VALUE RELEVANCE OF ACCOUNTING INFORMATION: INSIGHTS FROM IRAQ

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1. INTRODUCTION

Starting from [1], earnings were the main variable of accounting information in early studies of value relevance [2]. The recent research has turned his concern to add information of book value of equity [3]. Many studies have been achieved to link stock market values or stock market returns with the accounting variables to conduct similar or different findings.

Investigating the relationship as mentioned above aims to obtain results that may be classified as a relevant or an irrelevant one. The value relevance term has been employed in previous studies to indicate the ability of accounting information to reflect the changes in stock market values [4], whereas literature focus on the developed stock markets in Northern America and Europe to examine the value relevance of the accounting information, developing stock markets especially in the Middle East countries have been ignored ([5]; [6]).

since the research direction of value relevance of accounting information focuses on developed stock markets more than developing ones, misunderstanding in the comprehensive trend for this value relevance research will be obtained. Also, this is a reason that the researchers regarding developed countries are the primary producers of value relevance research [7] and create a gap in the knowledge. Therefore, this study has academic significance to fill this gap by adding developing stock markets to the literature and supplying it with a knowledge concerning the value relevance of accounting information reflected in stock market values and stock market returns.

Because of the increased attention on the important function of the accounting information in the international stock market in the recent years [2], research is currently extended to examine the value relevance of the accounting information in stock markets in developing countries ([8]; [2]; [6] among others).

The present study is motivated by the occurred developments in the previous studies of valuation theories and practices. It is anticipated that this study will extend the literature by separately examining the value relevance of earnings, book value of equity and in the aggregate of them for the services companies listed in Iraq Stock Exchange (ISX) as an emerging stock market. The current study will present extra insights regarding the value relevance of accounting information focusing on earnings and book value of equity in Iraq and using stock market values and returns models. This study attempts to address the question; Do the earnings and

Abstract This research investigates the value relevance of accounting information, namely earnings and book value of equity (separately and aggregately), related to stock market values and stock market returns models, for Iraqi services companies for the four years 2015 - 2018. The paper finds that, related to stock market values model, the value relevance of earnings and book value has increased separately; the value relevance for earnings increased while it is irrelevant for book value when they are associated. In the other hand and related to stock market returns model, the value relevance of earnings either separately or aggregately has increased while that of book value has decreased. Generally, it is shown that earnings figures can importantly demonstrate variances in stock market values and stock market returns compared with book value figures. Moreover, the findings show that earnings and book value separately are more value relevant in stock market values model. Differently, these variables aggregately are more relevant in stock market returns model. The study finds earnings can widely help in demonstrating the changes stock market values in Iraqi services companies. The value relevance of accounting information using two models of stock market values and stock market returns has not examined before in one study in Iraq.

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book value of equity separately and aggregate using stock market values and returns models have different value relevance for Iraqi services companies? To address the study’s question, it is necessary to indicate whether switching from one valuation model to another produces similar or different findings of the accounting information value relevance. Continue with the section of introduction, next sections of this paper; reviewing the related literature; displaying the financial reporting in Iraq, developing the hypotheses and methodology, presenting the empirical findings and ending with the summary and conclusions.

2. RELATED LITERATURE

2.1. Stock market values and returns models

Based on the theory of valuation, stock market values and stock market return models are the two essentially valuation models that employed in the value relevance literature. In spite of that both models depend on the similar principles, their findings are occasionally incompatible [9].

The characteristics of stock market values and stock market returns models are displayed by [10] in a part of the valuation literature to appear the signification of these models in the valuation theories. Theoretically, in case of the well-developed valuation theories absence, stock market returns model is in the uppermost step compared with stock market values model [11]. While [12] described that each one of those models completes the other. And occasionally, stock market values model dominates stock market returns model [13]. Economically, both models are similar and stock market value model is more problematic [14]. This issue does not block stock market values model to continue ([15]; [16]; among others).

2.2. Value relevance of earnings and book value

As mentioned before, mixed findings on the value relevance of accounting information in different economic sectors have been found in the literature. Employing stock market values and returns models and using US markets data, few studies found that both earnings and book value are largely irrelevant in non-services sector [17]. [4] found that the value relevance of earnings is declined while it is increased for that of book value in the services and industrial sectors. In other side, results of a weak association have been stated between earnings and book value as accounting information and stock market values [18].

Using stock market values model, earnings comparatively are value relevant for US companies more than for German services and industrial companies [15]. In other hand and by employing the Ohlson model, the results argued that despite the value relevance of the book values of equity has declined, while earnings have been increased in both Germany and the UK after the switch to the IFRS [19]. Also, earnings comparatively is value relevant less than book value in services and industrial sectors of UK [20] and in Australian stock market [21]. This consistent with the increased value relevance of book value in Korean sectors of services and industrial [22] and in Indonesian stock market [23], while based on [22], earnings have been stated as irrelevant information in indicating the change in stock market values. Earnings and book value are found value relevant in many stock markets of East Asia countries [24]. Indicating the value relevance of accounting information using stock market values model or stock market returns model in Iraqi economic sector has been tested by limited studies. Based on the trend of the prior research on the value relevance of accounting information related to the models of stock market values model and stock market returns, the results of the current study are expected to be increased.

For these conflicting findings of the value relevance related to the stock market values and returns models, the current study affirms the arguments of [9] in that there are no specific treatments. Therefore, it will be beneficial togethe both stock market values and returns models in one study and obtain additional conclusions [10]. Examining the value relevance of accounting information using the both stock market values and returns models is the quite appropriate action in spite of that may produce unclear results [9].

2.3. Financial reporting in Iraq

International Financial Reporting Standards (IFRS) are not required to be applied by the Iraqi companies except for the Iraq domestic public banks using IFRS as the form of ‘international accounting standards since the end of 2016 under the [25] (No. 94 / 2004 – article 42). Based on IFRS Foundation (26: p.2), “in 2004, [27] (No. 21, 1997, phase 133) was amended and referenced the general concept of applying ‘international accounting standards’ in joint stock companies and private companies in Iraq. However, IFRS Standards are not specifically named in law”.

Instead of IAS/IFRS, the Unified Accounting System (UAS) in Iraqi is used as professional accountancy system uniting accounting and auditing practices in this country, which was implemented by the Ministry of Trade in 1969, and it applies to both trade and industry sectors for all types of private and public companies [28]. The UAS is a ‘rules-based’ similar to US GAAP rather than a ‘principles-based system’ of IFRS. The basic function of the UAS is stated to manage and control the local marketplace and thus the national economic. Therefore, it is required from the domestic companies to prepare the financial statements in accordance with UAS [29].
The US emphasis on the properties of consistency and comparability and presents them in terms of priority against the relevance and reliability of the information produced by the system. Since Iraq suffered from many weaknesses in accounting regulation and practices as the other developing countries [5]. Applying the IFRS makes Iraq moves out of the limited local accounting requirements to the fold of the international arena [30].

Based on the above statements, there is no doubts that those limitations press on the Iraqi companies to produce confused financial reporting that influence the users’ decisions. To treat the confusion, the present study examines the value relevance of earnings and book value to ensure whether they able to reflect the changes in the stock market values and stock market returns for Iraqi services companies since there is no study is found in this country that tested the value relevance of these variables related to stock market values and returns models.

3. METHODOLOGY
3.1. Hypotheses development and models

whilst the value relevance of different accounting figures is vastly examined in stock markets of developed countries related to stock market values or returns models, limited research in stock markets of developing countries gathers these mentioned models in a study [31]. For that reason, the current study attempts to inspect the value relevance of earnings and book value of equity related to the stock market values and returns models for Iraqi services companies. Accordingly, the First Hypothesis of the study will be;

H1a: Earnings are value relevant related stock market values model
H1b: Earnings are value relevant related stock market returns model.

Theoretically, to examine the relationship of earnings and book value of equity as accounting information extracted from a company’s financial statements with its stock value requests a model based on the valuation theory. currently, the more prevalently model in this theory is Ohlson model ([32]; [7]; [9]). This model represents the ability of earnings and book value in reflecting the firm value. Consequently, stock market values or stock market returns can be a function of the accounting information and drawn in a formula which turned into the most perfectly regression models employed in the literature of value relevance, in accordance with [9] and to indicate the ability of accounting information in explaining the variance in stock market values and returns, the stock values are regressed on earnings and book value of equity in the stock market values model, while the stock returns are regressed on earnings (book value) and change in earnings (change in book value) in the stock market returns model in this study.

To test the First Hypothesis, the stock market values and returns models that will be used are;

\[
SMV_a = \lambda_0 + \lambda_1 E_a + e_1 \tag{1}
\]

\[
SMR_a = \mu_0 + \mu_1 E_a + \mu_2 \Delta E_a + e_a \tag{2}
\]

where; \(i\): a firm; \(t\): a year-end; \(SMV_a\): stock market values; \(SMR_a\): stock market returns; \(E\): stock’s earnings; \(\Delta E\): a change in stock’s earnings; and \(e\): a random error term.

The Second Hypothesis related to stock market values model will be;

H2a: Book value is value relevant related stock market values model.

Since the earnings are the major variable in the value relevance literature, many studies employed other accounting variables in stock market returns model to be added to / or to be exchanged with earnings. For instance, dividends and change in dividends separately and aggregately are used with earnings and change in stock market returns model [33]. Therefore, book value and change in book value will be hypothesized for the purposes of this study as below;

H2b: Book value is value relevant related stock market returns model.

To test the Second Hypothesis, the stock market values and returns models that will be used are;

\[
SMV_a = \beta_0 + \beta_1 BV_a + e_a \tag{3}
\]

\[
SMR_a = \varphi_0 + \varphi_1 BV_a + \varphi_2 \Delta BV_a + e_a \tag{4}
\]

where; \(BV\): stock book value of equity; \(\Delta BV\) is change in stock book value of equity. Other variables are defined before.

Consequential step for the analysis followed in this study will examine the value relevance of the earnings united with book value of equity related to the both models. Thus, the Third Hypothesis will be;

H3a: combination of earnings and book value are value relevant related to stock market values model.

H3b: combination of earnings and book value are value relevant related to stock market returns model.

As to test the Third Hypothesis, the stock market values and returns models that will be used are;
SMV_{it} = \delta_{0} + \delta_{1} Es_{it} + \delta_{2} BVs_{it} + e_{it} \quad (5)

SMR_{it} = \omega_{0} + \omega_{1} Es_{it} + \omega_{2} \Delta Es_{it} + \omega_{3} BVs_{it} + \omega_{4} \Delta BVs_{it} + e_{it} \quad (6)

where all variables are defined before.

The above regression equations are vastly used in the literature to test the value relevance of the earnings and other accounting information indicators ([19]; [34]; [3] among others). In accordance with the view of [3], primary design of valuation research with annual and pooled data are employed with a basic empirical model that links stock market values (and returns) with earnings and book value of equity. This pathway in the literature is widely utilized and thus, it is chosen to be applied in this study.

3.2. Sample and data selection

Sample of the current study is the Iraqi service companies listed in Iraq Stock Exchange (ISX). Gathering sample data is done based on the published data from Information Center of Iraq Stock Exchange. The period of the study Sample begins with 2015 and ends on 2018. All companies of Iraqi service sector with available data of the selected variables examined in the study have been contained. The stock market values, returns and other indicators/variables of accounting information are valued in Iraqi dinar (ID) per stock at the financial year-end. Total of 120 firms-years and (720) observations-years (30 firms * 6 variables * 4 years) will enter the analysis to get the requested findings.

4. FINDINGS

Before starting the regression tests, it is required to check the dependable assumptions of regression analysis are existent to ensure that study’s variables and raw data have the normal distribution. The normal distribution of the study sample can be ensured by descriptive statistics. This study will link stock market values and returns with the earnings, book value separately and aggregately to obtain the annual and pooled findings to point out the relevancy of those variables related to stock market values and returns models.

4.1. Regression assumptions and descriptive statistics

The assumptions of regression analysis including normality, linearity, homoscedasticity, correlation and multicollinearity are checked for the study’s variables and raw data. Stock market values and the change in book value are be found with Kurtosis values well up and down ± 2 which means that these two variables have a non-normal distribution. To treat the situation of the non-normal distribution, process of transformation should be obtained [35] and it is found that transformation method of logarithm (LOG10) is suitable to transform the non-normal distribution of these two variables into a normal distribution. The distribution of the study’s sample before and after the transformation process are illustrated in Table 1.

<table>
<thead>
<tr>
<th>Table 1: Transformation findings</th>
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<tbody>
<tr>
<td>Before transformation process</td>
</tr>
<tr>
<td>N Valid</td>
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<tr>
<td>Missing</td>
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<tr>
<td>Skew.</td>
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<td>Skew. Std. Error</td>
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<tr>
<td>Kurt.</td>
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<tr>
<td>Kurt. Std. Error</td>
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<tr>
<td>After transformation</td>
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<td></td>
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<tr>
<td>N Valid</td>
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<td>Missing</td>
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<td>Skew.</td>
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<td>Skew. Std. Error</td>
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<tr>
<td>Kurt.</td>
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<tr>
<td>Kurt. Std. Error</td>
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Consequently, step of the data analysis after transformation process is displayed as descriptive statistics and illustrated in Table 2.

<table>
<thead>
<tr>
<th>Table 2. Descriptive statistics</th>
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<tr>
<td></td>
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<tr>
<td>N Valid</td>
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<tr>
<td>Missing</td>
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<tr>
<td>Mean values</td>
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<tr>
<td>Std. Dev.</td>
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<td>Mini values</td>
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<td>Max values</td>
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Es: earnings per stock; BVs: book value of equity per stock; ΔEs: change in earnings per stock; ΔBV: change in book value of equity per stock.

The descriptive statistics measures central tendency and measures of variability for study sample. This includes measures of validity and missed data, means, standard deviations, minimums and maximums values for the stock market values and returns (as dependent variables in the
study’s model) earnings, change in earnings, book value and change in book value (as independent variables in the study’s model). Limited values of change in book value are missed. Totally, the remained observations for all variables are (695) observations. From Table 2, it is noted that values of standard deviation (except that for stock market returns) are below 3 which mean the absence of the outliers [35].

4.2. Regression results and discussion

The results of regression test for the pooled and annual data show that value relevance of the accounting information has been examined using annual and pooled data. To locate this value relevance throughout regressing earnings and book value separately and aggregately on stock market values /returns, the study tests Hypotheses (1, 2 and 3). Accordingly, regression models 1 to 6 have been applied. The pooled regression results for these models are reported in Table 3.

Table 3. Pooled regression sample results

<table>
<thead>
<tr>
<th>Study’s Models and Variables</th>
<th>Predicted Sign</th>
<th>Coefficient</th>
<th>t-statistics</th>
<th>R²</th>
<th>F-statistics</th>
<th>Obs. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMV Model (1)</td>
<td>+</td>
<td>.702</td>
<td>14.201***</td>
<td>.495</td>
<td>191.335***</td>
<td>238</td>
</tr>
<tr>
<td>SMR Model (2)</td>
<td>+</td>
<td>.541</td>
<td>9.112***</td>
<td>.371</td>
<td>61.912***</td>
<td>360</td>
</tr>
<tr>
<td>SMV Model (3)</td>
<td>+</td>
<td>.573</td>
<td>10.102***</td>
<td>.329</td>
<td>91.789***</td>
<td>238</td>
</tr>
<tr>
<td>SMR Model (4)</td>
<td>+</td>
<td>-.313</td>
<td>-3.527***</td>
<td>.278</td>
<td>26.745***</td>
<td>337</td>
</tr>
<tr>
<td>SMV Model (5)</td>
<td>+</td>
<td>.621</td>
<td>7.936***</td>
<td>.495</td>
<td>16.591***</td>
<td>358</td>
</tr>
<tr>
<td>SMR Model (6)</td>
<td>+</td>
<td>.113</td>
<td>1.481</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>.214</td>
<td>14.305***</td>
<td>.721</td>
<td>85.239***</td>
<td>577</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>.059</td>
<td>1.134</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Notes:
*** Significant at 1% levels.
Model (1): SMV = λ0 + λ1 Esit + eit
Model (2): SMR = μ0 + μ1 Esit + μ2 Δ Esit + eit
Model (3): SMV = β0 + β1 BVsit + eit
Model (4): SMR = φ0 + φ1 BVsit + φ2 ΔBVsit + eit
Model (5): SMV = δ0 + δ1 Esit + δ2 BVsit + eit
Model (6): SMR = ω0 + ω1 Esit + ω2 Δ Esit + ω3 BVsit + ω4 ΔBVsit + eit

Table 3 and for regressions in the 4 years of the research period, figures of earnings and book value are definitely value relevant in all 4 yearly regressions related to stock market values models (equations 1 and 3). In 3 out of the 4 yearly regressions, earnings are value relevant, while book value in 2 out of 4 yearly regressions related to stock market returns models (equations 2 and 4) and in the pooled sample related to the two valuation models (equations 1, 2, 3 and 4) both earnings and book value are value relevant. It is found that increased value relevance of earnings related to both stock market values and returns models (equations 1 and 2). This result is harmonious to [36] and [6] respectively. In another side, the value relevance of book value is increased related to stock market values model while it is declined related to stock market returns model (models 3 and 4). Consistently with this result, [4]; [37] and [31] reached out similar results for the both models in different stock markets. Also, it is found that changes in earnings and book value are value relevant in 2 and 4 out of 4 yearly regressions respectively supported by the pooled sample (equations 2 and 4).

Consequently, these results support Hypotheses 1a, 1b, 2a and 2b. This refers to that there is a capability in reflecting
changes in equity market value can be offered by figures of both earnings and book value. The results indicate that earnings are strongly relevant in both stock market values/returns models. This is indicated by the high coefficients on earnings. This might be explained by that investors’ decisions depend on earnings since they contain information that has been reflected in stock market values before releasing the earnings which are perfectly predictable ([14] and [31]).

As it was expected by the current study, the results show that the value relevance of earnings separately is increased related to both stock market values and returns models, likewise the value relevance of book value related to stock market values model. These results are inharmonious to [38] who concluded that the value relevance of earnings is decreased over time and [17] who found that earnings and book value are largely irrelevant. Results indicate a degree of ambivalence between the current study and other studies in the literature that deduced the value relevance of earnings is declined, while it is increased for book value ([39]; [40]; [41]; [34]; [4]; [37]). The current results are inharmonious to studies of [19], [20] and [21] who deduced that earnings are less value relevant than book value or with other research that deduced book value to be value relevant while earnings are not [22].

For the earnings linked to book value related to the stock market values model (equation 5), earnings are value relevant in 3 out of 4 yearly regressions as well as in the pooled sample. Book value is value relevant in 3 out of 4 yearly regressions but not in the pooled sample. As a result, the value relevance of earnings is maximized, while book value is irrelevant. Related to stock market returns model (equation 6), earnings are value relevant in all yearly regressions and book value in 3 out of 4 yearly regressions supported by the pooled sample. As a result, the value relevance of earnings is increased, while that of book value is declined. Changes in earnings and book value are irrelevant in the pooled sample although they are relevant in 3 and 2 out of 4 yearly regressions respectively (equation 6). Those results support Hypothesis 3b but not 3a.

R² values and the significant F-statistics suggest that the six models are fitted the data well in testing the hypotheses. This implies that earnings and book value of equity separately are value relevant related to both stock market values and returns models. The results of Table 3 show that the R² values for the stock market values model are greater than those for the stock market returns model. This is harmonious to many studies ([19]; [4]; [18]; [33]). This indicates that the ability of earnings and book value separately in explaining the variance in stock market values is more than in stock market returns, and differently, the explanatory power of the earnings linked with book value is much greater in explaining the variance in stock market returns than in stock market values.

In total, the differences in results between stock market values and returns models from testing the three hypotheses might be explained by that (a) the two models sometimes yield inconsistent results [9], (b) stock market values model is more equitable and stock market returns model has less serious problems than stock market values models [10], (c) as [4] concluded, the decline in value relevance related to stock market returns model could be explained by the volatility increasing of stock market returns within the sample period or (d) the source of the inconsistency might be just for the period (2015 - 2018) in ISX. Overall, the study conducted a difference in the results between stock market values and stock market returns models in ISX as a developing market as well as those in developed market.

5. SUMMARY AND CONCLUSION

The paper investigated the value relevance of earnings and book value of equity separately and aggregates by using Ohlson model [42] related to stock market values and returns models for Iraqi services companies including (1128) observations/years within the period 2015 - 2018. This study shares in extending the valuation theory and adds insights to the valuation literature by investigating the accounting information value relevance related to the stock market values and returns models in Iraqi emerging market from Middle East region. Also, the study contributes to ISX in strengthening the accounting practice in Iraq.

The value relevance of earnings is increased related to the two valuation models, while that of book value is declined related to stock market returns model. Linking earnings with book value increased the value relevance of earnings and insignificantly the value relevance of book value related to stock market values model, while it increased the value relevance of earnings and declined that of book value related to stock market returns model.

The study faced some limitations. The study’s data is collected to include only companies with available data for the selected sector, variables and years (2015 to 2018). Also, the current study couldn’t compare its results with any of previous studies related to ISX. Future research is called to employ both stock market values and returns models to prove or disprove our results by extending sample size, periods and sectors. Also, it is called to focus on examining the value relevance of accounting information related to both valuation models in ISX alone or across developing or developed countries to enrich academic research and increase the knowledge in this area.

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