
- Anandarajan, A. and I. Hasan. (2010). Value relevance of earnings: Evidence from Middle Eastern and North African countries. *Advances in Accounting, Incorporating Advances in International Accounting*, 26 (2), 270-279.
- Ang, A., R. Hodrick, X. Yuhang, and X. Zhang. (2006). The cross-section of volatility and expected returns. *The Journal of Finance*, 61(1) 259-299.
- Bae, K. and S. Jeong. (2007). The value relevance of earnings, book value, ownership structure, and business group affiliation: Evidence from Korean business groups. *Journal of Business Finance and Accounting*, 34(5-6), 740-766.
- Bao, Y. (2004). The value relevance of accounting information: Evidence from Asian markets. A dissertation (Ph.D). Kent State University-Graduate School of Management.
- Barth, M. (2000). Valuation-based accounting research: Implications for financial reporting and opportunities for future research. *Accounting and Finance*, 40, 7-31.
- Barth, M., W. Beaver, and W. Landsman. (2001). The relevance of the value relevance literature for financial accounting standard setting: Another view. *Journal of Accounting and Economics*, 31, 77-104.
- Beaver, W. (1999). Comments on an empirical assessment of the residual income valuation model. *Journal of Accounting and Economics*, 26, 35-42.
- Berger, P., E. Ofek, and I. Swary. (1996). Investor valuation of the abandonment option. *Journal of Financial Economics*, 42, 257-287.
- Bodie, Z., A. Kane, and A. Marcus. (2002). Investments. New York: McGraw-Hill.
- Burgstahler, D. and I. Dichev. (1997). Earnings, adaptation, and equity value. *The Accounting Review*, 72, 187-215.
- Campbell, J. (1996). Understanding risk and return. *Journal of Political Economy*, 104, 298- 345.

- Clark, G. and D. Wójcik. (2005). Financial valuation of the German model: The negative relationship between ownership concentration and stock market returns, 1997-2001. *Economic Geography*, 81(1), 11-29.
- Collins, D., M. Pincus, and H. Xie. (1997). Equity valuation and negative earnings: The role of book value of equity. Working paper, University of Iowa, Iowa City, IA.
- Davis-Friday, P., L. Eng, and C. Liu. (2006). The effect of the Asian crisis, corporate governance and accounting system on the valuation of book value and earnings. *The International Journal of Accounting*, 41, 22-40.
- Dung, N. (2010). Value-relevance of financial statement information: A flexible application of modern theories to the Vietnamese stock market. Paper presented at the Development and Policies Research Center, Vietnam.
- Easton, P. (1999). Security returns and the value relevance of accounting data. *Accounting Horizons*, 13, 399-412.
- Ely, K. and G. Waymire. (1999). Accounting standard-setting organizations and earnings relevance: longitudinal evidence from NYSE common stocks, 1927–1993. *Journal of Accounting Research*, 37, 293-318.
- Filip, A. (2010). IFRS and the value relevance of earnings: evidence from the emerging market of Romania. *International Journal of Accounting, Auditing and Performance Evaluation*, 6(6), 191-223.
- Francis, J. and K. Schipper. (1999). Have financial statements lost their relevance? *Journal of Accounting Research*, 37(2), 319-352.
- Francis, J., K. Schipper, and L. Vincent. (2005). Earnings and dividend informativeness when cash flow rights are separated from voting rights. *Journal of Accounting and Economics*, 39, 329–360.
- Gee-Jung, K. (2009). The value relevance of book values, earnings and cash flows: Evidence from Korea. *International journal of business and management*, 4(10), 28-42.
- Glautier, M. and B. Underdown. (1997). Accounting theory and practice. 6<sup>th</sup> ed. William Clowes.
- Hadi, M. (2005). Information content of cash flows data: Evidence for Jordan. Working paper. Kuwait University.
- Harris, T., M. Lang, and H. Möller. (1994). The value relevance of German accounting measures: An empirical analysis. *Journal of Accounting Research*, 32, 2, 187-209.
- Karma, O. and Sander, P. (2006). The impact of financial leverage on risk of equity measured by loss-oriented risk measures: An option pricing approach. *European Journal of Operational Research*, 175, 1340-1356.
- Lev, B. and P. Zarowin. (1999). The boundaries of financial reporting and how to extend them. *Journal of Accounting Research*, 37, 353-385.

- Lundholm, R. (1995). Tutorial on the Ohlson and Feltham/Ohlson Models: Answers to some frequently asked questions. *Contemporary Accounting Research*, 11, 749-761.
- Malone, D., C. Fries, and T. Jones. (1993). An empirical investigation of the extent of corporate financial disclosure in the oil and gas industry. *Journal of Accounting Auditing and Finance*, 8, 249-273.
- Merton, R. (1987). A simple model of capital market equilibrium with incomplete information. *Journal of Finance*, 42, 483-511.
- Milad, A. (2008). Analyzing the fair value of assets and the stakeholder's investment decisions, DBA thesis, North central University.
- Ohlson, J. (1995). Earnings, book values and dividends in equity valuation. *Contemporary Accounting Research*, 11 (2), 661-687.
- Ohlson, J. (2001). Earnings, book values, and dividends in equity valuation: An empirical perspective. *Contemporary Accounting Research*, 18, 107-120.
- Ota, K. (2003). The impact of price and return models on value relevance of studies: A review of theory and evidence. *Accounting Research Journal*, 16(1), 6-20.
- Ota, K. (2010). The value relevance of management forecasts and their impact on analysts' forecasts: Empirical evidence from Japan. *Abacus*, 46(1), 28-59.
- Pallant, J. (2007). SPSS survival manual. 3<sup>rd</sup> ed. McGraw Hill Education.
- Qystein, G., K. Kjell, and S. Frode. (2007). The value-relevance of financial reporting in Norway 1965-2004. Norwegian School of Economics and Business Administration, Norway.
- Ramesh, K. and R. Thiagarajan. (1995). Inter-temporal decline in earnings response coefficients. Working paper. Northwestern University, Evanston, IL.
- Shamki, D., and A. Abdul Rahman. (2011). Net income, book value and cash flows: The value relevance in Jordanian economic sectors. *International Journal of Business and Social Research*, 1(1), 123-135.
- Shamki, D., and A. Abdul Rahman. (2012). Value relevance of earnings and book value: Evidence from Jordan. *International Journal of Business and management*, 7(3), 133-141.
- Vardavaki, A. and J. Mylonakis. (2007). Empirical evidence on retail firms' equity valuation models. *International Research Journal of Finance and Economics*, 7, 104-119.
- Wallace, J. and A. Shoult. (2004). Doing business with Jordan. U.K: Kogan Page Publishers.
- Weygandt J., D. Kieso, and P. Kimmel. (2003). Financial accounting (UOPHX special edition series). New York: John Wiley and Sons.