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Reform in Accounting Standards: Evidence from Saudi Arabia

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ABSTRACT: Middle East countries have begun to implement economic reforms to stimulate private investment, promote economic growth and support the transition to market economy. Although, it is difficult to define the direct impact of the accounting system reform on economic transformation, as there are many other conditions that have influence on the transition process. However, with the central position of financial reporting and control in the economic system based on market economy, it is reasonable to assume that countries that are more effective in reforming the accounting system would move faster toward economic transformation. This paper examines the value relevance of accounting information in Saudi Arabia for the period 1993-2008, before and after revising national accounting standards, which could express effects of reform in national accounting standards by The Saudi Organization for Certified Public Accountants (SOCPA). The results obtained from a combination of regression and portfolio approaches, show accounting information in Saudi Arabia stock exchange is value relevant. A comparison of the results for the periods before and after reform, based on both regression and portfolio approaches, shows an improvement in value relevance of accounting information after the reform in accounting standards. It could be interpreted to mean that reform of the national accounting standards improve relevancy of accounting numbers in the Saudi Arabia stock exchange.

Keywords: *Value relevance, Accounting standards, Saudi Arabia Stock Exchange, Reform, Accounting information*

INTRODUCTION

Stock markets in the Middle East were widely ignored by international investors due to several factors.(e.g. imposed limitations on foreign stock ownership and lack of common accounting standards) but, recently most of the Middle-Eastern countries had some economic reforms and structural adjustment programs (e.g. changes on institutional setting and regulations such as establishing security market regulation, investor protections, trading rules based on shared regulatory responsibility, etc.). Following improvements in financial markets, the Middle Eastern accounting standards have also been reformed to improve the quality of accounting information.

The role of the accounting in the Persian Gulf states including Saudi Arabia (SA) has received relatively little attention, despite being among developing economies experiencing high economic, as well as international business links and direct international investments up to early 1990s. The Ministry of Commerce as the major role player in SA issued the first two national accounting standards in SA in 1986 which became effective in 1990. These standards are (1) Objectives and Concepts of Financial Accounting; and (2) General Presentation and Disclosure Standard. Two years later in 1992, the Saudi Organization for Certified Public Accountants (SOCPA) was established(Halbouni, 2006). The establishment of SOCPA is deemed as a remarkable milestone in the history of the profession not only due to its recognition as an authorized quasi-independent professional institution but also reflects the fundamental shift in the profession's regulatory system from the government to a closer self-regulatory form (Roszaini and Hudaib, 2007).

The Accounting Standards Committee of SOCPA conducted a comprehensive study on previously issued standards, which included the objectives and concepts of financial accounting and presentation and general disclosure standard. It also decided which items are considered important to be covered by accounting

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standards, and started to revise prior standards as well as preparing some more standards during years 1996 to 1999. The committee studied enquiries received and issued relevant interpretations and opinions. Table 1 includes issued standards.

As mentioned, Saudi Arabia, unlike most of Middle Eastern countries, tried to have its own national accounting standards that are heedful to environmental and cultural factors. Nowadays, due to the volatile growth in, and challenges of international business and the spread of international investment activities, there is a need to understand the usefulness of the various financial reporting practices around the world by way of helping users and decision-makers to evaluate investment opportunities(Halbouni, 2006). Value relevance approach can be employed to assess usefulness of accounting information for investors. The essential idea is that value relevance is a measure of investor perception of the reliability of corporate financial disclosure. Loss of investor confidence in corporate financial disclosures can be detected by a drop in value relevance, while an increase in investor confidence will be similarly detectable by an increase in value relevance. Therefore, value relevance approach is an instrument to estimate quality of accounting information, which is a prime importance to the well-functioning of the economy (Beuselinck, 2005).

Although much has been written about the development of financial markets, accounting and economic growth, a crucial gap in the literature remains: to the best of our knowledge, there is no empirical research to identify the effect of accounting standards reforms on value relevance of accounting information in Saudi Arabia. Consequently, this study aims to investigate the level of the value relevance of accounting information in Saudi Arabia. In particular, it measures whether the quality of accounting information in the country has improved or whether it has not yet become relevant despite reforms and codification of Saudi Arabia's own national accounting standards.

The reminder of this paper is organized as follows. The next section contains theoretical background and literature review, which discusses related theories and prior studies. The third section deals with research methodology subjects and is followed by selecting data and sample. The fifth section discusses research findings. Conclusions and suggestions for future research are discussed in the final section.

Background and Literature Review

Holthausen and Watts (2001) suggest that value relevance studies use two different theories of accounting and standard setting to draw inferences, i.e., "direct valuation" theory and "inputs-to equity-valuation" theory. Direct valuation theory proposes a link between accounting earnings and stock market value. In direct valuation theory, accounting earnings is intended to either measure or be combined with the equity market value changes or levels. However, Zaleha et al., (2008) point out that the conclusion usefulness paradigm proposes that accounting information is useful if utilized by users of financial statements for, or significantly associated with their decision making (Riahi Belkaoui, 2000) even though the information might not be stated at their best current value (Scott,

Table 1: List of issued standards till 1999

Standard No.	Standard	Date of Issue
1	Presentation and general disclosure	1990 updated 1996
2	Foreign currency	1997
3	Inventory	1997
4	Related parties' transactions	1997
5	Consolidation and mergers	1997
6	Revenue recognition	1998
7	General and administrative expenses and sale and distribution expenses.	1998
8	Research and development expenses	1998
9	Investment in equity securities	1998
10	Interim reports	1999
11	Zakat and income tax	1999

Source; Saudi Organization for Certified Public Accountants (SOCPA) website

2000). Within this conception, the main users are those who make decisions having an impact on firms' value, specifically decision-making by capital market participants (Riahi Belkaoui, 2000; Beaver, 2002).

Studies seeking to demonstrate a link between accounting numbers and equity values were first published over 40 years ago. The first such article was by Miller and Modigliani (1966), which used data from the electricity industry to demonstrate that capitalized earnings on assets make the largest contribution to marketplace value. Ball and Brown (1968) and Beaver (1968) are generally recognized as the fundamental studies on the information value of accounting numbers. Ball and Brown showed that the information content of the earnings figure is related to stock prices, and Beaver observed both price and volume reactions to earnings reports.

Qystein and Frode (2007) evaluated the relevance of financial reporting over a relatively long period(over 40 years). Their research results showed that the value-relevance of Norwegian GAAP was non-declining throughout 1965 to 2004. Thinggaarda and Damkierb (2008) investigated whether financial statement information in Denmark has become less value-relevant to investors over time. Their results do not indicate that the value-relevance of accounting information decreased over the period investigated (1983–2001). Dung (2010) tested the value-relevance of financial statement information on the Vietnamese stock market. The results showed that the value relevance of accounting was statistically meaningful, though somewhat weaker than in other developed and emerging markets. Filip (2010) investigated the impact of the mandatory IFRS adoption on the value relevance of accounting in Romania. Findings suggest that the implementation of IFRS increased the value relevance of earnings.

Alsalman (2003) examined the relationship between reported financial figures and both stock prices and returns across Saudi, Kuwait, and U.S. listed firms that use international accounting standards (IAS-sample) to determine whether there are differences in the value relevance of their accounting numbers. The three valuation models used in his study to test the value relevance of accounting numbers were; price model, return model (forward regression) and return model (reverse regression) for period 1993 through 2001. The results show that there are significant differences in the value relevance between countries that apply the same standards but have different institutional factors. They did not any notice to changes in counting standards in Saudi Arabia.

In all of research studies that have been carried out there are no mention to reform of accounting standards in Saudi Arabia. Therefore, an evaluation of the value relevance of accounting information, especially after changes in the economic and accounting environment in recent years is an important area to research.

RESEARCH METHOD

In this study, the regression-variations and the portfolio-returns approaches was used to investigate and to operationalize the value relevance of accounting information.

Regression-Variations Approach

A regression-variations approach measures value relevance based on the explanatory power of accounting information as a measure of market value; the ability of earnings to explain annual market-adjusted returns (return model); and the ability of earnings and book values of equity to explain market values of equity (price model).

Earning Return Model

There is large volume of literature that has examined the usefulness of earnings information by employing a market return model (e.g. Chen, Chen. and Su, 2001; Harris, Lang, and Peter, 1994). In particular, the return model developed by Easton and Harris (1991) has been immensely popular amongst value-relevance researchers (Ali and Zarowin, 1992; Amir, Harris, and Venuti, 1993; Harris et al., 1994; Chan and Seow, 1996; Harris and Muller, 1999; Haw and Qi, 1999; Chen. et al., 2001), because it incorporates both earnings level and earnings changes as independent variables in explaining the dependent variable: annual market return on stock. The present study used Easton and Harris (1991) model with adjusted and suggested by Biddle, Seow, and Siege(1995) and used in subsequent research(Harris and Muller, 1999; Kothari, 2000; Jun Lin and Chen, 2005).

$$Rjt = \beta 0 + \beta 1\ EPSjt / Pjt\text{-}1 + \beta 2\ (EPSjt - EPSjt\text{-}1) / Pjt\text{-}1 + e_{jt}$$

Rjt: annual return (including cash dividends) of firm j shares for period t

Pjt-1: stock price at date of accounting announcement for firm j during period t

EPSjt: annual earnings per share for firm j during period t
EPSjt – EPSjt-1: change annual earnings per share for firm j from period t-1 to t
ejt: error term

Price Model

Following numerous prior value-relevance studies (Amir et al., 1993; Barth, 1994; Burgstahler and Dichev, 1997; Filip and Raffournier, 2010; Harris and Muller, 1999; Landsman, 1986), a price model has also utilized in this study. Unlike the return model, the price model investigates the impact of accounting information on the market valuation of, rather than return on, equity stock; furthermore, a price model examines the impact of not only earnings but also book value of equity on stock performance. Traditionally, earnings and book values are considered to contribute to value relevance (Burgstahler and Dichev, 1997; Ohlson, 1995). Currently, however, the main financial statements include income statement, balance sheet and cash flow statement. Thus the study used the model that shows all of main financial statement as follows:

$$P_{jt} = \beta_0 + \beta_1 BVPS_{jt} + \beta_2 EPS_{jt} + \beta_3 CFPS_{jt+}\ e_{jt}$$

Pjt: the market price per share of firm j at time t
BVPSjt: book value of firm j at time t
EPSjt: earnings of firm j for period ending at time t
CFPSjt: Cash flow of firm j for period ending at time t
ejt: error term

Portfolio-Returns Approach

The portfolio-returns approach defines the value relevance of accounting measures as the proportion of information in security returns captured by the accounting measures (Alford et al., 1993; Chang, 1998; Francis and Schipper, 1999; Hung, 2001) . Thinggaarda and Damkierb (2008) also defined value relevance as the difference between the return on the long position and the return on the short position, that is, the market-adjusted return that can be earn on the long position and the market-adjusted return that can be lost on the short position. This approach measures value relevance as the total return that could be earned from a portfolio based on perfect foresight of earnings. Value relevance is scaled by the total return earned on a portfolio based on advance knowledge of market prices. In this study, this approach attempts to calculate the proportions of all information in security returns that are captured by the earnings, ROE and cash flows. This method aims to provide the evidence of value relevance of earnings, ROE and cash flows by forming the hedge portfolio based on this information. This study used two portfolio a) a portfolio selection based on sign (SIGN-ΔEARN, SIGN-ΔROE, SIGN-ΔCF) and b) a portfolio section based on sign and magnitude (ΔEARN, ΔROE and ΔCF).

Portfolio Selection Based on Sign (SIGN-ΔEARN)

The Portfolio-Returns Approach is based on Alford et al. (1993), Francis and Schipper (1999), Hellstrom (2006) and Thinggaarda and Damkierb (2008). As an example, following is procedure for selecting a portfolio based on sign of changes in EARN. First, an earnings-based hedge portfolio is created. The primary Firm-specific return (Pit-Pit-1+d)/Pit-1 is calculated for all firms over a 16 month depend on countries. The market-adjusted return on security j, R,t , is defined as the compound (with dividend) return minus the return on the value-weighted market portfolio (the study uses all share index return) for each year sample. All companies in the total sample are ranked according to the change in accounting earnings. The change in accounting earnings is calculated on a year basis. A hedge portfolio is formed by going long in shares with the positive earning changes and short in shares with the negative earning changes. The market-adjusted return is later calculated for both the long position and short position as an average of returns for all companies included in the long, respectively short position:

$$R_L = \sum_{j=1}^{N_L} \frac{R_j}{N_L} \qquad R_S = \sum_{j=1}^{N_S} \frac{R_j}{N_S}$$

Where Rj is a market-adjusted return for an individual company and N_L and N_S are the number of companies in the long position and in the short position, respectively. Note that N_L and N_S are equal. The hedge portfolio return (value relevance) is defined as the difference between the return on the long position and the return on the short position, that is, the market-adjusted return that can be earn on the long position and the market-adjusted return that can be lost on the short position:

$$R_H = R_L - R_S$$

Second, for each accounting-based hedge portfolio and year, the market-adjusted returns on a portfolio formed on the basis of perfect foreknowledge of future

stock returns are calculated. This portfolio takes long (short) positions in the stocks in each accounting-based hedge portfolio with positive (negative) 16-month market-adjusted returns. The market-adjusted return on this returns-based hedge portfolio in year t is denoted R_t^h, where H is the type of accounting hedge portfolio. The accounting-based hedge portfolio returns are expressed as a percentage of R_t^h. This controls for time-series differences in the variation in market-adjusted returns (Francis and Schipper, 1999), and the resulting ratio (denoted %mkt) describes the proportion of all information impounded in stock prices that is captured by accounting information in a given period (Thinggaarda and Damkierb, 2008).

Portfolio Selection Based on Sign and Magnitude

As mentioned above, Portfolio Selection Based on Sign and Magnitude applies to ΔEARN, ΔROE and ΔCF. following is a description for calculate the value relevance of earning with this method. The method for calculating other factors such as ROE and cash flow is similar. The primary calculations of market-adjusted returns are similar, based on sign of accounting information. In continue, For example, for the $\Delta EARN_{jt}$ portfolio, we take long positions in the stocks with the highest 40% of $\Delta EARN_{j,t}$ and short positions in the stocks with the lowest 40% of $\Delta EARN_{j,t}$, thereby disregarding the middle 20%. Thus, both the sign and the strength of the change in earnings are extracted from the total available information in financial statements. The market-adjusted return is afterwards calculated for both the long position and short position as an average of returns for all companies included in the long, respectively short position. The hedge portfolio return (value relevance) is defined as the difference between the return on the long position and the return on the short position, that is, the market-adjusted return that can be earned on the long position and the market-adjusted return that can be lost on the short position.

Data and Sample

Data were obtained from the Gulfbase database, the Saudi stock exchange website and other databases such as Bloomberg and DataStream for 1993 through 2009. Observations were compared across data sources to check for data accuracy. The study was limited to this period because the Saudi Arabia revised and developed accounting standards over 1996-1999. Therefore, to investigate of effects reforms it was necessary to have at least 3 years before this event. Another reason for limiting the period under study to the years 1993 to 2008 was the availability of data. The number of companies selected was based on several criteria. First, since this study investigates the effects of accounting reform on value relevance of accounting information. It was necessary to have companies in existence both before and after the reform in order to examine the effect of the reform on the value relevance of accounting information. Therefore, companies that were listed just before or just after the reform were excluded. Second, for most companies in Saudi Arabia the fiscal year ends of December 31. Since it was necessary to have a common period for the calculation of stock return accumulation across all the sample companies, whose fiscal years ended at some time other than December 31 were excluded from the sample. Third, banks and insurance companies are excluded due to their different financial reporting structure and the regulatory nature of the industry. Pursuant to the application of these selection criteria, the final sample consisted of 640 firm-year observations for price model (40 companies for 16 years)and 600 firm-year observations for return model and also portfolio approach (40 companies for 15years).

RESULTS AND DISSCUSSION

Research Findings

Descriptive Statistics

Table 2 provides descriptive statistics for all the variables used in the regression analyses. The average per share market value of equity is 25.18SR for this sixteen-year period with an annual mean standard deviation of 25.23SR. Average annual market returns during this fifteen -year period is .235 with a mean yearly standard deviation of 2.24. These two descriptions exhibit an unsettled market in Saudi Arabia same as other markets in this reign. The high standard deviation in dataset also can confirm the variability of a firm's size and industry classification traded in the Saudi Arabia stock market.

Panel b and c show this situation was better in post-reform periods in comparison with pre-reform periods. Comparison standard deviations of EPS, cash flow per share (CFP) and BVP show BVP has less standard deviation than the mean of BVP and also has less standards deviation than the others' variables. It means better distribution than the other variables.

Table 2: Descriptive statistics

Name of variables	N	Mean	Std. Dev.	Median
Panel A: Full Sample (1993,4-2008)				
P4 (Market price per share of firm)	640	25.18	25.23	17.9
EPS (Earning per share)	640	1.136	1.75	0.61
BVP (Book value of equity-per share)	640	11.60	5.85	10.87
CFP (cash flow per share)	640	1.666	2.07	1.17
R (annual return)	600	0.235	2.24	0.068
EPS/P (Earning per share / price)	600	0.031	0.12	0.04
ΔEPS(change annual earnings per share)	600	0.0036	12	0.004
Panel B: Before reform				
P4 (Market price per share of firm)	280	12.67	11.43	9.11
EPS (Earning per share)	280	0.64	1.15	0.43
BVP (Book value of equity-per share)	280	10.22	5.10	9.78
CFP (cash flow per share)	280	1.24	1.37	0.81
R (annual return)	240	0.08	0.39	0.01
EPS/P (Earning per share / price)	240	0.02	0.15	0.04
ΔEPS(change annual earnings per share)	240	-0.01	0.12	0.00
Panel C: After reform				
P4 (Market price per share of firm)	360	36.05	28.14	28.00
EPS (Earning per share)	360	1.53	2.02	1.00
BVP (Book value of equity-per share)	**360**	**12.69**	**6.17**	**12.31**
CFP (cash flow per share)	**360**	**2.00**	**2.44**	**1.46**
R (annual return)	360	0.34	0.77	0.14
EPS/P (Earning per share / price)	**360**	**0.04**	**0.10**	**0.04**
ΔEPS(change annual earnings per share)	360	0.01	0.13	0.01

All data are based on Saudi's Riyal (SR)

Regression-Variation Approach

Table 3 contains the results of regression-variations approach. Panel A includes a price model divided into two sub-variation models. Result of coefficient test (redundant variables test and omitted variable test) suggest price model with two variables (see below of table 3). Redundant variable test suggests the dropping of CFP variable from the model with three variables (0.1195>0.05). Result of omitted variable test does not indicate that the CFP variable should be added to price model with two variables (0.3274>05).

The first panel of the table 3, model with two variables shows that the R^2 for the price model specification is 68% for the total sample and that coefficients of two variables are statistically significant. A comparison of coefficients indicates that the EPS of 9.5 has a higher explanatory power than any other variable. Therefore, according to price model accounting information in Saudi Arabia is value relevant and EPS is more relevant than BVP.

A comparison of the two results for before the reforms (1993-1999) and after the reforms (2000-2008) (i.e., second and third line of the panel A) demonstrates that explanatory power (R^2) of accounting information increased since 69% to 75% in the period after reform. Further analysis reveals that both sub-samples have high R^2, (69% and 75%) and also a high incremental value relevance of EPS. Consequently, the results indicate reform in accounting standards improve relevancy of accounting numbers in Saudi Arabia stock exchange.

Panel B of table 3 provides the results of the return model. Explanatory power (R^2) for the return model specification is 3% for the total sample. According to these results it can be concluded that accounting

Table 3: Result of regression-ariations approach

Panel A: Price Model

Years	$p_{it}=ß_0+ß_1bvp_{it}+ß_2eps_{it}+e_{it}$					$p_{it}=ß_0+ß_1bvp_{it}+ß_2eps_{it}+ ß_3cfp_{it}+e_{it}$				
	$ß_0$	$ß_1$	$ß_2$	R^2	N	$ß_0$	$ß_1$	$ß_2$	$ß_3$	R^2
1993- 08	0.25	1.27	9.5	0.68	640	-0.27	1.27	9	0.65	0.68
t-st.	0.06	4.3***	11.5***			-0.06	4.4***	9.55***	1.5	
1993- 99	3.1	0.7	3.1	0.69	280	3	0.7	3.3	-0.29	0.70
t-st.	11***	18***	14.7***			11***	20***	15.7***	-1.3	
2000-08	14.7	.49	9.9	0.75	360	14.7	0.51	10	-0.18	0.75
t-st.	2.28***	1.39	7.7***			2.2**	1.5	7.2***	-0.48	

Panel B: Return Model

Years	$R_{it}= ß_0+ß_1eps_{it}/p_{it-1}+ß_2(eps_{it}- eps_{it-1})/p_{it-1} +e_{it}$						
	$ß_0$	$ß_1$	$ß_2$	R^2	N	Coefficient Tests of CFP	Prob.f
994- 08	0.16	0.49	0.26	0.03	600		
t-st.	1.9**	1.37	0.51			Redundant Variables	0.1195
1994- 99	0.01	0.58	-0.65	0.057	240		
t-st	0.51	4.***1	-2.6***			Omitted Variables	0.3274
2000-08	0.29	1.2	0.26	0.065	360		
t-st	1.8*	1.84*	0.55				

Notes:
***, **, * indicates significance at 0.01, 0.05 and 0.10 levels
T-statistics based on White heteroscedasticity-consistent standard errors.
*for full sample and two sub-samples of return model is used GLS with Cross Section Weight
* For full sample of both sub-samples price model are used GLS (Cross Section Weight)

information (EPS level and EPS changes) in Saudi Arabia is relevant for investors.

Second and third line of panel B of the table 3 show that explanatory power (R^2) accounting numbers in the return model increased from 5.7% in the period before reform (1993-1999), to 6.5% in the period after reform (2000-2008). Therefore, the result of the return model indicates that reform in accounting standards improved relevancy of accounting numbers (EPS level and EPS changes) in Saudi Arabia stock exchange.

Portfolio-Returns Approach

Value Relevance Based on Sign

Panel A (first column) of table 4 shows for each year in the investigated period, results for the mean market-adjusted return on each accounting hedge portfolio (%). The Value 12.5 in below of SIGN_ΔEARN for year 1999 means person could earn 12.5 percent net market-adjusted return (long position minus short position) if SIGN_ΔEARN was used to construct a portfolio. Since this is more than zero it can be concluded that earning information is relevant for investors on the Saudi Arabia stock exchange in year 1999. A comparison of these numbers, SIGN_ΔEARN (12.5 %), SIGN_ΔROE (2.63%) and SIGN_ΔCFP (.43%) in the table 4 for year 1999 shows that SIGN_ ΔEARN (12.5%) are more relevant for investors than the others variables.

The value 19 under SIGN_ΔEARN for year 1999 as %mkt ratio indicates that about 19 % of the total perfect foresight returns are available to investors with advance knowledge of the sign of the earnings change. These percentages for SIGN_ΔROE and SIGN_ΔCFP are 3.99 % and .65% meaning that changes of cash flow for year 1999 had minimum relevancy while SIGN_ΔEARN had maximum relevancy for investors. A comparison between these ratios demonstrates value relevance of earnings and ROE changes are more than cash flow for investors. Further analysis at the panel A of table 4 shows that in the period of investigated, the highest relevancy of accounting number belonged to SIGN_ΔEARN (64.6%) in 2004 based on hedge portfolio return (%).

Panel B of table 4 shows mean market-adjusted returns on accounting hedge portfolio (%) and proportion of the total hedge portfolio market-adjusted

returns can be earned by the per-knowledge of accounting information(%mkt) for the investigated period. The results based on the sign; clearly demonstrate that foreknowledge of information in the financial statements would be highly relevant for investors. Investment strategies based on a preview of the sign of the change in earnings (SIGN_ΔEARN) would earn an average market-adjusted return throughout the sample period about 16.6%, compared with 16.3% for the ΔROE portfolio and 10.8% for the SIGN_ΔCASH portfolio. What is interesting in this comparison is that SIGN_ΔEARN portfolio has a few higher relevant than the ΔROE portfolio. So, these results also mean that all of the selected accounting numbers are value-relevant to investors. Investments based on accrual-based information are expected to be more profitable. The accrual-based information is more value-relevance than cash based information.

The results in second and third column reveal that accounting information is value relevant in the both periods before (1994-1999) and the period after reform (2000-2008) in Saudi Arabia. In the first period, relevancy of SIGN_ΔCASH information is more than others while in the second period (after reform) relevancy of SIGN_ ΔROE information is more than others. Result based on, SIGN_ΔEARN, SIGN-CASH and SIGN_ΔROE show accounting reform improved the relevancy of accounting information in Saudi Arabia.

Value Relevance Based on Sign and Magnitude

The results obtained from the preliminary analysis of the value relevance of accounting information based on sign and magnitude are presented in panel A (second column) of table 4. The value 8.9 under ΔEARN column for year 1996 means a person could earn 8.9 percent net market-adjusted (long position minus short position) based on sign and magnitude of earning changes. Since this is more than zero it can be concluded earning changes is relevant for investors to make well-informed decisions. A comparison of the numbers for ΔEARN (8.9%), ΔROE (1.35%) and ΔCFP (-5%) for year 1996 shows that cash flow information is not relevant for investors in making investment decisions, while earnings and ROE information are relevant for investors. They also show that a present earnings (8.9 %) is more relevant than the ROE (1.35%) for year 1996. The value 13.9 under ΔEARN for year 1996 as %mkt ratio indicates that about 13.9% of the total market adjusted returns are available to investors with advance knowledge of the sign and magnitude of the ΔEARN portfolio. The ratios for ΔROE and ΔCFP are 2.1% and -7.9% , respectively. A comparison of the numbers shows that ΔEARN is more relevant than other variables.

Panel A (second column) of table 4 shows in the period under investigation, the accounting number with the highest relevancy is ΔROE (54.9%) in year 2003, based on hedge portfolio return (%). According to %mkt ratio, the accounting number with the highest relevancy is ΔEARN (63.4%) in year 1995. Lower relevancy (lack) is belonged to ΔCASH -34.6% at 2003 based on hedge portfolio return (%). ΔEARN (-17.4%) in year 1994 has least relevancy (lack), based on hedge portfolio return (%).

The results in column of panel B based on sign and magnitude, clearly demonstrate that foreknowledge of information in the financial statements are highly relevant for investors. Investment strategies based on a preview of the sign and magnitude of the change in ROE would earn an average market-adjusted return throughout the sample period of about 25.5%, compared with 16.1% for the ΔEARN portfolio and 9.9% for the ΔCASH portfolio. The results show all of the accounting numbers are value-relevant. Investments based on accrual-based information are more profitable. The results in second and third line under sign and magnitude (panel B) indicate that accounting information is value-relevant in the both periods before (1993-1999) and the period after reform (2000-2008) in Saudi Arabia. In the first period relevancy of ΔEARN information is more than others, while in the second period (after reform) relevancy of ΔROE information is more than others. Result based on ΔEARN, CASH and ΔROE show accounting reform improved the relevancy of accounting information in Saudi Arabia. This conclusion matches that of the regression approach.

Control Variables (Size and Industry Effects)

The first and second parts of the Table 5 show the result of value relevance in small and large companies. The explanatory power (R^2) of model for small companies' specification is 25% for the total sample and all coefficients are statistically significant. A comparison of coefficients indicates that the full model EPS with 4.8 has a higher explanatory power than BVP. Further analysis reveals value relevance of accounting information in small companies ($R^2 = 25\%$) is less than

Table 4: Portfolio-Rreturns approach

Panel A: Mean market-adjusted returns (MAR)on accounting hedge portfolio (%) and proportion of the total hedge portfolio MAR can be earned by the per-knowledge of accounting information(%mkt)1994-2008.

Year	Based on Sign						Based on Sing and Magnitude					
	ΔEARN		ΔROE		ΔCFP		ΔEARN		ΔROE		ΔCFP	
	%	%mkt	%	%mkt	%	%mkt	%	%mkt	%	%mkt	%	%mkt
1994	-1.4	-3.3	-2.9	-6.9	3.6	8.4	-7.0	-17.4	-7.0	-17.4	1.7	4.2
1995	28.3	65.4	20.2	46.8	13.3	30.7	29.6	63.4	24.9	53.3	14.4	30.7
1996	-1.2	-2.1	-6.8	-12.3	-6.4	-11.4	8.9	13.9	1.4	2.1	-5.0	-7.9
1997	-2.8	-5.2	-3.1	-5.8	16.6	30.5	13.8	21.8	4.4	6.9	14.7	23.1
1998	-2.3	-2.6	-13.1	-14.6	15.3	17.0	2.4	2.9	8.0	9.7	4.3	5.2
1999	12.5	19.0	2.6	4.0	0.4	0.7	21.0	26.6	10.6	13.4	-7.1	-9.0
2000	19.7	32.0	19.8	32.3	23.0	37.5	27.8	38.3	23.7	32.7	25.7	35.3
2001	29.9	39.1	42.5	55.5	30.2	39.5	48.0	50.6	45.4	47.8	36.1	38.0
2002	1.6	3.2	8.2	15.8	23.9	46.2	5.7	8.6	17.4	26.2	26.2	39.3
2003	15.9	9.2	53.7	30.8	34.6	19.9	-18.7	-7.6	54.9	22.4	-34.6	-14.1
2004	64.6	57.5	36.9	32.8	-32.6	-29.0	14.2	9.7	48.1	32.7	-14.2	-9.6
2005	30.2	27.9	10.2	9.4	-10.6	-9.8	39.3	35.7	29.0	26.3	-14.2	-12.9
2006	33.7	19.5	37.5	21.7	1.7	1.0	22.0	27.3	46.9	58.3	23.6	29.3
2007	-16.5	-26.8	-0.4	-0.7	-11.2	-18.2	-7.4	-9.2	-1.5	-1.9	0.2	0.3
2008	11.9	20.3	12.6	21.6	-2.3	-3.9	9.4	11.7	11.5	14.4	1.0	1.2

Panel B: Mean MAR on accounting hedge portfolio (%) and proportion of the total hedge portfolio MAR can be earned by the per-knowledge of accounting information

Year	Based on Sign						Based on Sing and Magnitude					
	ΔEARN		ΔROE		ΔCFP		ΔEARN		ΔROE		ΔCFP	
	%	%mkt	%	%mkt	%	%mkt	%	%mkt	%	%mkt	%	%mkt
1994-08	16.6	19.5	16.3	18.0	10.8	15.4	16.1	20.7	25.5	23.1	9.8	13.8
1994-99	6.8	14.1	3.8	8.5	8.2	14.5	12.6	21.4	8.2	14.2	5.8	10.5
2000-08	23.1	23.2	24.6	24.4	12.6	16.0	18.5	20.2	37.1	29	12.5	15.9

the full sample (R^2 = *68%*). A comparison of the two results for before and after reform in small companies demonstrate R^2 of accounting information increased from 18% in the period before reform to 24% in the period after reform.

The results of using price model also show that the level of value relevance of accounting information for the entire sample of companies (R^2 = *68%*) outperform other samples. In addition, big companies with 65.5% of value relevance perform better as compared to small companies for which only 25% of their market price could be explained by accounting information. Comparing the two results for before and after of reform, it can be seen that value relevance of accounting number increase from *65%* in the period before reform to *70%* after reform. Consequently, the results indicate that there is a difference in value relevance of accounting information between large and small companies in Saudi Arabia stock exchange.

The third section of table 4 shows that the result of R^2 (53%) from the agricultures' companies in Saudi Arabia is less than the result for full sample. A comparison of coefficients with full sample indicates that the EPS with 8.1 also has a higher explanatory power than the BVP. As can be seen from the table, value relevance of the accounting number for agricultures companies in the period after reform (R^2 = *51%*) is less than the period before reform (R^2 = *81%*). What is interesting in this data is that a coefficient of EPS is higher than BVP for both of periods. Accordingly, the result indicates first, value relevance of accounting numbers in agriculture companies in Saudi Arabia is less than the full sample. Secondly, reform in accounting standards did not improve relevancy of accounting numbers in agriculture companies in Saudi Arabia stock exchange.

The fourth section of table 5 demonstrates that explanatory power (R^2) of model for cement companies

is 67% for the total sample and only coefficient of EPS variable is statistically significant. A comparison of coefficients indicates that the full sample model EPS with 15 has higher explanatory power. Further analysis reveals value relevance of accounting information in cement companies (R^2 = *67%*) is a little less than the full sample (R^2 = *68%*). A comparison of the two results for before and after reform in cement companies demonstrate explanatory power (R^2) of accounting information decrease from *79%* in the period before reform to *67%* after reform. Therefore, the result indicates first, value relevance of accounting numbers in cement companies is less than the full sample Secondly, reform in accounting standards did not improve relevancy of accounting numbers in cement companies on Saudi Arabia stock exchange. Thirdly, there is a difference in value relevance of accounting information between unlike industries in Saudi Arabia stock exchange.

CONCLUSION

This paper has examined the impact of accounting reforms in Saudi Arabia on the value-relevance of accounting information. In the first step, value relevancy of accounting information is clearly supported by the current findings from price and return model. A comparison between two explanatory powers (R^2) for the period before and after reform based on two models showed that value relevancy of accounting numbers was higher in the period after reform. It could mean that reform in accounting standards improved relevancy of accounting numbers in Saudi Arabia stock exchange. It is remarkable that other factors were also influential.

Findings of both methods based on portfolio returns approach showed that selected accounting numbers were value relevant. A comparison of the results of the two methods for periods before and after reform showed value relevancy of all variables ("CASH, "EARN and "ROE) increased. Therefore, findings of two approaches supported claims that accounting information is value relevant in Saudi Arabia stock market. The results also supported improving value relevancy of accounting information after revising in Saudi Arabia stock market.

Findings from this study are relevant to standard setters and regulators for future directions in developing accounting standards. The results may be helpful to investors for understanding capital markets such as those of Iran, and may also provide insights for accounting standard setters and regulators.

The result of the study revealed accrual based information were more value relevant than cash based information. And also the coefficient of EPS was more

Table 5: Result of control variables

Years	$p_{it}=ß_0+ß_1bvp_{it}+ß_2eps_{it}+e_{it}$			$p_{it}=ß_0+ß_1bvp_{it}+ß_2eps_{it}+e_{it}$			$p_{it}=ß_0+ß_1bvp_{it}+ß_2eps_{it}+e_{it}$		
	1993- 2008			1993- 1999			2000-2008		
	$ß_0$	$ß_1$	$ß_2$	$ß_0$	$ß_1$	$ß_2$	$ß_0$	$ß_1$	$ß_2$
Small. Com	7.4	0.76	4.8	4.9	0.31	1.37	12.3	0.64	0.64
t.st.	3***	8.1***	3.9***	10***	4.5***	2.9***	3.4***	4.3***	4.3***
R^2	**0.25**			**.18**			**0.24**		
N	10	160		10	70		10	90	
Large.Co	7.8	0.55	11.1	2.3	.1.5	-1	29	-1	12.5
t.st.	1.12	0.77	7.9***	6***	13***	-1.6*	2.8***	-1.1	7.5***
R^2	**0.655**			**0.65**			**0.70**		
N	10	160		10	70		10	90	
Agricultures	9.8	0.75	8.1	3.6	0.63	0.39	16.7	.60	7.9
t.st.	2.23**	2.25**	13***	2.45***	4.8***	1.47	3.2***	1.5	7.2***
R^2	**0.53**			**0.88**			**0.51**		
N	11	176		11	77		11	99	
Cement.co	-9.23	0.26	15	10	1.1	-1.4	32	-2.1	17
t.st.	-1.7*	0.93	10***	1.96*	4.2***	-1	2.3**	-2.13**	6.8***
R^2	**0.67**			**0.79**			**0.67**		
N	7	112		7	49		7	63	

Notes:
***, **, * indicates significance at 0.01, 0.05 and 0.10 levels
T-statistics based on White heteroscedasticity-consistent standard errors.

than BVP. Therefore, another avenue for future research is to explore the reasons for accrual based information' superiority over cash based information and earnings' superiority over book value.

REFERENCES

Alford, A., Jones, J., Leftwich, R., and Zmijewski., M. (1993). The Relative Informativeness of Accounting Disclosures in Different Countries. *Journal of Accounting Research*, 31, pp. 183-223.

Ali, and Zarowin, P. (1992). The Role of Earnings Levels in Annual Earnings-returns Studies. *Journal of Accounting Research*,30 (2), pp. 286–296.

Alsalman. Ahmad M. (2003). The Value Relevance of Accounting Numbers And The Implications For International Accounting Standards Harmonization: Evidence From Saudi Arabia And Kuwait. Florida Atlantic University, Florida.

Amir, E., Harris, T. S., and Venuti, E. K. (1993). A comparison of the Value-relevance of US Versus Non-U.S. GAAP Accounting Measures Using form 20-F Reconciliations. *Journal of Accounting Research,* 31, pp. 230–264.

Ball, R., and Brown, P. (1968). An Empirical Evaluation of Accounting Income Numbers. *Journal of Accounting Research,* 6 (2), pp. 159-178.

Barth, M. E. (1994). Fair Value Accounting: Evidence from Investment Securities and the Market Valuation of Banks. *Accounting Review*, 69 (1), pp. 1–25.

Beaver, W. H. (2002). Perspectives on Recent Capital Market Research. *Accounting Review*, 77 (2), pp. 453-474.

Beaver, W. H. (1968). The Information Content of Annual Earnings Announcements. *Journal of Accounting Research,* 6, pp. 67-92.

Beuselinck, C. (2005). Essays on Financial Reporting Quality, Earning Management, and Corporate Disclosure. University of Ghent, Ghent, Belgium.

Biddle, G., Seow, G., and Siegel, A. (1995). Relative Versus Incremental Information Content. *Contemporary Accounting Research,* 12 (1), pp. 1-23.

Burchell, S., Clubb, C., Hopwood, A., Hughes, J., and Nahapiet, J. (1980). The Roles of Accounting in Organisation and Society. *Accounting Organizations and Society,* 5 (1), pp. 5-27.

Burgstahler, D. C., and Dichev, L.D. (1997). Earnings, Adaptation and Equity Value. *The Accounting Review,* 72 (2), pp. 187-215.

Chan, K. C., and Seow, G. S. (1996). The Association between Stock Returns and Foreign GAAP Earnings Versus Earnings Adjusted to U.S. GAAP. *Journal of Accounting and Economics,* 21 (1), pp. 139–158.

Chang, J. (1998). The Decline in Value Relevance of Earnings and Book Values: Wharton School University of Pennsylvania.

Chen.C. J, Chen. S, and Su. X. (2001). Is Accounting Information Value-Relevant in the Emerging Chinese Stock Market. *Journal of International Accounting Auditing and Taxation,* 10 (1), pp. 1-22.

Dung, N. V. (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. D., and Harris, T. S. (1991). Earnings as an Explanatory Variable for Returns. *Journal of Accounting Research, 29* (1), pp. 19-36.

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), pp. 191-223.

Filip, A., and Raffournier, B. (2010). The Value Relevance of Earnings in a Transition Economy: The Case of Romania. *The International Journal of Accounting,* 45 (1), pp. 77-103.

Francis , J., and Schipper, K. (1999). Have Financial Statements Lost Their Relevance? *Journal of Accounting Research Supplement,* 37 (2), pp. 319-352.

Halbouni. S. (2006). The Degree of Harmonization of Accounting Practices Within Saudi Arabia. *Journal of Economic and Administrative Sciences,* 22 (2), pp. 51 -76.

Harris, M. S., and Muller, K. A. (1999). The Market Valuation of IAS Versus US-GAAP Accounting Measures using Form 20-F Reconciliations. *Journal of Accounting and Economics,* 26 (1-3), pp. 285–312.

Harris, T. S., Lang, M., and Peter, H. (1994). The Value Relevance of German Accounting Measures: An Empirical Analysis. *Journal of Accounting Research,* 32 (2), pp. 187-209.

Haw, I. M., and Qi, D. (1999). Value Relevance of Earnings in an Emerging Capital Market: The Case of A-shares in China. *Pacific Economic Review,* 4 (3), pp. 337-347.

Hellstrom, K. (2006). The Value Relevance of Financial Accounting Information in a Transitional Economy: The Case of the Czech Republic. *European Accounting Review*, 15 (3), pp. 325-349.

Holthausen, R. W., and Watts, R. L. (2001). The Relevance of the Value-relevance Literature for Financial Accounting Standard Setting. *Journal of Accounting and Economics,* 3 (1-3), pp. 3-75.

Hung, M. (2001). Accounting Standards and Value Relevance of Financial Statements: An International Analysis. *Journal of Accounting and Economics,* 30 (3), pp. 401-420.

Jun Lin, Z., and Chen, F. (2005). Value Relevance of International Accounting Standards Harmonization: Evidence from A- and B-share Markets in China. *Journal of International Accounting, Auditing and Taxation,*14 (2), pp. 79-103.

Kothari, S. P. (2000). The Role of Financial Reporting in Reducing Financial Risks in the Market. Paper presented

at the Federal Reserve Bank of Boston in its Journal Conference Series.

Landsman, W. (1986). An Empirical Investigation of Pension Fund Property Rights. *The Accounting Review,* 61 (4), pp. 662–691.

MaGee, R. W. (2008). Accounting Reform in Transition and Developing Economies. Springer Science , Business Media, LLC.

Miller, M. H., and Modigliani, F. (1966). Some Estimates of the Cost of Capital to the Electric Utility Industry, 1954-57. *The American Economic Review,* 56, June, pp. 333-391.

Ohlson, J. A. (1995). Earnings, Book Values, and Dividends in Equity Valuation. *Contemporary Accounting Research,* 11 (2), p. 661.

Qystein, G., Kjell, H. K., and Frode Saettem. (2007). The Value-Relevance of Financial Reporting in Norway 1965-2004. Norwegian School of Economics and Business Administration, Norway.

Riahi Belkaoui, A. (2000). *Accounting Theory*, 4th ed. London: Thomson Learning.

Roszaini, H. and Hudaib, M. (2007). The Role of Auditing in a 'Highly Religious' State. University of Essex, Department of AFM, Colcheste.

Saudi Organization for Certified Public Accountants (SOCPA). (2008). Historical Introduction on Accounting and Auditing Profession in Saudi Arabia. Available: http://www.socpa.org.sa/engl/autohtml.php?op=modload&name=intro.htm&file=index

Scott, W. R. (2000). *Financial Accounting Theory,* 2nd ed. Ontario: Prentice-Hall Canada Inc.

Thinggaarda, F., and Damkierb, J. (2008). Has Financial Statement Information Become Less Relevant? Longitudinal Evidence from Denmark. *Scandinavian Journal of Management,* 24 (4), pp. 375-387.

Zaleha, A. S., Muhd-Kamil, I., Jagjit, K., and Hamezah, M. N. (2008). The Value Relevance of Intangibles Non-Current Assets in Different Economic Conditions. *International Review of Business Research Papers,* 4 (2), pp. 316-337.