

The extent of segmental reporting and its value relevance: cross-country evidence

Segmental reporting and its value relevance

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Abstract

Purpose – The purpose of this paper is to examine the extent of segmental reporting disclosure and its value relevance to a sample of Qatari and Jordanian listed companies following the implementation review of the International Financial Reporting Standard (IFRS) 8. This was the first standard to be subjected to a post-implementation review. Annual reports are initially analyzed to investigate the level of segmental information that was published by companies in these two countries.

Design/methodology/approach – Using the Ohlson (1995) model, the study employs regression analysis to test the hypotheses relating to the value relevance of the segmental disclosures uncovered. In addition, one-way ANOVA and Kruskal-Wallis tests are used to investigate any variation in segmental reporting among sectors.

Findings – The findings indicate that the amount of segmental information disclosed by the sample firms differs across sectors. Moreover, the segmental information provided (including the number of segments and the amounts of disclosure) is value relevant and can explain the variations in firms' share prices.

Practical implications – The results of the current investigation have implications for policy makers, including the International Accounting Standards Board, as well as for accounting regulators in Jordan and Qatar. They suggest that the segmental disclosures supplied under IFRS 8 are value relevant for equity prices in a developing country context. Compliance with IFRS 8 should thus be monitored to ensure that all firms provide the segmental disclosures that they are meant to supply under the terms of the standard.

Originality/value – This paper is one of the few to provide empirical evidence on the role of segmental reporting following the post-implementation review that was conducted for IFRS 8.

Keywords Emerging economies, Value relevance, IFRS 8, Segments, Cross-country, Segmental reporting

Paper type Research paper

1. Introduction

The International Accounting Standards Board (IASB) issued International Financial Reporting Standard (IFRS) 8 in November, 2006, as part of its convergence project with the Financial Accounting Standards Board (FASB)[1]. IFRS 8 became effective in the periods beginning on or after January 1, 2009 (Mardini *et al.*, 2012). IFRS 8 is largely equivalent to the US standard on segmental reporting (Financial Accounting Standard (FAS) No. 131) (Mardini *et al.*, 2013). In line with FAS 131, IFRS 8 adopts a management approach that allows companies to determine the number of segments about which they should provide information, as well as the disclosures for each segment that is to be included in their annual reports, based on data supplied to the chief operating decision maker (CODM) within their organization. Prior to IFRS 8, the previous standard for this topic (International Accounting Standard No. 14 (IAS 14R)) had supplied detailed guidance on how a segment was to be defined for reporting purposes, and it specified a list of items that had to be provided for each identifiable segment (IASB, 1997).



The IASB initiated a post-implementation review of IFRS 8 in 2012 to determine whether or not the new standard was functioning as intended (International Accounting Standards Board (IASB), 2013). This post-implementation review also gathered empirical evidence about the usefulness of segmental reporting information that was prepared in accordance with the requirements of IFRS 8's management approach. However, the review staff found that the implications of the new segmental reporting standard had not been the subject of a great deal of empirical research – especially outside of Western Europe and Australia. Specifically, they concluded that, “current academic studies have generally not considered the usefulness of IFRS 8 based on the management approach” (IASB, 2013, p. 7). One of the main objectives of the current paper is to address this gap in the literature by examining the usefulness of segmental information prepared under IFRS 8 in developing countries by using a value relevance approach. In particular, we examine whether segmental information has enhanced the fundamental characteristics of useful accounting information by testing its association with share prices for listed companies in both Jordan and Qatar (Emmanuel and Garrod, 2002; Francis *et al.*, 2003; Al Jifri and Citron, 2009; Birt and Shailer, 2009; Shu-hsing *et al.*, 2012; IASB, 2013; Hamberg and Beisland, 2014; Badenhorst *et al.*, 2015; Rahman, 2016; Nurul Houqe and Monem, 2016; Gotti, 2016; André *et al.*, 2016).

Over the last few decades, Jordan and Qatar have experienced significant changes in their financial and economic environments (Hossain and Hammami, 2009; Al-Akra *et al.*, 2010; Abu Ghazaleh *et al.*, 2012). For instance, the Jordanian Government has implemented several economic reforms in order to enhance private sector activity, to develop the economy and to attract foreign investment; it established the Amman Stock Exchange (ASE) in 1999 and introduced a comprehensive set of business laws. These, and other changes, have been associated with an increase in equity trading volumes and a rise in the number of foreign investors who own shares in Jordanian listed companies (Tahat *et al.*, 2016; Haddad *et al.*, 2017). Similarly, the state of Qatar has experienced a great deal of economic development over the last few years – and more changes are planned for the future (AlNaimi *et al.*, 2012; Al-Mannai and Hindi, 2015; Mardini *et al.*, 2017). In particular, diversification via the expansion of economic activity into non-oil related industries is highlighted as one of the major goals within the 2030 Qatari development plan. In order to facilitate economic development in the two countries, both the Jordanian and Qatari Governments have introduced a number of business laws, including the Jordanian Securities Laws in 1997 and 2002, as well as the Qatari Companies Law of 2002. These laws mandated publicly listed companies to apply IASs/IFRSs when preparing their annual reports. The two countries thus provide interesting environments in which to investigate the value relevance of segmental reporting under IFRS 8. Although both are developing countries, they have well-functioning and organized capital markets (Al-attar and Al-Khater, 2007; Hossain and Hammami, 2009; Al-Akra *et al.*, 2010; Mardini *et al.*, 2013; Haddad *et al.*, 2017; Mardini and Tahat, 2017). In addition, both have mandated the use of IFRS/IAS by listed companies for more than 15 years. Investors in the two countries should thus have been aware of the transition from IAS 14R to IFRS 8 in January, 2009, and the subsequent post-implementation review of the new accounting standard on segmental disclosures.

This paper provides a number of contributions. First, it extends the extant literature, which has mainly focused on developed economies, by providing empirical evidence on the decision usefulness of segmental data under IFRS 8 in the emerging market nations. Specifically, studies on the value relevance of segmental and other disclosures have largely focused on US companies. Hence, investigating this issue for Jordanian and Qatari firms may yield different results, since the capital markets of these two countries differ significantly from the market in the USA, in terms of size, investor sophistication and analyst coverage of equities. In particular, the market capitalization and the number of the listed firms is much larger in the USA, and the size of the analyst community is greater (Al-Attar and Al-Khater, 2007; Mardini and Almujaed, 2015; Haddad *et al.*, 2017).

The findings of this research is of interest to accounting regulators – especially the IASB – as the current study comes after the latest review of IFRS 8, which noted that extant evidence about the new standard emanated primarily from developed countries.

Second, the extent of shareholders' reactions to the information produced under the management approach of IFRS 8 may have implications for the efficiency of capital markets and regulatory authorities. For example, if the segmental information provided under IFRS 8 is not value relevant for share prices, a case can be made for a change in the IASB's segmental disclosure requirements. Furthermore, the current investigation provides cross-country evidence on the value relevance of segmental reporting that should allow more general conclusions to be drawn from the results. Indeed, the economic growth of the two countries investigated (Jordan and Qatar) is strongly influenced by the efficiency of their securities markets (ASE and Qatar Exchange (QE)) which are the key sources of finance for businesses (Al-Attar and Al-Khater, 2007; Hossain and Hammami, 2009; Al-Akra *et al.*, 2010; Haddad *et al.*, 2017; Mardini and Tahat, 2017). In addition, the economies of Jordan and Qatar are influenced by the export and import activities of multi-activity firms, due to the relatively small demand for certain goods and services with these countries. Segmental disclosures for such companies should thus be of interest to investors when they are assessing these firms' future prospects.

Third, Jordan and Qatar adopted IASs/IFRS in 2002, and this long time span suggests that both the providers and users of financial statement disclosures in both countries should be familiar with IASs/IFRSs requirements – including the management approach of IFRS 8. Hence, choosing such countries for the current investigation contributes to the existing literature by analyzing the impact of the standard in an emerging market setting, which should be familiar with the pronouncements of the IASB following the completion of the post-implementation review. Finally, studies in this area tend to emphasize the financial sector in their investigations and non-financial firms are often ignored (Birt *et al.*, 2017). The current study adopts a more comprehensive approach that includes both financial and non-financial companies in the sample.

The remainder of this paper is organized as follows: Section 2 outlines the financial reporting frameworks in Qatar and Jordan, while Section 3 reviews the literature and develops the research hypotheses. Section 4 describes the research methodology. Section 5 outlines the results and discusses the findings. Finally, Section 6 concludes the paper and identifies opportunities for future investigation.

2. Financial reporting framework of Jordan and Qatar

2.1 Jordan

The legal framework underpinning financial disclosure in Jordan is characterized by several company and security laws that have been enacted over the last few decades (Al-Akra *et al.*, 2010; Mardini *et al.*, 2012; Abu Ghazaleh *et al.*, 2012). Specifically, the first Company Act was issued in 1964, and it listed some general guidelines for the preparation of financial statements. Later, Ministry of Economy and Commerce (1989), expanded on the financial disclosure requirements, with which companies had to comply, and these included the publication of a balance sheet and the income statement prepared under the Generally Accepted Accounting Principles (GAAP). Even though this Act required Jordanian companies to prepare their financial statements in accordance with GAAP, it did not specify which GAAP was to be used (Al-Akra *et al.*, 2010; Al-Htaybat *et al.*, 2011). In 1997, Securities Law No. 22 was introduced; it was a turning point in terms of financial reporting regulation in Jordan. In addition, it led to the establishment of the ASE and the Jordanian Securities Commission (JSC). This Law covered a wide range of issues relating to financial disclosure requirements; it clearly argued that "Jordanian listed companies' financial statements should be prepared in accordance with IASs/IFRSs" (Article No. 46).

Five years later, Securities Law No. 76 reiterated that Jordanian listed companies should apply IASs/IFRSs when preparing their financial statements, with penalties (including fines and the threat of delisting) being put in place for non-compliance. Briefly, the securities law provided additional guidance on financial reporting, auditing and accounting standards. Moreover, the law sought to protect the rights of shareholders and to highlight the responsibilities of the company management, as well as the board of directors. This law also mandated that all listed companies should comply with the IAS/IFRS disclosure requirements.

In the 2000s, the Jordanian Government introduced a new business plan, which sought to attract additional foreign investment to the country by establishing duty-free zones, signing free trade agreements with other countries, and launching qualifying industrial zones. In 2014, the Jordanian Government continued its attempts to attract foreign investment into the country (Investment Law No. 30 was issued). These attempts simplified licensing procedures for foreign investments in the Kingdom, and it enabled investor queries to be dealt with promptly. Prior studies have concluded that these regulatory changes have shifted the legal framework in Jordan toward a common law system that protects the rights of investors and promotes the role of the equity capital market, as well as foreign investments, as a source of corporate funding (Al-Akra *et al.*, 2010; Al-Htaybat *et al.*, 2011; Haddad *et al.*, 2017).

2.2 Qatar

The legal framework for financial reporting in Qatar is based on company laws and the stock exchange listing requirements that have been issued over the last few decades (Al-attar and Al-Khater, 2007; Hossain and Hammami, 2009; Al-Mannai and Hindi, 2015; Mardini *et al.*, 2017). Specifically, the Ministry of Economy and Commerce (MEC) issued Company Law No. 11 of 1981, and this law mandated that companies operating in Qatar prepare a statement of financial position and an income statement annually. However, the law did not specify the detailed content of these two financial statements; it was also silent, in relation to which GAAP was to be followed in the preparation of these financial statements. The MEC introduced the Doha Securities Market Law No. 14 in 1995, and that led to the establishment of the Doha Securities Market in 1997. The key law underpinning companies' financial disclosures in Qatar was issued in 2002 – Companies Law No. 5. This law clearly stated that listed companies should comply with IASs/IFRSs when preparing their financial statements and determining the contents of their annual reports. As a result, companies were required to provide investors and other users with more timely, relevant and detailed financial statement information. It also changed the title of the stock market to the QE. In addition, the MEC issued Investment Law No. 13, which regulated foreign investor participation in the capital market of Qatar. In 2010, Investment Law No. 1 expanded the role that foreign investors could play in the country; it allowed full foreign ownership of business activities. The establishment of the QE, and other changes in the country's legal systems encouraged many foreign companies to relocate their operations to the country, or to establish regional branches in the capital city – Doha (Qatar Exchange, 2009; Al-Mannai and Hindi, 2015; US Department of State, 2017; Mardini *et al.*, 2017).

2.3 Summary

In summary, Jordan and Qatar provide interesting research settings in which to investigate the value relevance of segmental reporting under IFRS 8. For instance, the users of financial statements in the two countries should be familiar with IASs/IFRSs. Moreover, Jordan and Qatar have well-functioning stock markets that have attracted foreign investors from all over the world who may be familiar with IASs. In addition, the business environments of the two countries are characterized by relatively small domestic markets for goods and services and few natural resources; the export and import activities of multi-activity firms

throughout the financial, manufacturing and services sectors are therefore relatively more important in the two countries.

This is especially true of the Jordanian phosphate and potassium industries and the Qatari oil and gas sector. Investors in these countries may find segmental disclosures by Jordanian and Qatari firms to be value relevant.

3. Literature review and hypotheses development

IFRS 8 is similar to its equivalent US standard, FAS 131, with only some minor differences. Specifically, the IASB has noted the following differences between IFRS 8 and FAS 131. First, IFRS 8 requires the disclosure of information about segmental liabilities if they are regularly reviewed by the entity's CODM, and this information is not required under FAS 131. Second, IFRS 8 requires an entity to determine its operating segments by reference to the core principles of IFRS 8; specifically, it is less restrictive than FAS 131, where "a matrix form of analysis based on an entity's products and services is required [...] to determine the operating segments of US companies" (International Accounting Standards Board (IASB), 2006a, para. BC60). Under FAS 131, therefore, entities can use a matrix form to represent their organization's structure; and the analysis of performance by products and services can be one dimension of this matrix, while the analysis by geographical area can be the other dimension. IFRS 8 requires "operating" segments to be identified in accordance with the management approach. Specifically, operating segments are to be identified based on internal reports that are "[...] regularly reviewed by the CODM to make decisions about resources to be allocated to the segment and assess its performance" (IASB, 2006a, para. 5). In addition, IFRS 8 requires entity-wide disclosures about the major clients, products and services and geographical segments (revenue and assets geographical segmental information).

In recent decades, the emphasis on the decision usefulness of accounting information has increased; specifically, regulators tend to mandate the disclosure of the information that is required by users in their decision-making processes (Mardini *et al.*, 2012). However, prior studies have found that the information supplied under IFRS 8 may not be useful to users since it does not meet their decision-making needs. Under IFRS 8, managers may restrict the publication of information if they do not consider such disclosure to be in their own interest (Hossain and Marks, 2005). As a result, a gap may exist between the actual and expected usefulness of segmental information – and there may be a difference between expected and actual segmental disclosures due to the principal-agent problems, which may be present. Prior US-based studies have not uncovered any difference between actual and expected segmental disclosures when investigating the usefulness of information supplied under the US standard on segmental reporting – FAS 131. These studies have argued that useful segmental disclosure reduces the information gap between management and outsider investors, enhances the market value of the firm, lowers a company's capital costs and increases the liquidity of the whole stock market (Herrmann and Thomas, 2000; Botosan and Stanford, 2005; Hossain and Marks, 2005; Hope *et al.*, 2008). In their analysis of the economic consequences of segmental reporting, both Ettredge *et al.* (2005) and Botosan and Stanford (2005) found that the segmental information reported under (the management approach of FAS 131 increased the equity returns of the disclosing firms. The data also enhanced the ability of the market to forecast and assess the likely persistence of future earnings. Botosan and Stanford (2005) found that FAS 131 improved the monitoring environment of listed firms, since segmental information available to the public was published from the perspective of management, and investors get to see the information that was supplied to the CODM.

At the time of IFRS 8's adoption, a number of commentators in the European industry expressed concerns about the possible reduction in the quality, the quantity and the value of segmental information that would be published under the new standard – relative to that which had been published under IAS 14R (Financial Reporting Review Panel, 2010;

Crawford *et al.*, 2010][2]. The European Commission (2007) concluded that the benefits of adopting IFRS 8 for European listed firms exceeded the concerns raised by commentators. As a result, the European Stock Market Authority ESMA (2011) and the European Parliament endorsed the standard for use within the EU in 2009, but they required a post-implementation review of IFRS 8 to be conducted within two years of its implementation.

Wallace *et al.* (1994) have argued that a company's sector can affect the corporate reporting culture of its constituent companies and they suggested that policies on financial information disclosure differ across sectors. In fact, the extant literature has provided mixed evidence about the impact of the relevant industry on the extent of corporate disclosure. For example, Cooke (1989) found that manufacturing companies disclosed more information than their counterparts in other sectors. Indeed, the extant literature on corporate disclosure, in general, and on segmental disclosure, in particular, has focused on whether there is a relationship between corporate disclosure and industry sector. The current study goes beyond this focus by analyzing the differences in the behavior of segment-related information across industries. In this discussion, the first hypothesis examines the level of segmental information that is supplied by companies across sectors, as follows:

H1. Segmental information provided by Qatari and Jordanian listed firms varies across sectors.

Prior empirical evidence on the value relevance of segmental reporting under (the management approach of) FAS 131 is relatively scarce; the only exceptions to this generalization relate to a few studies that were published before 2010 (Chen and Zhang, 2003; Hossain and Marks, 2005; Hossain, 2008; Hope *et al.*, 2008). For instance, Chen and Zhang (2003) found that the value relevance of segmental details about profit and growth increased under this management approach. Hossain and Marks (2005) reported that information about inter-segment sales was more value relevant under this management approach. Moreover, they discovered that the shareholders considered external sales when making their equity valuation decisions. Hope *et al.* (2008) found that the share price returns to the future earnings in multinational companies increased under FAS 131 when this management approach was employed. Most recently, several studies have examined the value relevance of IFRS 8 disclosures. For instance, Kajuter and Nienhaus (2017) investigated the value relevance of segment reports for German listed firms. They found that the amount of segmental information declined under IFRS 8, but the disclosures provided were value relevant. Birt *et al.* (2017) have also examined the value relevance of segmental reporting – only for Indian banks – and found that the number of segments for which disaggregated information was supplied was value relevant and was associated with higher share prices. The current study extends the literature by investigating the value relevance of segmental reporting following the post-implementation review of IFRS 8 across sectors and countries. Hence, the study tests the following two hypotheses:

H2. The number of segments disclosed by Jordanian and Qatari listed firms is value relevant and can explain share prices.

H3. The amounts of segmental information disclosed by Jordanian and Qatari listed firms are value relevant and can explain share prices.

4. Research methodology

4.1 Sample

The current research examines the value relevance of segmental reporting over a two-year period (2013 and 2014) after the IASB's post-implementation review of IFRS 8 in 2012. The initial sample included all of the companies listed on the ASE (240 firms) and QE (42 firms) (see Footnote No. 1). However, some of these companies were excluded

for a variety of reasons. First, the second (139 companies) and third (39 companies) markets in Jordan involve small- or medium-sized (i.e. family-owned) entities, whose shares are not actively traded in the ASE and their annual reports are often incomplete. The number of transactions in these firms' securities is quite small if compared to the first market (Amman Stock Exchange, 2014). The demand for segmental information about such firms by outside shareholders is thus likely to be low (Mardini *et al.*, 2012). Moreover, these companies may only sell/produce one product, or may provide one service and operate locally. As a result, they may not disclose any segmental information in their annual reports (Mardini *et al.*, 2013; Mardini *et al.*, 2015). Second, the insurance sector for both countries (ASE first market: seven companies; QE: five companies) was excluded from the sample, since the Jordanian and Qatari National Insurance Regulatory Commissions issue specific instructions for this sector in relation to the implementation of IAS/IFRS. In addition, some companies were excluded if they have one product/service and no segmental information in their annual reports. Panel A of Table I shows that the final sample consisted of 35 Jordanian and 22 Qatari listed companies which provided segmental information in their annual reports; a total of 114 firm-year observations are used across the two countries. Panel B of Table I illustrates the spread of companies in the final sample across the different sectors (financial, manufacturing and services).

4.2 Valuation model and its theoretical link

A decision-usefulness approach is adopted as the theoretical framework underpinning the current study. In this approach, corporate disclosures are attempts to dissipate informational asymmetries between firms and external agents, primarily those agents in the investment community (Gray *et al.*, 1995). A number of measures have been highlighted in the accounting literature as being proxies for the usefulness of information. First, the perceptions of the users and preparers of accounting information are often considered important when assessing whether financial information is useful in aiding their investment, and in other decisions (Bovee *et al.*, 2009). Alternatively, views can be ascertained indirectly by examining the impact of stakeholder actions following the publication of the information on the important variables that are observable by researchers. One such variable is the share price, which should be affected by the supply and demand for shares as investors alter their portfolios following the disclosure of decision-useful financial statement information. Market-based accounting

Panel A: Sample selection

	ASE	QE	Total
Population	240	42	282
Less:			
Second and third markets	(178)	n/a	(178)
Insurance (excluded)	(7)	(5)	(14)
Non-segmental information	(20)	(15)	(46)
Final sample	35	22	57
No. of observations	70	44	114

Panel B: Final sample per sector

	ASE	QE	Total
Financial	14	12	26
Manufacturing	10	3	13
Services	11	7	18
Final sample	35	22	57
No. of observations	70	44	114

Note: This table illustrates how the final sample of the current study was arrived at

Table I.
Sample

research is thus one of the most commonly used ways of assessing the usefulness of publicly available accounting information (Ball and Brown, 1968). In this respect, Beattie (2005) has indicated that market-based accounting research represents a distinct area of financial accounting research, and it allows the decision-usefulness approach to financial information to be investigated.

The current study examines the usefulness of accounting information by investigating the value relevance of the segmental disclosures that are provided by Jordanian and Qatari listed firms. In this regard, the value relevance of accounting disclosure is considered one of the basic determinants of useful information (Francis *et al.*, 2004). It is measured as the ability of financial statement information to convey news that influences share prices (Francis and Schipper, 1999). The IASB identified two fundamental qualities for useful accounting information, namely, its relevance and faithful representation. Indeed, both accounting regulators (the IASB and FASB) and the extant accounting literature agree that relevance and reliability (faithful representation) are the basic characteristics of useful accounting information (Barth *et al.*, 2001; Financial Accounting Standards Board, 2006; International Accounting Standards Board, 2006b). For example, Sloan (1999) has argued that relevant information should be capable of making a difference in user decisions, while reliable information should be representationally faithful, verifiable and neutral. In this regard, Barth *et al.* (2001) have indicated that value relevance analysis is generally a joint test of both the relevance and reliability of financial statement information. They argued that value relevance research attempts to operationalize the key dimensions of the accounting regulators' stated theoretical framework in order to assess the relevance and reliability of accounting information.

The main objective of the current study is to examine the value relevance of segmental reporting after the post-implementation review of IFRS 8. The Ohlson (1995) model is used for this purpose; this model has been widely employed by many empirical studies in both developed and developing countries (Ahmed *et al.*, 2015; Tahat *et al.*, 2016; Tahat and Alhadab, 2017). It aims to measure the value relevance of information by looking at the changes in a company's market value following the publication of the information. Ohlson (1995) developed the model based on three primary assumptions; namely, the value of equity is equal to the present value of expected future dividends; a clean surplus occurs which means that all changes in assets and liabilities go through the income statement; and a linear information dynamic characterizes reality. This dynamic can be defined as current earnings minus the risk-free rate times of the beginning-of-period book value (Ohlson, 1995)[3].

Based on these three assumptions, Ohlson (1995) developed his model, which comprises a number of interrelated equations. In Ohlson's valuation model, the market value of a firm can be viewed as a weighted average of earnings and book value; the model can be expressed as:

$$P_{it} = a_0 + a_1 BV_{it} + a_2 Earnings_{it} + \varepsilon_i \quad (1)$$

where P_{it} is the market value at the year end (t) for firm (i), BV_{it} is the book value of equity at year end (t) for firm (i) and $Earnings_{it}$ represents the earnings for year t that are available to firm i 's ordinary shareholders.

In order to avoid any bias from the variations in firm size, all of the variables in this model are scaled by the number of shares outstanding. Further, in order to overcome any problem with non-normality due to the relatively small sample being studied, the dependent variable (SP90) is transformed into a logarithmic value. Hence, the model becomes:

$$\text{LogSP90}_{it} = a_0 + a_1 BVPS_{it} + a_2 EPS_{it} + \varepsilon_{it} \quad (2)$$

where $LogSP90_{t,i}$ is the logarithm of the stock price 90 days after the end of financial year t for entity i ; $BVPS_{t,i}$ is the book value of the equity in year t for entity i deflated by the number of shares outstanding; and $EPS_{t,i}$ is the income in year t for entity i deflated by the number of shares outstanding.

In order to examine the value relevance of segmental reporting, a number of equations are formed based on Equation (2). First, in order to test $H2$, Equation (3) examines the association between firms' share prices and the number of segments they have disclosed (NSD):

$$LogSP90_{it} = a_0 + a_1BVPS_{it} + a_2EPS_{it} + a_3NSD_{it} + \varepsilon_{it} \quad (3)$$

In addition, the current study examines the value relevance of the contents (amounts) of the segmental information disclosed by the sample firms ($H3$). This includes a number of variables that are typically supplied as part of segmental reports, such as income/loss for each segment per share (SNIPS); assets for each segment per share (SAPS); liabilities for each segment per share; the book value of equity for each segment per share (SBEPS); and the number of segments reporting a loss (SLO). Accordingly, the following equation was developed as:

$$LogSP90_{it} = a_0 + a_1BVPS_{it} + a_2EPS_{it} + a_3NSD_{it} + \varepsilon_4SAPS_{it} + a_5SLPS_{it} + a_6SBEPS_{it} + a_7SLO + a_8SNIPS_{it} + \varepsilon_{it} \quad (4)$$

5. Results and discussions

5.1 The extent of segmental reporting across sectors

In terms of Jordanian segmental information, Table II shows that the NSD ranged from 2 to 7, and this variable had a median (mean) of 2.2 (2.0), with a very low standard deviation of 2 over the two years. It indicates that the number of segments for which information was disclosed did not vary a great deal among the sample firms. The results for Qatari listed firms were relatively similar; NSD ranged from 2 to 6, with a median (mean) of 2.2 (2.0) and a standard deviation of 2 for the two periods (see Panels C and D). Table II also provides descriptive information relating to the segmental accounting data supplied for each segment across both the Jordanian and Qatari listed firms over the two periods; specifically, details about income, assets, liabilities and the book value of equity are summarized. For example, Panel A of Table II reveals a median (mean) of 7.5 (7.0) for SNIPS in 2013, as compared to a median (mean) of 6.3 (6.5) in 2014 (Panel B). In addition, Panel C of Table II shows that the SAPS variable had a median (mean) of 2.6 (2.5) in 2013, as compared to a median (mean) of 2.8 (3.0) in 2014 (Panel D).

Table III reports the results of the sectoral analysis of segment-related disclosure (financial, manufacturing and services sectors) using both parametric (one-way ANOVA test) and non-parametric tests (Kruskal-Wallis test). An analysis of Panels A and B (Jordan segments) of Table III reveals that NSD, SNIPS and SAPS are significantly different across sectors with F -statistics (χ^2 values) of 9.046 (21.166), 3.23 (0.279) and 1.213 (2.807) and p -values of less than 0.05. Other variables showed no statistically significant differences in segmental reporting among sectors (SLPS and SBEPS). With respect to the Qatari segments, Panels C and D show that both the NSD and SNIPS variables are significantly different across sectors with F -statistics (χ^2 values) of 3.862 (3.634) and 0.606 (0.6) and p -values of less than 0.05. A further visual analysis of Table III reveals that segmental practices in Jordan and Qatar are consistent, since NSD and SNISP were statistically different across sectors in the two countries, while no significant differences were uncovered for SLPS and SBEPS. The only exception to this generalization relates to the SAPS variable; this was statistically different among sectors in Jordan, but not in Qatar. Hence, there is some support for $H1$, since segmental reporting is significantly different across industries for certain variables.

Variables	Median	Mean	Min.	Max.	SD
<i>Panel A: Jordanian firms in 2013</i>					
Log SP90	3.2	3.5	0.28	26.80	4.20
NSD	2.0	2.2	2.00	7.00	2.00
BVPS	300	294	0.45	3,561.00	686.40
EPS	25	23.5	-1.90	540.50	77.00
SNIPS	7.0	7.5	-6.73	44.57	12.39
SAPS	3.0	2.9	1.00	12.10	2.60
SLPS	2.0	1.9	0.300	11.17	1.90
SBEPS	54	54.5	7,575.50	6,830.42	1,295.00
<i>Panel B: Jordanian firms in 2014</i>					
Log SP90	3.3	3.40	0.30	17.60	3.53
NSD	2.0	2.20	2.00	7.00	2.00
BVPS	360	366	0.32	5,656.00	993.50
EPS	35	37	-3.12	654.80	113.00
SNIPS	6.5	6.3	-10.60	44.20	12.60
SAPS	3.0	2.9	1.00	12.50	1.40
SLPS	2.0	1.9	0.33	11.50	1.50
SBEPS	580	578.5	8915.80	56573.90	6161.00
<i>Panel C: Qatari firms in 2013</i>					
Log SP90	68.0	68.0	11.88	246.90	58.33
NSD	2.6	2.5	2.00	6.00	2.00
BVPS	50	47.5	7.30	218.30	46.12
EPS	5.0	5.0	-0.81	18.20	4.85
SNIPS	11.5	11.3	-0.93	35.60	5.70
SAPS	2.5	2.6	1.04	8.250	3.10
SLPS	1.5	1.5	0.40	7.25	2.50
SBEPS	800	806	-236.70	27,345.00	4,034.00
<i>Panel D: Qatari firms in 2014</i>					
Log SP90	73	72.90	10.56	218.0	57.90
NSD	2.4	2.3	2.00	6.00	1.95
BVPS	52	49.5	6.79	277.80	53.40
EPS	5.5	5.3	-0.98	14.36	4.50
SNIPS	46	45.5	115.80	2,745.10	150.00
SAPS	3.0	2.8	1.04	8.25	3.00
SLPS	1.5	1.6	0.40	7.25	2.50
SBEPS	875	872	-231.40	2748.00	4311.00

Notes: This table provides descriptive analysis about the variables used in this paper including the median, mean, minimum, maximum and SD. Log SP90 refers to stock price 90 days after the end of financial year; NSD refers to the number of reported segments; BVPS reports the book value of equity per share; EPS refers to the firm's earning per share; SNIPS refers to the net income per share for each business segment; SAPS refers to the assets per share for each segment; SLPS refers to the liabilities per share for each segment; SBEPS refers to the book value of equity per share for each segment. SLO refers to the loss of segments as a dummy variable where the value of 1 given if the segment reported a loss and 0 otherwise

Table II.
Descriptive statistics
of variables examined
in the study

This finding indicating that the management approach of IFRS 8 may have encouraged companies in different industries to vary the segment-related information that they provided in order to meet the needs of their financial statement users, including capital market participants (Maines *et al.*, 1997; Hope *et al.*, 2008).

5.2 The value relevance of segmental reporting

This section examines the association between the share prices of Jordanian and Qatari listed firms, and the segment-related information that was disclosed in their annual reports in the years 2013 and 2014.

Variables	Mean/Median ^a			F-statistics
<i>Panel A: One-way ANOVA analysis of the number of segments disclosed by industry (Jordan)</i>				
	F	M	S	F-statistics
NSD	3.70	1.30	1.68	9.04**
SNIPS	9.13	0.40	10.80	3.23**
SAPS	5.1	1.5	2.9	1.21*
SLPS	4.1	0.46	1.35	9.09
SBEPS	90.80	-55.90	95.20	12.72
<i>Panel B: Kruskal-Wallis analysis of the number of segments disclosed by industry (Jordan)</i>				
	F	M	S	χ^2
NSD	3.8	1.5	1.7	21.166**
SNIPS	9.0	0.5	10.0	0.279*
SAPS	5.0	1.5	3.0	2.807*
SLPS	4.0	0.45	1.35	1.949
SBEPS	90	-50	95	0.237
<i>Panel C: one-way ANOVA analysis of the number of segments disclosed by industry (Qatar)</i>				
NSD	3.41	1.63	1.64	3.86*
SNIPS	4.70	9.40	66.00	0.60*
SAPS	4.125	1.55	2.1	1.00
SLPS	3.125	0.55	1.1	0.93
SBEPS	64.10	6.50	53.50	2.10
<i>Panel D: Kruskal-Wallis analysis of the number of segments disclosed by industry (Qatar)</i>				
	F	S	M	χ^2
NSD	3.5	1.6	1.6	3.634**
SNIPS	5.0	10	65	0.866**
SAPS	4.0	1.5	2.0	1.030
SLPS	3.0	0.5	1.0	6.078
SBEPS	65	6.5	50	2.838

Notes: ^aRefers that mean statistics are reported with one-way ANOVA test, while median ones are reported with the Kruskal-Wallis test. This table provides an industrial analysis for segmental reporting made by Jordanian and Qatari listed firms across the sectors examined in the current study. NSD refers to the number of reported segments; SNIPS refers to the net income per share for each business segment; SAPS refers to the assets per share for each segment; SLPS refers to the liabilities per share for each segment; SPEPS refers to the book value of equity per share for each segment. The difference of means is calculated as the difference between variables' means. F is for the finance sector, M is for manufacturing and S is for the service industry. *,**Significant at 5 and 1 percent levels, respectively

Table III. Sector analysis of the number of segments disclosed (one-way ANOVA Test)

Prior to conducting the value relevance analysis, a correlation test was performed to examine the association between the share prices and the independent variables, and among the different independent variables, to see if multicollinearity is present. Table IV reports the Pearson correlation coefficients for the variables that were examined in the current study. A visual inspection of Table IV reveals that a majority of the variables examined are positively correlated; however, no high coefficients are documented. Panel A of Table IV (Jordanian data) shows that SNIPS and SP are statistically and positively correlated with each other, with a coefficient of 0.480. BVPS and SP also have a significant association, with a coefficient of 0.390. In addition, Panel B of Table IV (Qatari data) shows that the highest correlation is between SAPS and BVPS, with a coefficient of 0.698[4]. Accordingly, collinearity is not a problem in the current analysis. Nevertheless, the study tested for the presence of collinearity when estimating the regression equations by calculating the variance inflation factor (VIF); a value of greater than 10 indicates that a significant amount of collinearity may be present (Tahat *et al.*, 2016). An analysis of Tables V and VI indicates VIF values of between 1 and 5, confirming that multicollinearity is not an issue when interpreting the regression equations.

	SP	NS	BVPS	EPS	SIPS	SAPS	SLPS	SBVPS	SLO
<i>Panel A: Correlation coefficients of Jordan</i>									
Log SP90	1.00								
NSD	0.249*	1.00							
BVPS	0.468*	0.167	1.00						
EPS	0.492*	0.257*	0.167*	1.00					
SNIPS	0.480*	0.283*	0.452*	0.257	1.00				
SAPS	0.392	0.400*	0.393*	0.283*	0.539*	1.00			
SLPS	0.497*	0.193*	0.578	0.194	0.560*	0.392	1.00		
SBVPS	0.387*	0.167	0.397*	0.167*	0.151	0.286*	0.252*	1.00	
SLO	0.194*	0.174*	0.209*	0.174*	0.183*	0.393*	0.215*	0.0136*	1.00
<i>Panel B: Correlation coefficients of Qatar</i>									
Log SP90	1.00								
NSD	0.117*	1.00							
BVPS	0.262*	0.272*	1.00						
EPS	0.381*	0.193*	0.526*	1.00					
SNIPS	0.557*	0.154*	0.542*	0.388*	1.00				
SAPS	0.428*	0.233*	0.698*	0.281*	0.186*	1.00			
SLPS	0.103*	0.211*	0.675*	0.590*	0.169*	0.319*	1.00		
SBEPS	0.319*	0.570*	0.443*	0.401*	0.421*	0.382*	0.306*	1.00	
SLO	0.350*	0.168*	0.095*	0.254*	0.380*	0.202*	0.126*	0.254*	1.00

Notes: This table provides a correlation analysis between variables examined in the current study. Log SP90 refers to the stock price 90 days after the end of financial year; NSD refers to the number of reported segments; BVPS reports the book value of equity per share; EPS refers to the firm's earning per share; SNIPS refers to the net income per share for each business segment; SAPS refers to the assets per share for each segment; SLPS refers to the liabilities per share for each segment; SPEPS refers to the book value of equity per share for each segment and SLO refers to the loss of segments as a dummy variable where the value of 1 given if the segment reported a loss and 0 otherwise. In this regard, companies reported segment loss were 18 in Jordan and 14 in Qatar. *Significant at 5 percent level

Table IV.
Correlation matrix
of the variables

Due to the relatively small size of the sample examined in the current study, a few of the variables were not normally distributed; and a number of empirical procedures and diagnosis tests were conducted in order to ensure that the regression assumptions are met. First, the study scaled all of the variables examined by the number of ordinary shares outstanding, in order to enhance the variables' consistency and normality (Tahat *et al.*, 2017). Second, the dependent variable (share price) is transformed by taking its logarithm in order to make the data more normally distributed. Nevertheless, some residuals for the regression results that are presented in Tables V and VI, were not normal; however, we do not believe that such deviations from normality materially impact on the results, since the kurtosis and skewness of the residuals are almost equal to 3 and 0, respectively (Lang and Lundholm, 1993; Wallace *et al.*, 1994). Third, the current paper controlled for the presence of heteroskedasticity in the data set. The possibility that the variance of the error term might not be constant was accounted for using White's (1980) procedure, and the results indicated that heteroskedasticity was not an issue, since White's correction did not alter the findings. Lastly, the Ramsey Reset test was used to test whether the correct specification of the models was employed (Tahat *et al.*, 2016). The evidence from this Ramsey Reset test suggested that all of the models were correctly specified as linear equations. Finally, the study estimated the skewness and kurtosis of the residuals and the results indicated that outliers did not affect the variability among the variables examined.

Table V outlines the results of the regression analysis, examining the association between the sample firms' market prices and the NSD in both Jordanian (Panel A and B) and Qatari (Panel C and D) listed companies for the years 2013 and 2014. An analysis of

Variables	Coefficient	<i>t</i> -value	<i>p</i> -value	VIF
<i>Panel A: Jordan segments 2013</i>				
Intercept	-3.880	4.200	0.000	
BVPS	0.139	1.624	0.111	3.446
EPS	0.500	5.975	0.000	4.017
NSD	0.184	3.872	0.000	1.571
Adjusted R^2 : 0.51; <i>F</i> -statistic: 19.990**				
<i>Panel B: Jordan segments 2014</i>				
Intercept	3.546	3.562	0.001	
BVPS	0.320	0.410	0.690	2.585
EPS	0.275	4.430	0.000	2.616
NSD	0.167	3.352	0.000	1.448
Adjusted R^2 : 0.42; <i>F</i> -statistic: 13.990**				
<i>Panel C: Qatar segments 2013</i>				
Intercept	2.151	1.439	0.160	
BVPS	0.594	3.118	0.004	2.192
EPS	0.750	4.029	0.000	1.942
NSD	0.390	0.620	0.140	1.099
Adjusted R^2 : 0.32; <i>F</i> -statistic: 6.503**				
<i>Panel D: Qatar segments 2014</i>				
Intercept	1.317	0.770	0.447	
BVPS	0.455	2.265	0.031	2.035
EPS	0.630	2.903	0.007	2.925
NSD	0.349	0.885	0.023	0.055
Adjusted R^2 : 0.19; <i>F</i> -statistic: 3.516*				

Table V.
The association between the number of segments disclosed and firms' share price

Notes: This table reports the regression analysis for the association between firms' stock price and the numbers of segments disclosed for both Jordanian and Qatari listed firms. See note to Table II for an explanation of the variables. *,**Significant at 5 and 1 percent levels, respectively

Panels A and B in Table V indicates that the NSD variable had a positive, significant relationship with the market price variable; coefficients of 0.184 (2013) and 0.167 (2014) were documented, with *p*-values of less than 0.05 indicating that Jordanian investors attached value to this published segment-related item of information. Furthermore, Table V reveals that the coefficient on the NSD variable for the Qatari firms was statistically significant in 2014 (Panel B) with a coefficient of 0.349 and a *p*-value of 0.023. However, this was not the case in 2013, when no significant association was documented (Panel C). In terms of the models examined in Table V, the analysis reveals that the explanatory power is reasonably impressive for Jordanian firms, with adjusted R^2 values of between 0.42 and 0.51. The values are smaller for Qatari listed companies, with adjusted R^2 s of between 0.19 and 0.32 being documented. Finally, the *F*-statistics for the joint significance of the three variables (BVPS, EPS, NSD) reject the null hypothesis that the coefficients are equal to zero.

Table VI examines the value relevance of the segment-related amounts reported in the annual financial statements. In terms of the Jordanian data, an analysis of Panels A and B in Table VI illustrates that SNIPS, SAPS and SLPS had a statistically significant association with the share prices in 2013 and 2014. Other variables had mixed results, for example, while SBEPs was value relevant in 2014 (Panel B), this was not the case in 2013 (Panel A), when no significant relationship was found. In terms of the explanatory power of the models for the Jordanian data (Panels A and B), Table VI indicates that a sizeable part of the sample

Variables	Coefficient	t-value	p-value	VIF
<i>Panel A: Jordan 2013</i>				
Intercept	1.737	0.948	0.354	
BVPS	0.239	2.035	0.049	3.753
EPS	0.481	4.090	0.001	4.818
SNIPS	0.382	2.153	0.043	3.117
SAPS	0.172	1.719	0.040	2.959
SLPS	1.275	1.675	0.001	1.537
SBEPS	0.510	0.426	0.675	1.147
SLO	0.630	1.552	0.036	1.975
Adjusted R ² : 0.57; F-statistic: 6.461**				
<i>Panel B: Jordan 2014</i>				
Intercept	11.280	2.466	0.120	
BVPS	0.360	0.943	0.021	1.001
EPS	1.197	1.609	0.351	1.342
SNIPS	0.495	1.361	0.121	0.763
SAPS	0.190	0.450	0.006	1.012
SLPS	0.100	1.170	0.963	0.320
SBEPS	0.312	3.321	0.034	1.980
SLO	0.870	2.130	0.083	1.109
Adjusted R ² : 0.59; F-statistic: 8.343**				
<i>Panel C: Qatar 2013</i>				
Intercept	1.008	0.875	0.395	
BVPS	0.040	1.926	0.073	1.850
EPS	0.157	6.431	0.000	1.446
SNIPS	0.220	0.354	0.028	3.302
SAPS	0.302	1.453	0.027	2.491
SLPS	0.980	1.198	0.005	4.170
SBEPS	0.149	0.990	0.338	3.890
SLO	0.453	1.921	0.020	1.320
Adjusted R ² : 0.79; F-statistic: 14.467**				
<i>Panel D: Qatar 2014</i>				
Intercept	2.459	2.012	0.061	
BVPS	0.010	0.586	0.566	1.911
EPS	0.166	6.640	0.000	1.467
SNIPS	0.113	0.833	0.017	1.059
SAPS	0.206	0.537	0.041	2.783
SLPS	0.098	0.701	0.043	1.260
SBEPS	0.450	0.327	0.748	2.459
SLO	0.342	0.792	0.020	2.143
Adjusted R ² : 0.76; F-statistic: 13.063**				

Table VI.

The association between segment amounts and firms' share price

Notes: This table provides the regression analysis of the association between firms' stock prices and the information disclosed regarding each segment (including net income, assets, liabilities, book value of equity and loss) for both Jordanian and Qatari listed firms. See Notes section of Table II for an explanation of the variables. **Significant at 1 percent level

companies' market price is explained by a model which includes segment-related information with an adjusted R² of 0.57 (2013) and 0.59 (2014). Panels C and D, in Table VI, report the value relevance of segment-related disclosures for Qatari listed companies. In particular, Panel C (2013) reveals that SNISP, SAPS, SLPS, SLPS and SLO variables had positive, significant associations with Qatari listed companies' market prices; the

coefficients were 0.220, 0.302, 0.980 and 0.453 (respectively), and p -values of less than 0.05, indicating that market participants impounded segmental information into equity prices when making valuation decisions. The results for 2014 (Panel D) report similar findings. In addition, Panels C and D outline that segment-related information can explain market values for Qatari listed firms with an adjusted R^2 of between 0.76 and 0.79. The results from Tables V and VI provide answers to the research questions that relate to whether segmental reporting practices are value relevant. In particular, the results show that the NSD variable is associated with a company's share price. In addition, the findings reveal that SNIPS, SAPS and SLPS are value relevant. These results indicate that segment-related disclosures are of interest, and market participants are using them when they are making investment decisions. Accordingly, $H2$ and $H3$ are supported; indicating that segmental information disclosed by both Jordanian and Qatari listed firms is value relevant and can explain the variations in share prices.

In general, the results of the current study support the findings shown in the extant literature. The summary information indicates that Jordanian and Qatari listed companies do publish segmental information, although the level of the segmental reporting provided is statistically different across sectors and between countries. In addition, the present paper examines the value relevance of segment reporting data. In particular, we test whether disaggregated segment data in a valuation model has a positive association with share prices. The findings reveal that segmental disclosure (including the number of segments and the segment-related accounting details) for both Jordanian and Qatari listed firms, is both value relevant and significantly associated with share prices. These findings support prior studies (Chen and Zhang, 2003; Hossain and Marks, 2005; Hossain, 2008; Hope *et al.*, 2008; Birt and Shailer, 2011; Kajüter and Nienhaus, 2017; Birt *et al.*, 2017) which investigated the association between segment data and share prices. Results for these two developing countries in the Middle East are thus similar to findings relating to other developed and emerging nations. The empirical evidence of the current study also supports the experimental results of Hossain (2008), Hope *et al.* (2008) and Maines *et al.* (1997), who found that segmental information based on the management approach, was perceived to be more useful. Consequently, preparing segment reports that enable users to see the entity "through the eyes of management" increases the value relevance of segmental information.

6. Conclusions

The current study examines the value relevance of segmental reports and investigates whether they help to explain the share prices of Qatari and Jordanian listed companies; this relevance was examined for a two-year period after the IASB's review of IFRS 8. Many prior investigations were conducted when the standard was first adopted, but prior to the post-implementation review, which confirmed that no changes to the standard were proposed. A number of findings emerge from this current investigation. First, the quantity of segment-related information provided was statistically different across sectors. In particular, differences were significant between the financial industry, on the one hand, and both the manufacturing and services sectors, on the other. However, differences between the services and manufacturing sectors were not significant. Second, most of the segmental information variables studied were value relevant and this could explain the variations in market prices.

The results of the current investigation offer several insights to the policy makers, including the IASB and Jordanian and Qatari regulators. For example, the results reaffirm the IASB's conclusion in its post-implementation review of IFRS 8: that the replacement of IAS 14 has led to the continuing publication of useful data. The benefits of the new segment reporting requirements that are based on this management approach

seem to be useful to investors, since they affect share prices. For example, the findings of the current paper suggest that IFRS 8's management approach has enhanced the effectiveness of financial reporting by providing external users (i.e. analysts) with what is perceived to be reliable segmental information. Moreover, the findings of the current paper should be of interest to standard setters more generally, since they suggest that the value relevance of segment reports is largely driven by segmental earnings, rather than by equity. This is in line with the changes permitted under IFRS 8, which removed the mandatory requirement to disclose the segment assets. Furthermore, the results provide standard setters with some insights into how the capital markets in emerging market countries perceive the information that is provided under a new accounting standard such as IFRS 8. In addition, the results should provide insights for the stock exchanges in Jordan and Qatar on the relevance to Jordanian and Qatari listed companies of adopting IFRS. These insights may also have policy implications for other developing countries that are working hard to improve the quality of the financial reporting for their business entities. For instance, the findings of the current study could encourage other developing countries that still employ national accounting standards to adopt IASs/IFRSs. Moreover, the results of this study contribute to the literature on segmental reporting by supplying information about the effect of the adoption of segmental reporting in an emerging market. Finally, the results provide some insights for the CODMs of Jordanian and Qatari firms who make decisions on the content of segmental disclosures. They should be able to glean valuable insights into how investors perceive the segment-related information, which their firms publish, and which is capitalized into share prices.

The current study has some limitations. Our sample size has been reduced, due to a lack of segmental and share price data for several of the Jordanian and Qatari listed companies, and thus many listed companies had to be excluded for data availability reasons. In addition, the current research only looks at two years of data, and we could not extend our empirical research beyond two years. Future research might cover a longer period and a larger sample of firms in order to enhance the generalizability of the results. However, we believe that the current research contributes to knowledge about value relevance, in general, and emerging markets, in particular. In addition, we have conducted a number of diagnostic tests to ensure that the results arrived at satisfy the statistical assumptions underpinning the analysis. Finally, future research could look at other issues that may have affected segmental reporting such as corporate governance in the reporting entity. Any future investigation might seek to explain why segmental disclosures differ across sectors.

Notes

1. The FASB updated its Accounting Standards Codification (ASC) in 2014 (issued in 2009) as a source of authoritative and Generally Accepted Accounting Principles (GAAP) that were recognized by the FASB as being applied to US listed companies. The main objective of the ASC is to simplify user access by codifying all authoritative US GAAP in one spot. In addition, it aimed to create an up-to-date codification research system for the released results of FASB activities (Financial Accounting Standards Board, 2014). The composed codifications listed in page 7 of the ASC shows the changes in the codifications (i.e. "Statement of Financial Accounting Standard" (SFAS) has been amended to "Financial Accounting Standard" (FAS)).
2. At the time of IFRS 8's introduction, a number of studies investigated the usefulness of segmental information (Crawford *et al.*, 2012; Nichols *et al.*, 2012; Mardini *et al.*, 2013; Nichols *et al.*, 2013; Kang and Gray, 2013; Kang and Gray, 2014; Mardini *et al.*, 2015; Franzen and Weißberger, 2015; Mardini and Almujaed, 2015; Leung and Verriest, 2015). The results of these studies indicated that there was an increase in the number of reported segments after

the adoption of IFRS 8 (and its management approach) in several countries. However, the number of items provided per segment tended to be lower following the introduction of IFRS 8, and this was especially true for companies in competitive sectors that were worried that such disclosures would put them at a competitive disadvantage. Further, information on specific items (such as liabilities per segment, or capital expenditure per segment) actually declined when the new standard became effective.

3. Although the Ohlson (1995) model has provided important insights into the value relevance of accounting information, including its emphasis on a clean surplus, book value, transitory components of earnings, conservatism, and delayed recognition, it has been criticized by the extant accounting literature on a number of grounds. One criticism is that the Ohlson Model has no endogenous demand for accounting data; however, Beaver (2002) argued that this criticism is somewhat misplaced; since the modeling can be informative without including an endogenous demand for accounting information. Another criticism is that the model does not take account of any information asymmetry that may exist between parties; hence, no strategic uses of accounting data arise within the Ohlson model. In this regard, several financial reporting issues arise due to concern around information asymmetry and incentives to manage accounting numbers. The Ohlson framework does not address these issues. A third criticism is that some aspects of the model are unsupported by the empirical evidence (e.g. Myers, 1999; Joos, 2002; Barth *et al.*, 1999), e.g., its linearity properties, and the consistency among the coefficients in the system of linear information dynamics and valuation equations. However, despite these criticisms, one important feature of the Ohlson framework remains. The Ohlson (1995) Model allows researchers to predict how the coefficients within and across the equations in the system are related.
4. Nevertheless, the study tested for the presence of collinearity when estimating the regression equations by calculating the variance inflation factor (VIF) values; these are reported in Tables V and VI; a value of greater than 10 indicates that a significant amount of collinearity may be present.

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