

Value relevance of earnings and book values in the Qatari Stock Exchange

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Abstract

Purpose – The study of developed capital markets suggests that information provided in financial statements has lost its value relevance to equity holders. The purpose of this paper is to explore this issue in the emerging market of Qatar.

Design/methodology/approach – Following other studies in the literature, the study examines the value relevance of earnings and book values using the price valuation model provided by Ohlson (1995). A total of 215 observations were collected from all firms listed on the Qatari Stock Exchange over a period of five years (2012–2016).

Findings – This study suggests that the value relevance of both earnings and book values has noticeably decreased over the sample period. However, its results show that the decline in the value relevance of earnings favored book values.

Research limitations/implications – Like other studies, this one has limitations that suggest areas for future research. For example, in Qatar, like other emerging markets, a lack of data prevents the performance of deep analysis. Additionally, the authors only use Ohlson's (1995) model as a framework for evaluation. It would be interesting to explore the changes when examining alternative valuation models. Another limitation is that the authors examine only two accounting measures: earnings and book values. Further research could explore changes in the value relevance of other measures, such as cash flow.

Practical implications – These findings provide empirical evidence regarding the value relevance of earnings and book values in an emerging market.

Originality/value – To the authors' knowledge, this paper provides the first empirical evidence regarding the value relevance of earnings and book values in the emerging capital market of Qatar.

Keywords Qatar, Financial statements, Value relevance, Emerging capital markets, Ohlson's model

Paper type Research paper

1. Introduction

The study of capital markets has spent much time and effort on the relations between financial statements and stock prices. One primary focus of the study of accounting is judging whether, when capital markets become aware of financial information, stock prices move in response to and along with book values and reported earnings (Lim and Park, 2011). The degree to which financial statements are informative is called "value relevance" (Lam *et al.*, 2013). The study of value relevance investigates the association between a set of independent accounting variables and stock prices (dependent variable). It follows the research of Alfraih (2016) and considers the institutional features of both the Qatari and Kuwaiti stock markets. This study's premise is that when market participants make adjustments, stock prices in markets rapidly change in response if useful information is disseminated (Alfraih, 2017). Accounting variables that are significantly associated with dependent variable are called value relevant (Beaver, 2002). We assume that the greater the degree of value relevance of the information contained in a financial statement, the more it can be used to make investment decisions and the nearer the association will be between financial statements and the prices of shares or a company's returns (Lam *et al.*, 2013). Barth *et al.* (2001) argue that a key goal of the study of value relevance is "[...] to extend our knowledge regarding the relevance and reliability of accounting amounts as reflected in equity values" (Barth *et al.*, 2001, p. 80).



The work of Ball and Brown (1968) and of Beaver (1968) has led to the production of a substantial body of work over the past four decades showing that the reaction of markets is closely associated with information contained in financial statements (Habib, 2010). However, the belief is now widespread that the information in financial statements has lost its value relevance due to a shift from an economy that is capital-intensive to one that is non-traditional, service oriented and high tech (Dontoh *et al.*, 2007). Examples of studies that have observed this change are Harris *et al.* (1994) in Germany and the following studies in the USA: Collins *et al.* (1997), Lev and Zarowin (1999); Francis and Schipper (1999), Brown *et al.* (1999), Ryan and Zarowin (2003) and Dontoh *et al.* (2004). In investigating the value relevance of accounting information produced by companies listed in South-Eastern European countries during the 2005–2010 period, Pervan and Bartulović (2014) observed no increase in the value relevance of accounting information. In contrast, their findings suggest decreases or large oscillations in the value relevance for the observed period. Kwon (2018) explored the value relevance change before and after the mandatory adoption of Korea's international financial reporting standards and observed a significant change in the value relevance of earnings and book value produced by Korean-listed companies. Although these studies measure the value relevance of financial statements differently, all find that it has decreased in the past few decades (Givoly *et al.*, 2013).

However, others have found it to be on the increase. Kim and Key (2014) find an improvement over time in the value relevance of earnings and book value. Furthermore, the results of other studies are mixed. Lam *et al.* (2013) see improvements in some financial variables' value relevance and reductions in others.

Chalmers *et al.* (2010) argue that, despite the fact that the value relevance of information in financial statements in developed markets has been well-documented since Ball and Brown (1968), the empirical issue remains of determining the role played by accounting information in the pricing of securities in developing and frontier markets. Little attention has been paid in prior studies to markets like these, where the reliability and enforcement of accounting standards are questionable. One could conclude that accounting information is less relevant in such markets because the prices of stocks do not reflect all company information available, due to various imperfections in the market. For example, asymmetry of information may be more severe in developing and frontier markets than in developed ones because there are fewer sources of information. However, such information could be more vital and influential for participants in these markets than other information sources (Lopes, 2002).

Acar and Ozkan (2017) argue that accounting information serves as the measurement basis of corporate performance and is thus considered a bridge between users of accounting information and company management. Study of the role of accounting information in emerging markets clarifies such issues and increases the general understanding of them. Nevertheless, the value relevance of financial statements over time in this context has been little examined. Anecdotal concerns from financial analysts, regulators and papers focused on North America have prompted this study, which was conducted to fill the gap in the literature by exploring the value relevance of financial statements over time in an emerging market – the capital market of Qatar – where international accounting standards has adopted to yield high-quality accounting information and help investors make economic decisions.

There are three main findings reported in this paper. First, in cross-sectional, pooled and year-on-year regressions, the variables earnings and book values of equity were singly and together found to be significant for explaining the stock prices of Qatari Stock Exchange (QSE)-listed firms in 2012–2016; this implies that QSE participants rely greatly on such information in making investments. Second, and at odds with a study hypothesis, the data of this study suggest that the joint value relevance of earnings and book values has decreased noticeably over the sample period. Third, declines in value relevance are documented for earnings but not for book values; from this finding, we infer that changes in value relevance favor book values, which show increases over time.

This study is structured as follows. In Section 2, the economy and accounting system of Qatar is briefly discussed. Section 3 notes related literature and presents the hypotheses. Section 4 outlines the data and model. The results are found in Section 5. Section 6 concludes the paper with a summary and discussion of results, as well as an outline of the study's major contributions and implications.

2. Background of Qatar

The economy of Qatar witnessed significant growth as its production of oil and gas increased and it turned to diversifying its revenues; this, in turn, affected gross domestic production (GDP). Qatar has one of the highest per capita incomes in the world, stimulated by oil and natural gas revenues; GDP per capita jumped from 31,897 in 2003 to 60,810; this growth rate of 90.6 percent is one of the highest in the world (IMF, 2017). This growth attracted investment and brought foreign money to the country (Qatar National Vision, 2008).

The QSE was launched in 1995 but only officially started operations in 1997 (Ghaida *et al.*, 2016). Over the last two decades, it has witnessed significant changes in its operations and regulations (Almujamed, 2018). In 2009, the QSE received its current name (it was previously called the Doha Stock Market). A partnership with NYSE Euronext was implemented to restructure and develop the QSE and the number of companies listed on it increased from 18 to 45 from 1997 to 2016 (Qatar Stock Exchange, 2017). The QSE is regulated by an independent regulator, QFMA (2017), to maintain fairness and a safe investment environment among participants in the stock market.

Qatari firms listed on the QSE share those of the Kuwaiti firms listed on the Kuwaiti stock market because they have different ownership structures (government, dominant family, individuals and institutional investors). Unlike those listed in developed stock markets, stock ownership in Gulf Cooperation Council (GCC) countries – particularly in Qatar and Kuwait, discussed here – is highly concentrated (Alfaraih *et al.*, 2012; Abdallah and Ismail, 2017). For instance, Abdallah and Ismail (2017) highlighted that the QSE suffers from highly concentrated ownership. The researchers stated that most of the firms are owned by the five largest shareholders, ranging from 24 to 47 percent. Almutairi (2011) found similarly for Kuwait. For example, he suggested that the Kuwaiti Government owns substantial equity in most industrial in the Kuwaiti stock market. Furthermore, Morgan Stanley Capital international has suggested that, to attract foreign investors, Qatar, like most GCC countries, should seek to disclose further information, increase transparency, provide more protection to investors and follow international regulation (QFMA, 2017). The Qatari stock market differs from that of Kuwait stock market and most of the other GCC stock markets in forcing some firms to be restricted to at least 51 percent Qatari ownership.

Qatar does not have its own accounting system; like other GCC countries, it adopted the International Financial Reporting Standards (IFRS) in 1999, which became mandatory for all companies listed on the QSE; this has led to an improvement in the timeliness and availability of financial information to investors. However, the legal framework that underpins financial reporting within Qatar goes back 1980s. Its Commercial Company law and stock market has imposed certain requirements, introduced in the 1980s and 1990s. For example, the Minister of Economy and Commerce (1981), under Commercial Company law No. 11/1981 (1981), required all firms to prepare an annual balance sheet and profit and loss accounts. Furthermore, this law required all companies to maintain a general journal, inventory records and a correspondence register and to retain records of their financial activities.

These developments in the legal framework underpinning financial reporting may suggest a better information environment, meeting current investor needs and attracting more investors which, in turn, improves the value relevance of earnings and book values.

Thus, it is hypothesized that the value relevance of earnings and book value increased over the period 2012–2016. Consistent with prior study of value relevance, this paper employs Ohlson's (1995) model as a valuation framework to test the hypotheses.

3. Related literature and research hypotheses

The relationship between stock prices/returns and the financial statements that are produced for the capital market (Lim and Park, 2011) has been examined by several researchers. To examine value relevance, researchers have investigated the association among the dependent variable stock prices/returns and earnings, book value, cash flow and other independent accounting variables. Any accounting variable that is found to have a significant statistical association with the dependent variable (returns) is considered to be value relevant for an investor (Beaver, 2002).

Numerous studies have been conducted in developed markets to investigate the value relevance of financial statements over time. For example, Collins *et al.* (1997) studied changes in the value relevance of earnings, book value and their combination in American firms over 41 years. They produced three main results. First, the combined value relevance of earnings and book value appears to slightly increase, rather than decline, over time. Second, while the value relevance of earnings declines, the value relevance of book value increases. Third, shifts in the value relevance from earnings to book value appear to be due to increases in the incidence and significance of one-time items, changes in average firm size, intensity of intangibles and increased negative earnings frequency. Likewise, Francis and Schipper (1999) examined the value relevance of earnings and book value in US firms from 1952 to 1994. It appears that, over time, the explanatory power of earnings and alterations in earnings each significantly decreased. However, their test of book value's explanatory power does not show evidence of decline. Unlike Collins *et al.* (1997) and Francis and Schipper (1999), the work of Brown *et al.* (1999) and Lev and Zarowin (1999) – also in the USA – reports declines in the value relevance of book value and earnings over time.

Brown *et al.* (1999) argue that prior studies have not controlled for scale effects and can be misleading. More precisely, they argue that the documented growth in the value relevance of accounting information relates to growth in the coefficient of variation of the scale factor. They find declines in the value relevance of both earnings and book value (measured by R^2) after controlling for these effects.

Using data from US firms between 1977 and 1996, Lev and Zarowin (1999) investigate the value relevance of financial information (earnings, book value and cash flow) relative to all information available. Systematic declines are found in the relationships of key financial variables and capital market values in the 1980s and 1990s. Lev and Zarowin argue that the decline in the usefulness of financial information is because of changes in business practices that primarily stem from deregulation or innovation. The present reporting systems, according to the authors, insufficiently capture the effects of alterations in a firm's environment on its economic condition and operations, leading to mismatches between costs and revenues. To remedy this, they propose that present systems of financial reporting should be altered to accommodate changes in business – either through comprehensive capitalization of all investments, including intangible ones, or a systematic restatement of financial reports.

Brimble and Hodgson (2007), using Australian data, explore whether, between 1973 and 2001, the relevance for valuation of earnings declined. Their study uses refinements of methodology that enable control for transitory features in nonlinear regressions and adjust for possible inefficiencies in the market. Consequently, their results show that the value relevance of accounting earnings was not reduced in the study period. Bepari *et al.* (2013) also examine changes in value relevance in Australian firms in the period before and during the global financial crisis. Their findings indicate that, as a result of operations in the

Australian market, greater relative and incremental information content are found in earnings than in cash flow. Their findings also show that the value relevance of earnings grew and the value relevance of cash flow decreased during the global financial crisis.

One of the most relevant papers that use data from the emerging Kuwaiti market is Alfraih (2016). This researcher examined changes in the value relevance of financial statements created by Kuwaiti-listed companies between 1994 and 2014 and found a significant decline in the value relevance of earnings and book value over the 21-year survey period. Alfraih noted, however, that although the value relevance of earnings and book value declined, the reduction of earnings was deeper and more pronounced than that of book values. Using data from the emerging Chinese market, Lam *et al.* (2013) explored changes in the value relevance of financial statements between 1994 and 2008, when accounting reforms were launched to heighten disclosure and provide higher-quality accounting information. Interestingly, Lam *et al.* found that there were increases in the value relevance of some financial variables and decreases in that of others, indicating that accounting information can partly explain the pricing of shares and stocks at different levels. More recently, Kim and Key (2014) examined changes in the value relevance of earnings and book value in Korean firms for the period 1982–2011. Their findings show growth in the combined value relevance of current earnings and book value for stock prices and incrementally for earnings and book values. King and Langli (1998), investigating European countries, suggested that both book value and earnings are significantly associated with share prices in Germany, Norway and the UK. In addition, they highlighted that the explanatory power of the variables differs across the accounting systems of the three countries. Earnings explain more in the UK than in Germany and Norway but less than book value in Germany and Norway.

In determining whether the value relevance of accounting information grew after the introduction of IFRS, Devalle *et al.* (2010) found mixed evidence for growth in value relevance based on companies sampled from five European stock exchanges – Frankfurt, London, Madrid, Milan and Paris – and document mixed evidence for growth in value relevance. After the introduction of IFRS in Germany, France and the UK, it was observed by Devalle *et al.* (2010) that the influence of earnings on share price grew while book values of equity's influence declined (except in the UK). Likewise, when examining IFRS's impact on the value relevance of accounting information, Maigoshi *et al.* (2017) found the value relevance of book value per shares of listed Malaysian firms, together with related party transactions after IFRS adoption, to be significantly reduced. However, the value relevance of earnings per share in listed Malaysian firms with related party transactions grew after the adoption of IFRS (Maigoshi *et al.*, 2017).

Therefore, although the overall findings for studies of value relevance suggest that both book values (balance sheet information) and earnings (income statements) are value relevant in a developed market, in the US market – at least – their importance has decreased. Studies have demonstrated a growing trend to investigate such changes in developed countries, both Anglo-Saxon and non-Anglo-Saxon (Chamisa *et al.*, 2012). However, little regard has been given to developing markets, where accounting standards and their enforcement are questionable. This study seeks to fill this gap by investigating the topic in the context of Qatar's emerging market.

The value relevance of accounting information in less-developed markets is less than it is in those that are developed (Hellstrom, 2006). The opposite may be true in Qatar, due to the noticeable number of sophisticated investors participating in QSE. However, a lack of credible sources of useful information may imply that financial statements have more influence on the stock market in Qatar than they do in developed countries. The substantial increase in listed companies and participants in the QSE from 2012 to 2016 may have ameliorated the environment for information, leading the QSE to better meet investors' needs. During the

2012–2016 period, the QSE regulator has improved the information environment to better meet current investor needs and attract more investors. Financial statements play a vital role by providing information that is reliable; substantial improvements have been made in the QSE information environment. These changes include the mandatory adoption of IFRS standards which have attracted foreign and sophisticated investors to the QSE. Another is the requirement of immediate disclosure of all financial information that could alter firms' business or financial positions. Therefore, the following is hypothesized:

- H1. The value relevance of the earnings of QSE-listed firms increased during 2012–2016.
- H2. The value relevance of the book values of QSE-listed firms increased during 2012–2016.

4. Model and data

4.1 Model

This study intends to determine the changes in the power of information on earnings and book value to account for prices of shares. These two values are often used as proxies because they are reasonable indicators of two important elements of financial statements: the income statement and the balance sheet. Earnings are assumed to be a proxy for future performance while book values show past performance and capital inputs.

In a review of valuation-based accounting research, Barth (2000) documents Ohlson's (1995) accounting-based model, which includes earnings and book values as variables. This model shows a direct connection between financial statements and company value. Barth (2000) argues that this has resulted in the model becoming the most widely used in valuation-based accounting research. Earlier studies used it extensively (Collins *et al.*, 1997; Barth *et al.*, 1998; Collins *et al.*, 1999; Francis and Schipper, 1999; Lev and Zarowin, 1999; Chamisa *et al.*, 2012; Kim and Key, 2014; Tsalavoutas and Dionysiou, 2014). As in earlier work, we use the model as a framework of valuation to test research hypotheses. One expression for the model is as follows:

$$P_{it} = \beta_0 + \beta_1 \text{EPS}_{it} + \beta_2 \text{BVS}_{it} + \varepsilon_{it}. \quad (1)$$

As in Collins *et al.* (1999), the two following equations are employed to investigate individual relative explanatory powers for earnings and book values:

$$P_{it} = \chi_{00} + \chi_{01} \text{EPS}_{it} + \varepsilon_{it}, \quad (2)$$

$$P_{it} = \delta_{00} + \delta_{01} \text{BVS}_{it} + \varepsilon_{it}, \quad (3)$$

where P_{it} is the stock price per share for firm i at time t , end of the fiscal year at time t ; EPS_{it} the earnings per share of firm i at time t ; BVS_{it} the book value per share of firm i at time t ; $t = 2012, \dots, 2016$, corresponding to the years 2012–2016; ε_{it} the other value relevant information.

Statistical correlations between earnings and book values and stock price are the primary metric for measuring the value relevance of financial statements. If the given variables are value relevant for investors, we expect earnings and the coefficients of book values to be significant. The regression model's explanatory power (R^2) measures that association.

4.2 Data

The sample is drawn from companies listed on the QSE. The QSE was officially established in 1995 and is the newest exchange in the member states of the GCC. The QSE was ranked 2nd to Saudi Arabia's exchange by market capitalization – \$152.2bn – among

Arab countries (The Arab Federation of Exchanges, 2017). By the end of 2016, there were 45 Qatari companies listed on the QSE.

Given the relatively small number of firms listed during 2012–2016, the sample includes all companies for which data on accounting and stock prices are available from the QSE's website. As recommended by Barth *et al.* (1992) and Kothari and Zimmerman (1995), this work uses the per share value of price, earnings and book value to reduce heteroscedastic disturbances and scaling effects. In addition, and once again consistent with the literature, heteroscedasticity in yearly ordinary least squares (OLS) was corrected using White's (1980) heteroscedastic-consistent estimator. Heteroscedasticity and autocorrelation in the pooled OLS was corrected using the Newey and West's (1987) heteroscedasticity and autocorrelation estimator (Table I).

5. Results and discussion

5.1 Descriptive statistics

Descriptive statistics, including the Pearson bivariate correlation coefficients, are presented in Table II. They show that the mean stock price per share for 2012–2016 was Qatar Riyal (QR) 53.40, with a range from QR6.69 to QR218.50. Mean earnings per share were QR4.29, ranging from QR–1.780 to QR17.62. The mean book value per share was QR32.06, ranging from QR3.18 to QR124.87. The Pearson bivariate correlation coefficients presented in the Panel B of Table II provide preliminary evidence that stock price (P_{it}) is positively and significantly ($p < 0.01$) related to earnings (EPS_{it}) and the book value of equity (BVS_{it}). Variance inflation factors (VIFs) were used to detect the existence of multi-collinearity problems among independent variables. The result of VIFs verified the absence of multi-collinearity.

Table III presents the slope coefficients of the pooled cross-sectional time-series regression for Models 1–3, using annual data for the 2012–2016 period. The first column of Table III reports the results of the regressions of price on earnings and book value for Model 1, which shows that this model was statistically significant ($F = 218.93$, $p < 0.01$). The adjusted R^2 indicates that earnings and book value jointly explained 67.1 percent of the variation in stock prices between 2012 and 2016; such evidence is similar to that investigated in some Mediterranean and Europe countries (King and Langli, 1998; Devalle *et al.*, 2010; Ahmadi and

Table I.
Number of companies
listed on the QSE
2012–2016

Year	Number of firms	Cumulative percentage
2012	43	20.0
2013	43	40.0
2014	43	60.0
2015	43	80.0
2016	43	100.0
Total	215	100.0

Table II.
Descriptive statistics
and correlations for
firm-year observations
2012–2016

Panel A: descriptive statistics

Variable	<i>n</i>	Mean	SD	Min.	Max.
Price (P_{it})	215	53.40	43.86	6.69	218.50
Earnings (EPS_{it})	215	4.29	3.92	–1.78	17.62
Book value (BVS_{it})	215	32.06	23.88	3.18	124.87

Panel B: correlation among variables

Variable	Price	Earnings	Book value
Price (P_{it})	1	0.818***	0.681***
Earnings (EPS_{it})	0.818***	1	0.782***
Book value (BVS_{it})	0.681***	0.782***	1

Note: ***Significant at ≤ 0.01 level (two-tailed)

Bouri, 2018). The adjusted R^2 of the yearly cross-sectional regressions of price on earnings and book value ranged from 74.4 percent in 2013 to 59.5 percent in 2016. Annual OLS regressions show that Model 1 performs well in all years, as shown by the positive and highly significant coefficient estimates for earnings but not for book values. F -statistics were highly significant for Model 1. These results consistently support the pooled results of most literature on value relevance in developed and emerging stock markets (King and Langli, 1998; Devalle *et al.*, 2010; Givoly *et al.*, 2013; Alfraih, 2016). Fama and MacBeth's (1973) approach to averaging coefficients and calculating t -statistics was applied as a check of robustness.

Consistent with the results obtained for Model 1, the second and third columns of Table III show that the pooled and yearly OLS regressions for Models 2 and 3 also individually result in positive and highly significant coefficient estimates for earnings and book value.

With respect to changes in the value relevance of earnings and book value over time, Table IV provides summaries of the adjusted R^2 of the yearly cross-sectional regressions of Models 1–3. Consistent with Collins *et al.* (1997), we decomposed total explanatory power into two parts: the incremental explanatory power of earnings and book value. Figure 1 provides a line plot of the changes in the yearly adjusted R^2 of earnings and book value, jointly and individually, over the period. Overall, the graph shows a visible decline over this time for joint and individual value of earnings. This result is consistent with the literature on value relevance in mature and developing markets (Brown *et al.*, 1999; Lev and Zarowin, 1999; Givoly *et al.*, 2013; Alfraih, 2016). Upon closer inspection, the figures suggest that the earnings value declined individually in favor of book values for all years, with the exception of 2015. Alfraih (2016) highlighted a decline in both the value relevance of earnings and book values for equity holders. However, he noted that the decline in the value relevance of earning is sharper and more obvious than that of the book values. This could be affected by the loss of confidence of market participants in the stock market: the exchange witnessed a sharp decline in that year.

Year	Column Model <i>n</i>	1				2		3	
		$P = \beta_0 + \beta_1 \text{EPS} + \beta_2 \text{BVS} + \varepsilon$		$P = \chi_0 + \chi_1 \text{EPS} + \varepsilon$		$P = \delta_0 + \delta_1 \text{BVS} + \varepsilon$			
		$\beta_1 \text{EPS}$	$\beta_2 \text{BVS}$	Adj. R^2_T	F -stat.	$\chi_1 \text{EPS}$	Adj. R^2_{EPS}	$\delta_1 \text{BVS}$	Adj. R^2_{BVS}
2012	215	8.31***	0.063	0.711	52.72***	8.58***	0.717	0.87***	0.317
2013	215	7.65***	0.154	0.744	62.15***	8.39***	0.746	1.09***	0.485
2014	215	9.60***	0.044	0.733	58.51***	9.81***	0.739	1.32***	0.487
2015	215	7.98***	0.268	0.621	35.42***	9.20***	0.625	1.44***	0.471
2016	215	6.76***	0.450	0.595	31.84***	9.02***	0.587	1.36***	0.495
Pooled	215	8.21***	0.193*	0.671	218.93***	9.14***	0.668	1.25***	0.461
Fama–MacBeth averaging		8.06***	0.196*			9.00***		1.216***	

Notes: *, **, ***Significant at 0.10, 0.05 and 0.01 levels, respectively (two-tailed)

Table III.
Pooled and yearly cross-sectional regressions of price on earnings and book value 2012–2016

Year	<i>n</i>	A: adj.	B: adj.	C: adj.	A–C: incremental	A–B: incremental
		$R^2_{\text{EPS and BVS}}$ (jointly)	R^2_{EPS} (individually)	R^2_{BVS} (individually)	earnings	book value
2012	215	0.711	0.717	0.317	0.394	–0.006
2013	215	0.744	0.746	0.485	0.259	–0.002
2014	215	0.733	0.739	0.487	0.246	–0.006
2015	215	0.621	0.625	0.471	0.150	–0.004
2016	215	0.595	0.587	0.495	0.100	0.008
Pooled	215	0.671	0.668	0.461	0.210	0.003

Table IV.
Changes in the yearly adjusted R^2 and the incremental explanatory power of earnings and book value

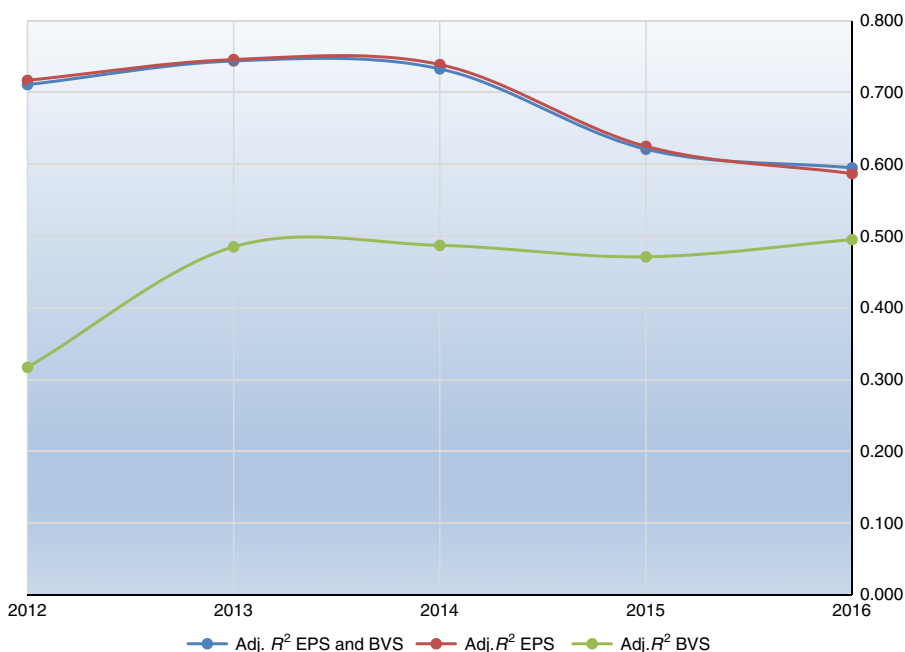


Figure 1.
Trends of value
relevance of earning
and book values

Following Collins *et al.* (1997) and Francis and Schipper (1999), we looked in greater detail at changes in value relevance. Therefore, the adjusted R^2 s obtained from yearly cross-sectional regressions of price on earnings and book value jointly and individually from Models 1 to 3 were regressed on a time-trend variable (TIME), as shown below:

$$R_T^2 = \phi_0 + \phi_1 \text{TIME} + \varepsilon, \quad (4)$$

$$R_{\text{EPS}}^2 = \psi_0 + \psi_1 \text{TIME}_t + \varepsilon, \quad (5)$$

$$R_{\text{BVS}}^2 = \gamma_0 + \gamma_1 \text{TIME}_t + \varepsilon, \quad (6)$$

where R_T^2 , R_{EPS}^2 and R_{BVS}^2 are the adjusted R^2 values obtained from Models 1 to 3, and $\text{TIME} = 1, \dots, 5$, corresponding to the years 2012–2016. Francis and Schipper (1999) argue that the value relevance of earnings and book value is assumed to have increased (decreased) over time if the estimated time coefficient ($\alpha_1 \text{TIME}_t$) is significantly positive (negative) at conventional significance levels. Table V presents these results.

The Column 1 of Table V shows that, after this regression, the earnings and book value of the TIME coefficient (ϕ_1) were negative and statistically significant ($p < 0.05$). This result

Table V.
Regression of R_T^2 ,
 R_{EPS}^2 and R_{BVS}^2 on a
time-trend variable
2012–2016

Column	1			2			3		
	$R_T^2 = \phi_0 + \phi_1 \text{TIME} + \varepsilon$			$R_{\text{EPS}}^2 = \psi_0 + \psi_1 \text{TIME}_t + \varepsilon$			$R_{\text{BVS}}^2 = \gamma_0 + \gamma_1 \text{TIME}_t + \varepsilon$		
	ϕ_0	$\phi_1 \text{TIME}_t$	R^2	ψ_0	$\psi_1 \text{TIME}_t$	R^2	γ_0	$\gamma_1 \text{TIME}_t$	R^2
	0.787**	-0.036**	0.572	0.797**	-0.038**	0.595	0.348**	0.034**	0.352

Note: **Significant at 0.05

suggests a decline in the value relevance of earnings and book value (jointly) in explaining the cross-sectional variation in stock prices over the period. As shown in the Column 2 of Table V, a similarly significant ($p < 0.05$) decline in the value relevance of earnings individually – Model 2 – was revealed by the earnings TIME coefficient (ψ_1). However, the Column 3 of Table V shows that the TIME coefficient (γ_1) for book value – Model 3 – was positive and statistically significant ($p < 0.05$). This finding suggests an increase in the value relevance of book value in stock prices over the period. It differs from that found by Alfraih (2016), who suggested a decline in the value relevance of book values over the period investigated. Interestingly, the current results confirm the findings shown in Table IV and Figure 1 that earnings values individually declined in favor of book values over the period examined. A visual inspection of Figure 1 suggests that the gap of adjusted R^2 between earnings value and book value individually deteriorated from 0.40 to 0.10 in 2012–2016.

6. Conclusion

Using the period 2012–2016, this study examines the value relevance of the financial statements of QSE-listed firms. It is predicted that ameliorations by the regulatory environment of the QSE increased the availability of timely financial information. We anticipated that the improved environment for information would meet current investors' needs and be attractive to new entrants, which would, in turn, improve the value relevance of accounting earnings and book value. Thus, we hypothesized that the value relevance of accounting earnings ($H1$) and book value ($H2$) increased over the period 2012–2016. Following prior research into value relevance, we employed Ohlson's (1995) model as a valuation framework to test our hypotheses.

This study provides empirical evidence that the book values of equity and accounting earnings, both jointly and severally, were significant for stock price explanations in the emerging market of Qatar, suggesting that participants in the QSE relied heavily on this information to make investment decisions. The results for the entire five-year period (2012–2016) do not indicate noticeable declines of book values but do for earnings. However, although the value relevance of both earnings and book value declined, the decline in earnings was deeper and more pronounced than in book values; the current finding is similar to that found in the counterpart exchange of Kuwait (Alfraih, 2016). Interestingly, the literature on financial markets indicates that investors in emerging and frontier markets tend to be functionally fixated on earnings information more than book value information (Hand, 1990). However, the findings of this study suggest the opposite for the QSE. A plausible justification could be related to the noticeable number of sophisticated investors in the QSE. Furthermore, the observed variation of the level of earnings and book value produced by QSE-listed companies supports the argument of Barth *et al.* (1998) that book values and earnings play different roles. Barth *et al.* (1998) suggest that investors place valuation weight on book value or earnings depending on company differences relating to financial health, supporting the notion that book values information and earnings information fulfill different roles. Overall, the finding is not different to the literature on value relevance in developed and emerging markets (King and Langli, 1998; Brown *et al.*, 1999; Lev and Zarowin, 1999; Devalle *et al.*, 2010; Givoly *et al.*, 2013; Alfraih, 2016).

This study has some implications of interest. First, it contributes to research on capital markets – with respect to alterations in the value relevance of information on financial statements – through an empirical examination of emerging capital markets. Second, the results may be put to use by regulators in their assessment of the effectiveness of the current financial reporting environment. They highlight the need for improvements, as better-quality information can assist equity holders to determine value more precisely. The implication of our results highlights Qatar's reforms to improve the information environment of the capital market. These reforms attempt to meet current investor needs

and attracting more investors. The significant roles of accounting information may be attributed to the quality of international standards adopted and enhanced information environment. The findings provide practical implications for the regulators of Qatar's stock market by highlighting the importance of the improvement in the regulatory and informational environment of the QSE through potential alterations in the operations of the exchange. Third, the quality of accounting regulations and the mechanisms that exist to ensure adherence to the prescribed standards are a prerequisite for the value relevance of accounting information. The results of this study show that declines in the value relevance of accounting information are associated with a loss in the confidence of market participants in the reliability of financial statements. Consequently, for regulators and enforcement bodies, the study's findings directly indicate that those entities should focus their efforts on the correctness of financial statements.

Like other studies, this one has limitations that suggest areas for future work. For example, in Qatar, like other emerging markets, a lack of data prevents the performance of deep analysis. Additionally, we only used Ohlson's (1995) model as a framework for evaluation. It would be interesting to explore the changes when applying alternative valuation models. To provide more evidence regarding the change in the value relevance of accounting information, the returns model, as in Easton and Harris (1991), could be used to assess the changes in earnings over time. Second, we examined only two accounting measures: earnings and book values. Further work may find value in highlighting changes in other measures of value relevance, such as cash flow. Finally, although this study provided insight into reductions in the value relevance of financial statements, understanding why this happened is also important. Additional work is required to reveal more underlying issues and the role played by firm-specific characteristics.

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Further reading

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