

# Value relevance of accounting information in an emerging market: the case of IFRS adoption by non-financial listed firms in Saudi Arabia

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## Abstract

**Purpose** – The paper aims to provide empirical evidence of the impact of IFRS adoption on the value relevance of accounting information in the emerging market of Saudi Arabia.

**Design/methodology/approach** – The sample consists of 98 non-financial listed firms operating in Saudi Arabia from 2014 to 2019, representing the years before and after IFRS adoption. The authors apply basic and extended price models to examine the value relevance of select accounting figures.

**Findings** – The authors findings provide evidence that accounting information is, generally, value relevant to the Saudi Arabian capital market. However, mixed results exist for particular accounting variables. Both earnings and cash flows are value-relevant in the period before and after IFRS adoption; equity is only relevant in the post-adoption period. Furthermore, IFRS adoption also increases the explanatory power of earnings. An increase in the value relevance of earnings and equity hurts the value relevance of cash flows. The effects are moderated by leverage and dividend policy.

**Originality/value** – The authors contribute to the ongoing discussion of the economic effects of IFRS adoption in emerging markets. The empirical findings show that initial concerns about IFRS adoption, as reflected by the negative coefficient within the regression analysis, are mitigated once the usefulness of the individual accounting variables published in financial statements is investigated.

**Keywords** IFRS, Value relevance, Emerging markets, Saudi Arabia

**Paper type** Research paper

## 1. Introduction

This paper explores the impact of IFRS adoption on the value relevance of accounting information in the emerging economy of Saudi Arabia. We focus on the value relevance of IFRS in this emerging country for several reasons. Firstly, the quality and relevance of accounting information transmitted via financial statements are essential for equity investments. Accounting harmonisation through IFRS is expected to benefit the investors in these decisions (Ball, 2006). Nevertheless, the empirical evidence does not always confirm the expectations and real economic outcomes remain inconclusive, e.g. Bartov *et al.* (2005), Barth *et al.* (2008), Cormier *et al.* (2009), Morais and Curto (2009), Aubert and Grudnitski (2011).

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The economic heterogeneity in IFRS outcomes is mainly explained by deficiencies in enforcement (Berger, 2010) or the insufficient reporting incentives of adopters (Daske *et al.*, 2013). Such imperfections can be identified both in developed and developing countries. Secondly, emerging markets face specific challenges when adopting IFRS. Despite recent research showing more interplay between the banking sector and capital markets (Arize *et al.*, 2018), equity markets still play less important roles than the banking sector in emerging countries. The lack of dynamic and efficient markets on one side (Boumediene *et al.*, 2016) and the lack of qualified accountants on the other (Nurunnabi, 2018) impede the usefulness of financial reporting for investment decisions. Personal traits, beliefs and values, including the cultural aspect of secrecy, influence the interpretation of probability notion and affect income determination and disclosures, as demonstrated in several MENA countries (Mardini *et al.*, 2015; Eljammi Ayadi *et al.*, 2021). Thirdly, the “Western roots” of IFRS may be incompatible with some features of the institutional frameworks in emerging countries, such as Shariah law in Islamic countries (characterised, e.g. by a ban on interest). Finally, the state has a dominant position in the national economy of many emerging countries, and the subordination to the “state goals” can undermine the smooth functioning of market institutions, including capital markets and financial reporting. The specifics mentioned give rise to the paradox of accounting harmonisation in emerging countries, where determinants pressing for IFRS adoption simultaneously restrict their full adoption (Al-Htaybat, 2018a) and, hence, restrict the full benefits of IFRS adoption of being achieved for the stakeholders (Ben Othman and Kossentini, 2015; Agyei-Boapeah *et al.*, 2020).

Following the recommendations of Samaha and Khelif (2016) to extend IFRS literature focusing on emerging markets, this paper attempts to examine the effects of IFRS adoption on the value relevance of accounting information of firms listed on the stock exchange in Saudi Arabia. We selected Saudi Arabia as a case country for several reasons (see more details about the local context in Chapter 2). Firstly, Saudi Arabia is one of the largest countries in the Middle East and North Africa (MENA) in terms of population and economy. The MENA region encompasses a significant proportion of emerging markets with an institutional background that is generally considered partially incompatible with the conceptual underpinnings of IFRS, thus creating an intriguing setting where the consequences of IFRS adoption may turn out to be different from those predicted. Secondly, the economic importance of the MENA region is gradually increasing, as confirmed by the fact that Saudi Arabia became a G20 member in 2009. Thirdly, the country is the world’s largest oil exporter, which may expose its financial reporting system to specific pressures from international and local economic agents alike, as suggested by the resource dependence and institutional theories (Alon and Dwyer, 2014). Fourthly, the country has been implementing significant reforms to transform the oil-exporting economic model into a more sustainable one. Capital market reforms are crucial for a successful transition and include, in addition to adopting IFRS, the largest IPO in history. Finally, Saudi Arabia can be labelled as a typical example of “accounting harmonisation paradox” described by Al-Htaybat (2018a), as those forces which initially promoted the decision to adopt IFRS also caused the actual implementation of IFRS to be suspended for a decade.

Although many articles have discussed the topic of IFRS in Saudi Arabia from different perspectives (Alnodel, 2015; Herath and Alsulmi, 2017; Hashed and Almaqtari, 2021), they have done so with only a fragmented investigation of value relevance characteristics (Alnodel, 2018; Alomair *et al.*, 2022). We extend the existing literature by utilising a dataset of 588 firm-year observations for the period 2014–2019 (three years in the pre-adoption and three years in the post-adoption era) and applying the standard methodology of value relevance based on the Ohlson (1995) price model and the Easton and Harris (1991) return model. Empirical data indicate that accounting numbers are, in general, value relevant to the Saudi Arabian capital market. Furthermore, our results show that the early phase of

IFRS adoption is associated with a general perception about the decline in the value relevance of accounting information. However, developments of the value relevance of individual accounting variables do not confirm this general perception, as IFRS adoption increases the explanatory power of earnings and equity on the market stock returns compared to the pre-adoption period.

Our study thus contributes to the current research in several ways. Firstly, we bring evidence from the rapidly growing capital market of a country transforming an economy dependent on oil exports to a diversified and sustainable economic model while showing that IFRS adoption contributes to increased decision-usefulness of accounting information for investors. Secondly, we identify another type of “substitution effect” of IFRS adoption in an emerging market. For example, [Mongrut and Winkelried \(2019\)](#) show that positive outcomes of IFRS adoption on the value relevance of accounting information in Latin America have been accompanied by a decrease in audit quality when a high-quality audit had served as a substitute to overcome the negative effects of the low quality of local GAAPs in the pre-adoption period. Similarly, our data reveals that equity investors value information related to IFRS earnings and equity more than earnings based on Saudi GAAP, although the increase in the value relevance of earnings and the book value of equity is accompanied by a weakening in the importance of cash flows. Investor attention to IFRS-based earnings indicate that these metrics can capture a firm’s expected cash flows better than actual cash-flow metrics ([Barton \*et al.\*, 2010](#)). This substitution effect suggests that IFRS, despite being based on different economic fundamentals, may capture the economic reality via financial statements in a more useful way than local GAAP, even when local GAAP are tailored to local economic specifics (such as the prohibited charging of interest or religious tax).

The substitution effect is present in a group of issuers with high leverage or low dividend payout ratios. This subsample is also strongly accountable for the negative effect of IFRS adoption we identified. This “adverse effect” of IFRS adoption can be caused by the incompatibility of IFRS with Saudi Arabia’s environment. Alternatively, it may address the investors’ concerns about the regulatory policy, namely the decision to amend and adjust the official text of IFRS, which may lead to less transparent financial reporting of firms with a high-risk profile. Our findings confirm, thus, the conclusions of [Samaha and Khelif \(2016\)](#) who highlight the importance of investigating local specifics in an emerging market, including its institutional background which may be specific even when compared to other countries in a region sharing seemingly similar characteristics. The local specifics may have a decisive impact on the economic consequences of accounting harmonisation, at least over the short term.

The structure of this paper is organised as follows: The second chapter briefly introduces Saudi Arabian institutional background. The third chapter outlines the theoretical framework for the empirical section. The fourth chapter reviews prior literature and discusses the introduction of IFRS and its impact on the value relevance of accounting information, including the hypotheses development. The research design in the fifth section describes the data collected for the empirical analysis and the model’s specifications. The sixth and final chapters are dedicated to the analysis and conclusions.

## 2. Background and local context

As noted in the introduction, Saudi Arabia’s institutional context is worth investigating in several regards. In this chapter, two crucial factors are examined in detail. Firstly, the economic reforms aiming to transform an economic model heavily dependent on oil exports to a modern market economy are analysed. Secondly, we investigate the drivers and obstacles shaped by Shariah and other local specifics during the road to IFRS adoption.

The Kingdom of Saudi Arabia (KSA) is the largest country in the Middle East and the second-largest among the Arab world countries boasting a population of around 34 million in 2020 and a total GDP of approximately USD 700 billion. Saudi Arabia ranks first in the MENA region in terms of oil reserves (and second worldwide) and is considered the world's number one oil exporter. Rich natural resources significantly contribute to its economic output, and Saudi Arabia ranks among the top 20 economies in the world. Its growing economic importance was confirmed in 2009 when the country became a member of the Group of Twenty Finance Ministers and Central Bank Governors (G20). Table 1 presents selected economic data from Saudi Arabia.

Between 1999 and 2019, the population of Saudi Arabia increased from 20.2 million to 34.3 million, an average annual increase of 2.67%. The unemployment rate oscillated in the range of 4–6%. Despite a favourable low unemployment rate, the labour market continues to suffer from systemic weaknesses. First of all, the participation ratio is relatively low. Only around 55% of people older than 15 actively participate in the labour market, the main reason being the low number of working women, as the female employment to population ratio was 21% in 2019 (compared to 15.5% in 1999). Male participation is considerably higher (78.5 in 2019 compared to 70.8% in 1999). A traditionally lower female employment rate resulted from restricted access to jobs in certain industries. Reforms under the Vision 2030 Agenda, implemented to incentivise and protect women, have significantly increased their participation in the labour market. Although significant improvements were achieved in the last 20 years, the private sector still struggles with a lack of local employees. It has to rely on foreign labour, which, according to estimates, can account for up to 80% of the workforce. Another critical issue in the labour market is the rising unemployment rate of young people between 25 and 30% (even male youth unemployment reaches 20%).

The unfavourable situation in the labour market reflects the developments in aggregate output. On one side, real gross domestic product (constant in 2015 USD) has more than doubled over the past two decades, representing an average annual growth rate of 3.4%. The nominal GDP in the local currency of the Saudi Riyal has been increasing by 8.3% a year, with average yearly inflation of 4.2%. On the other hand, rising absolute GDP has only been moderately translated into improving GDP per capita. The effect of a growing population neutralised the benefits of a growing economy, as GDP per capita in 2019 was only 15% higher compared to 1999, resulting in an annual growth average of 0.7%.

Such ambiguous economic development is related to the one-way oriented model of the national economy which is enormously dependent on the exports of natural resources, mainly oil. Rents received from natural resources correspond to approximately 40% of GDP and almost 75% of public budget revenues. Huge budget revenues from oil enable the Kingdom, in general, to invest in infrastructure and similar capital-intensive projects, but they also

	1999	2004	2009	2014	2019
Population	20,194,531	23,132,686	26,630,303	30,916,603	34,268,529
Unemployment	4.4%	5.8%	5.4%	5.7%	5.7%
GDP real (bn USD)	346.1	421.5	484.7	628.5	678.6
GDP growth	−3.8%	8.0%	−2.1%	3.7%	0.3%
Inflation	14.5%	11.1%	−15.7%	−2.3%	0.5%
Exports*	34.7%	51.0%	47.1%	46.9%	36.0%
Natural resources rents*	27.0%	42.8%	35.5%	40.9%	24.8%
Market capitalisation*	x	x	74.3%	63.9%	303.5%

**Note(s):** \* % of GDP

**Source(s):** Authors' own work based on the World Bank Statistics (<https://data.worldbank.org/country/SA>)

**Table 1.**  
Economic data  
of Saudi Arabia

make the labour market and the social system more vulnerable. The exact amount of oil rents in a particular year is highly volatile and difficult to predict, as the monetary amounts received are affected by the actual global oil prices. Saudi Arabia's exposure to fluctuations in world oil prices is pervasive, even though the country is a member of OPEC which attempts to smooth price fluctuations through coordinated drilling and other activities [1].

Saudi Arabia has proposed several economic reforms to eliminate the negative impacts of an oil-oriented command economy, including the strategic framework called "Saudi Vision 2030", introduced in 2016, whose main objective is to diversify the national economy in the private sector pillar (by supporting foreign direct investments, non-oil foreign trade, tourism, etc.) and develop public sector services (including health, education and infrastructure). The best-known measure attributable to the 2030 Agenda is the initial public offering of Saudi Aramco in December 2019. Going public on the Tadawul, Saudi Arabia's Stock Exchange, made Saudi Aramco the largest IPO in history. The objective of selling 1.5% of company shares on the domestic stock exchange was to raise capital and promote the domestic capital market to boost foreign investments and trade. The Tadawul was initially formed in 2007. For a decade, its market capitalisation was about 70% of the GDP. It increased significantly as a result of Saudi Aramco's listing. As of 2021, it has 204 publicly traded companies, and its market capitalisation is 2.2 trillion USD (more than 300% of its GDP).

The capital market reforms proposed to increase the attractiveness of the domestic stock exchange also included adopting IFRS, which is the second interesting aspect of the Saudi Arabia institutional context to investigate in detail. The central accounting and auditing standard-setting body for all companies operating in the country is the Saudi Organization for Chartered and Professional Accountants (SOCPA), established in 1992 and supervised by the Ministry of Commerce. From 1997 to 2003, SOCPA issued 16 new standards and adopted one standard from the previous period, forming the Saudi accounting standards (SAS) to be applied by Saudi-listed entities. The origins of SAS were based on a mixture of American, German and Tunisian GAAP. Furthermore, in case of any missing guidance in SAS, listed firms were obliged to adopt accounting treatments compatible with US GAAP. However, as a reaction to accounting scandals on US markets around 2001, SOCPA decided to require the usage of IFRS instead of US GAAP for those areas not covered by local legislation. In the next phase, the full adoption of IFRS was deliberated, with an initial plan to mandate IFRS for the banking and insurance industry.

The obligation to apply IFRS imposed on banks and insurance companies, regardless of their being listed or unlisted, was approved by the Saudi Arabian Monetary Authority (SAMA) and has been in effect since 2008. However, the decision requiring IFRS for listed firms was postponed by SOCPA for several years. Among the main reasons for the reluctance and opposition to IFRS, the stakeholders mentioned that SAS were accommodated to suit local needs, including Zakat and income tax (Almansour, 2019). The road map „SOCPA Project for the Transition to International Accounting and Auditing Standards“ was proposed in 2012, with listed firms expected to adopt IFRS in 2017 and remaining entities a year later. To address the specifics of the local environment, including the impact of Islam on business practices, SOCPA reviewed the content of IFRS and categorised them into groups based on how compatible they were with legal, cultural and other aspects (Almansour, 2019). As a result, the "endorsed IFRS standards" are the complete IFRS standards with some adjustments; some options were removed while SOCPA added other disclosure requirements, standards and pronouncements. For example, subsequent measurement models under IAS 16 and IAS 40 based on fair value were suspended for the first three years.

The suspension of fair value revaluations may manifest the cultural aspects of conservatism and secrecy (Mardini *et al.*, 2015; Eljammi Ayadi *et al.*, 2021). Other amendments were introduced to reflect the specific religious and economic phenomena stemming from Shariah

and local laws, such as the subject of Zakat, a religious tax obligation [2]. These accommodations are supposed to alleviate the tensions between “Islamic values”, which form the heart of Saudi Vision 2030, and “Western values” beyond IFRS, to avoid losing pace with global business developments. On the other hand, any amendments to the official text of IFRS may, in addition to reducing the comparability of financial statements, compromise the coherence of standards and, ultimately, reduce the value relevance of the financial statements. Thus, IFRS adoption may be perceived negatively by both domestic (due to deviation from local institutional specifics) and foreign investors (“label” adoption viewed as not entirely credible).

The entire process of IFRS adoption lasted for more than 15 years in Saudi Arabia and provided an intriguing setting when examined from various research perspectives. To briefly summarise the outcomes, first, we consider the adoption and implementation process. [Yamani and Almasarwah \(2019\)](#) examine the determinants which affected the decision to delay IFRS adoption to 2017, despite a partial adoption having already been approved in 2005. [Nurunnabi \(2018\)](#) surveys the perceptions of selected stakeholders, including the preparers, regarding the expected benefits and costs of IFRS adoption by the country. In a later study, [Nurunnabi et al. \(2020\)](#) collect data about the benefits and challenges of the early phase of IFRS adoption from the preparers’ perspective, including the impact on their accounting and financial strategies. Secondly, regarding the outcomes of IFRS adoption, [Hashed and Almaqtari \(2021\)](#) address the association of corporate governance mechanisms and earnings management in IFRS financial statements, concluding that the financial reporting quality under IFRS has improved compared to the Saudi GAAP.

On the other hand, [Garfatta \(2021\)](#) reveals a positive association between the corporate social responsibility (“CSR”) disclosures and IFRS earnings management practices, supporting the agency theory where managers try to conceal underperformance through extensive CSR disclosures. The second aspect of accounting quality, value relevance, has been inspected, e.g. by [Alnodel \(2018\)](#), who finds evidence of less value-relevant book value of equity and more value-relevant earnings in the post-IFRS period in the insurance sector (21 firms in the sample). A broader sample for the period 2015–2018 is examined by [Alomair et al. \(2022\)](#), who do not find any significant variation in value relevance under Saudi GAAP and IFRS but identify an increase in the value relevance of the book value of equity in the post-adoption period. Finally, [Aldoseri et al. \(2021\)](#) are interested in the moderating effect of IFRS adoption on the relationship between audit committees and the audit report lag, while [Borgi et al. \(2021\)](#) assess the personal characteristics of the individual CEOs and their relation with the timely preparation of IFRS financial statements during the transition period.

### 3. Theoretical framework

Estimating a company’s value is a major decision-making task of equity investors. Accounting information is, undoubtedly, one of the most relevant data sources for these tasks ([Beisland, 2009](#)), e.g. when estimating stock values as a function of earnings or book value of equity. However, the capital market effects of accounting standards are not only a function of the quality of accounting standards themselves, but they also critically depend on a country’s institutional framework and firms’ reporting incentives ([Ali and Hwang, 2000](#); [Ball et al., 2003](#); [Daske et al., 2008](#)). The investigation of determinants for the mandatory adoption of IFRS by the state authorities in Saudi Arabia is, therefore, a precondition to hypothesise the expected impacts of this decision on the capital market and to link the empirical results with a coherent theoretical framework.

According to [Samaha and Khlif \(2016\)](#), emerging countries’ regulatory (macroeconomic) decisions to adopt IFRS can mainly be explained by institutional theory (isomorphism) which



investigates the interplay of social, economic, political, religious and other formal and informal institutions. It postulates that the dynamics of these institutions may not be affected by their functional characteristics, but more by symbolic actions and external influences (Meyer and Rowan, 1977). Regarding IFRS adoption, the institutional theory recognises three channels promoting the decision to adopt: coercive, mimetic and normative pressures. The coercive pressures usually come from international bodies (IMF, WB, OECD, WTO) that provide emerging countries with financial aid, conditioned by undergoing economic reforms, including improving financial reporting by adopting IFRS. Coercive pressures can also emerge internally when a country voluntarily transforms its real economy or financial and capital markets.

Mimetic pressures are relevant once a country decides to match the development of other countries perceived as more economically successful. In addition, firms (voluntary adopters) can actively influence a government's decision to adopt IFRS. Finally, the network theory can be subsumed under mimetic pressures, meaning that a country follows the decision of its close trade partners to adopt IFRS, provided that the adoption is expected to increase the country's wealth surplus. The third stream, normative pressures, is usually connected with the accounting profession encouraging the replacement of local GAAP by IFRS, which are viewed as a reporting system of superior quality. Evidence for the institutional theory in the MENA region is found, e.g. by Irvine (2008), Al-Akra *et al.* (2009), Al-Htaybat (2018a), Boolaky *et al.* (2018), Tahat *et al.* (2018), Khlif *et al.* (2020).

In addition to the dominant institutional theory, alternative explanations for adopting IFRS in the MENA region are examined, e.g. structuration theory by Al-Htaybat (2018b) in Jordan or the Habermasian perspective by Kamal Hassan (2008) in Egypt. Regardless of theory applied, early studies in the MENA region conclude that even comparable adoption strategies and similar institutional environments may have a different impact on the value relevance of accounting information after IFRS adoption (El-Diftar and Elkalla, 2019). Furthermore, the value relevance of particular accounting variables (earnings, equity, cash flows) does not have to evolve similarly (Khanagha, 2011).

#### 4. Literature review and hypothesis development

##### 4.1 *The role of institutional background on the value relevance of accounting information*

As noted in the introduction, our primary interest focuses on whether firms' financial statements on the Saudi Stock Exchange contain value-relevant information and how value relevance has been affected by mandatory IFRS adoption. Value relevance, by definition, is the ability of the financial information disclosed in the financial statements to encapsulate the firm's market value. Beaver (1968) and Ball and Brown (1968) were the first to introduce the topic of value relevance of accounting earnings. Subsequently, a considerable number of studies became involved in investigating the topic of value relevance (Collins *et al.*, 1997; Francis and Schipper, 1999).

The renaissance of value relevance research is intertwined with IFRS adoption. One of the major factors promoting the deliberations to adopt IFRS was the expectation of an increased association between accounting data and stock prices due to a higher quality of IFRS reporting compared to (most) national GAAP. However, empirical evidence is not unanimous. Empirically observed heterogeneity of economic consequences related to IFRS adoption is explained by a variety of factors, such as a firm's reporting incentives (Christensen *et al.*, 2015), enforcement mechanisms, or the link between accounting and tax regimes (Morais and Curto, 2009), and, in general, by institutional backgrounds shaping the response of the local environment to global trends (Daske *et al.*, 2013). A country's institutional setting considerably reshapes the real outcomes of accounting harmonisation and may be one of the factors contributing most to variations across different markets.

Regarding the value relevance empirical literature in developed markets, there is rich evidence of a positive association between IFRS and value relevance (Barth *et al.*, 2008; Chalmers *et al.*, 2008; Cormier *et al.*, 2009), while other studies fail to record a positive association (Devalle *et al.*, 2010; Bolibok, 2014; Kouki, 2018). Inconclusive evidence is also available for emerging markets. Positive effects are found, e.g. by Alali and Foote (2012), Elbakry *et al.* (2017), Fuad *et al.* (2017) or (Erin *et al.*, 2017), while adverse or mixed outcomes are revealed, e.g. by Khanagha (2011), Alnodel (2018) or El-Diftar and Elkalla (2019).

Despite previous research divergences concerning the impacts of IFRS adoption on value relevance, both worldwide and in the MENA region, we hypothesise that IFRS adoption is likely to negatively affect the value relevance of financial statements of Saudi Arabian listed firms.

*H1. IFRS adoption has a negative impact on the value relevance of accounting information in the Saudi Arabia Stock Exchange.*

We base our prediction of Hypothesis 1 on the institutional theory perspective. As outlined in the description of the institutional background in Chapter 2, the IFRS adoption strategy was not viewed as an intrinsic component of (capital market) reforms pursued by local authorities. The decision to postpone the transition process until the local institutional specifics were resolved and the IFRS requirements were adapted to suit local needs (Almansour, 2019), which took almost a decade, could have undermined the credibility of the processes and, hence, user expectations of the positive effects of mandatory IFRS adoption. Similarly, the persistent reluctance to mandate IFRS may have introduced weak incentives by firms to prepare high-quality financial statements.

#### *4.2 IFRS adoption and value relevance of particular accounting variables*

As indicated, a vast stream of accounting literature seeks to uncover whether, and how, IFRS adoption has affected capital market characteristics and accounting quality, respectively. One of the first pioneer studies, Barth *et al.* (2008), approximates accounting quality by three metrics, including the value relevance of earnings. By investigating a sample of voluntary adopters from 21 countries, findings suggest that companies implementing IFRS exhibit, in general, better accounting quality, including value relevance, within the post-adoption period. Comparable conclusions are made by Bartov *et al.* (2005), who identify that the value relevance of IFRS earnings of German voluntary adopters is higher than the value relevance under German GAAP.

Cormier *et al.* (2009) focus on French mandatory IFRS adopters and detect the value relevance of mandatory equity adjustments made on the transition from local GAAP, which can be perceived as a positive signal of IFRS adoption to enhance value relevance. Using a sample of mandatory adopters from 12 EU countries, Aubert and Grudnitski (2011) do not detect any incremental increase in the value relevance of accounting information after IFRS adoption. Clarkson *et al.* (2011) investigate a sample of firms from 15 EU countries, plus Australia and differentiate common-law countries and code-law countries. Their results suggest that the relevance of book value per share and earnings per share declines after IFRS adoption for common-law countries and increases for code-law countries.

An important point is made by Chalmers *et al.* (2008), who investigate the association of a firm's earnings and the book value of equity against its stock prices. The 18-year-long sample reveals that while the coefficient of the stockholders' equity remains consistent through the period under review, the coefficient of net income increases following adoption. The variation in the impacts of IFRS adoption on the value relevance of different accounting figures is confirmed by Devalle *et al.* (2010) who detect an increase in the value relevance of earnings



(for Germany, France and the UK) but a decrease in the value relevance of equity (for Germany, France, Italy and Spain, but not for the UK). Dichotomous effects are also partially identified for the German and UK capital markets by [Elbakry et al. \(2017\)](#).

Adopting IFRS is believed to bring even greater benefits to emerging economies, characterised by underdeveloped financial reporting infrastructures. However, emerging markets cannot be considered a homogeneous group as they differ in many economic, political, cultural and institutional aspects as well as in their power to influence global development. [Adibah Wan Ismail et al. \(2013\)](#) assess value relevance in Malaysia where they find evidence of more value relevant IFRS earnings, conclusions similar to those in another study on the Indonesian market by [Fuad et al. \(2017\)](#). The value relevance of earnings, cash flows and equity has also improved in Nigeria ([Erin et al., 2017](#)) or in East Africa ([Outa et al., 2017](#)). An increase in value relevance after moving from local GAAPs to IFRS has also been identified by [Rodríguez García et al. \(2017\)](#) who investigate companies from Argentina, Brazil, Chile and Mexico. However, [Mongrut and Winkelried \(2019\)](#) offer a broader view: IFRS adoption has had a positive impact on value relevance, but they consider this benefit acting only as a substitute for high-quality auditors who were initially engaged by the preparers in the pre-adoption period as a measure to overcome the deficiencies in local GAAPs. Consequently, IFRS adoption may have contributed to an improvement in some respects (e.g. the value relevance of accounting information), but the overall quality of financial reporting systems remains unchanged.

Regarding previous evidence from the MENA region, [Alali and Foote \(2012\)](#) investigate a sample of firms traded on the Abu Dhabi Stock Exchange for the period between 2000 and 2006. They unveil a positive and significant association between price per share, and both earnings per share and equity book value per share, respectively. However, their research design focuses only on the period after IFRS adoption and, therefore, remains silent about the impact of IFRS adoption itself. [Khanagha \(2011\)](#) extends the sample to the pre-adoption period. The price and earnings return models show that IFRS adoption harms the value relevance of accounting data, except for cash flows. On the other hand, [Desoky and Mousa \(2014\)](#) find evidence of increased value relevance after adopting IFRS in Bahrain. In the case of Saudi Arabia, [Alnodel \(2018\)](#) finds that the value relevance of earnings is higher following IFRS adoption by insurance companies, whereas the value relevance of equity decreases. On the other hand, [Alomair et al. \(2022\)](#) identify an increase in the value relevance of equity, depending on company characteristics.

Mixed evidence is also presented in cross-country studies. Over the period 1998–2012, [Chebaane and Othman \(2014\)](#) performed tests on listed companies from the African and Asian emerging markets, including several MENA jurisdictions (UAE, Bahrain, Jordan, Kuwait and Qatar). Their results reveal a generally positive association between mandatory IFRS adoption and the value relevance of earnings per share and the book value of equity per share. Contrariwise, [El-Diftar and Elkalla \(2019\)](#) compare firms operating in the Gulf Cooperation Council (GCC) with non-GCC countries from the MENA region and conclude that IFRS adoption harms value relevance. In addition to traditional determinants, such as firms' reporting incentives, including ownership dynamics around IFRS adoption ([Hessayri and Saihi, 2018](#)), or the enforcement regime's functionality, [Almasarwah et al. \(2018\)](#) offer an alternative explanation of divergent results, one associated with frequent regional political and economic turmoil.

## H2. IFRS adoption impacts the value relevance of earnings, equity and cash flows.

As the previous literature indicates, the effects of IFRS adoption on the accounting variables investigated (mainly earnings and book value of equity, partially cash flows) vary significantly. In some jurisdictions, the value usefulness of accounting variables increased while the adverse effects prevailed in other markets. Furthermore, the impact on individual

variables is not always symmetric, and, for example, an increase in the value relevance of earnings is accompanied by a decrease in the value relevance of equity, or vice versa, in some countries. In the case of Saudi Arabia, we also identify several factors potentially contributing to better value relevance, as well as factors endangering the benefits of IFRS adoption. First of all, robust guidance on revenue recognition, measurement of assets and timely recognition of losses may be positively associated with the value relevance of earnings and equity. On the other hand, the temporary ban on fair value revaluations and other adjustments referring to Zakat and other local specifics may negatively affect the value relevance of equity in particular. Considering the prior evidence of prevailing positive effects, we also assume that positive factors dominate the negative ones. We assume that the value relevance of earnings, equity and cash flows (*per se*) improves after adopting IFRS, although company characteristics may potentially moderate the strength and direction of the association.

## 5. Research design

### 5.1 Data collection

This study examines the impact of IFRS on the value relevance of accounting information for companies traded on the Saudi Stock Exchange. Historically, these companies used the local Saudi GAAP (also called “SOCPA”) standards. Starting on 1 January 2017, a shift took place towards IFRS. The original population for our study included all companies listed on the Saudi Stock exchange. The initial total number of listed companies amounted to 204 subjects and covered different sectors of the Saudi economy. An elimination process was undertaken on two levels: first, we eliminated 63 firms operating in the financial sector (such as banks, insurance companies, financial intermediaries etc.), subject to specific regulations varying widely from the manufacturing and service sectors. The second elimination stage excluded firms lacking the necessary data to determine the value of the dependent or independent variables (stock price, number of shares outstanding) used in the analysis.

The final sample of 98 firms and their distribution by market categories is presented in [Table 2](#). The six years of data cover the three years before adopting IFRS (2014–2016) and the three years after the adoption (2017–2019). The data relating to financial statements are

<i>Saudi Arabian firms listed on TADAWUL as of 31 December, 2019</i>	204
Banks	–12
Insurance companies	–27
Other firms from the financial sector	–7
Real Estate Investment Trusts (REITs)	–17
Firms with incomplete data	–44
<i>Final sample, thereof by industry</i>	98
Materials	37
Food, Beverages and Staples retailing	12
Consumer Services and Consumer Durables and Apparel	10
Capital Goods	9
Transportation	5
Health care equipment	5
Retailing	4
Real estate management	4
Energy	4
Media and Commercial Services	4
Other Services	4

**Source(s):** Authors' own work

**Table 2.**  
Sample selection  
and distribution  
by industry

extracted from the Argaam platform, while the market share price and the number of shares outstanding were retrieved from the Mubasher KSA platform.

### 5.2 Model specification

Accounting literature recognises several approaches how to define the value relevance of accounting numbers. For example, [Francis and Schipper \(1999\)](#) develop four concepts. We follow that stream of research when assessing the ability of accounting information to capture a firm's value and to ex-post explain the heterogeneity in variations in stock prices over time and across companies. Consistent with previous, extensive studies, more relevant accounting information has a greater ability to make a quality difference in the user judgement and decisions. To this end, the direct check of validity and reliability of accounting information is the degree of connection between the firm value and accounting numbers.

The association between firm value and earnings was initially investigated ([Beaver, 1968](#); [Ball and Brown, 1968](#)). The theoretical framework rests on three links: current earnings provide information to predict future earnings, future earnings provide information to predict a future stream of dividends, and the present value of future dividends determines the share value ([Nichols and Wahlen, 2004](#)). This model, referring to traditional financial theory, was reformulated by [Feltham and Ohlson \(1995\)](#) in a way where equity value is the sum of net financial assets plus the present value of cash flow from operating activities. If the clean surplus relation holds ([Ohlson, 1995](#)), the market value of equity can be expressed as a function of accounting variables, namely the book value of equity and the discounted value of residual income. The concept is operationalised by relating a firm's market value to selected accounting variables through a regression model, formally expressed in [Equation \(1\)](#). *MarketValue* represents the market capitalisation (value) of company *i* at given time *t*; *AccVar* is the accounting variable (such as earnings or equity) presented in the financial statements; *OthFact* is the vector of other determinants affecting the given share price;  $\varepsilon$  is the error term.

$$\text{Market Value}_{i,t} = f(\text{AccVar}, \text{OthFact}) + \varepsilon_{i,t} \quad (1)$$

In empirical research, absolute (share price) and relative (share return) models are applied. The price models follow the theorem of [Ohlson \(1995\)](#), and earnings and other accounting variables are tested in absolute terms. Since investors, comparing more investment opportunities, are more interested in the return on investment, share return models work with relative returns. Both approaches have particular advantages and disadvantages, as examined, e.g. by [Beisland \(2009\)](#) and [Filip and Raffournier \(2010\)](#).

Our paper adapts the model in [Equation \(1\)](#) into four submodels.

$$MVPS_{i,t} = \alpha + \beta_1 * EPS_{i,t} + \beta_2 * IFRS_t + \beta_3 * EPS * IFRS_{i,t} + \varepsilon_{i,t} \quad (\text{Model 1A})$$

$$MVPS_{i,t} = \alpha + \beta_1 * BVPS_{i,t} + \beta_2 * IFRS_t + \beta_3 * BVPS * IFRS_{i,t} + \varepsilon_{i,t} \quad (\text{Model 1B})$$

$$MVPS_{i,t} = \alpha + \beta_1 * OCFPS_{i,t} + \beta_2 * IFRS_t + \beta_3 * OCFPS * IFRS_{i,t} + \varepsilon_{i,t} \quad (\text{Model 1C})$$

$$\begin{aligned} MVPS_{i,t} = & \alpha + \beta_1 * EPS_{i,t} + \beta_2 * BVPS_{i,t} + \beta_3 * OCFPS_{i,t} + \beta_4 * IFRS_t \\ & + \beta_5 * EPS * IFRS_{i,t} + \beta_6 * BVPS * IFRS_{i,t} + \beta_7 * OCFPS * IFRS_{i,t} \\ & + \varepsilon_{i,t} \end{aligned} \quad (\text{Model 1D})$$

The purpose of these four models is to investigate the impact of IFRS adoption on the value relevance of earnings ([Model 1A](#)), the book value of equity ([Model 1B](#)) and operating cash flows ([Model 1C](#)) separately. Further, we combine all three metrics into one model ([Model 1D](#))

to assess the mutual interdependencies among the accounting variables. Moving to the *IFRS* dummy variable, it addresses our primary interest in the effects of IFRS from the investors' perspective, i.e. whether IFRS adoption has had any impact on stock returns and, hence, on the level of value relevance of financial statements. A positive coefficient for the *IFRS* dummy variable would indicate that the post-IFRS period experiences a greater degree of association of stock returns with accounting numbers than the pre-IFRS period, other factors constant. Finally, the interaction terms (e.g. *EPS\*IFRS*) indicate how the value relevance (e.g. of earnings) in the post-adoption period is moderated by the adoption of IFRS. A significant and positive coefficient of the interaction between IFRS and any variable would mean that this variable is, in the post-IFRS period, more value relevant than in the pre-IFRS period.

Company characteristics may distinctively moderate the effects of IFRS adoption, as indicated by prior accounting literature. To eliminate the compounding effect of company specifics, we extend [Model 1D](#) by including the following control variables. The dividend payout ratio (*DPS*) and leverage (*LEV*) are added as proxies for the reporting incentives that companies may face and which may also affect stock returns ([Elbakry et al., 2017](#)). Furthermore, we add an industry variable (*IND*) to erase the specifics of particular sectors of the economy. The extended [Model 2](#) is similar to those applied, e.g. by [El-Diftar and Elkalla \(2019\)](#) or [Kouki \(2018\)](#).

$$\begin{aligned} MVPS_{i,t} = & \alpha + \beta_1 * EPS_{i,t} + \beta_2 * BVPS_{i,t} + \beta_3 * OCFPS_{i,t} + \beta_4 * IFRS_t \\ & + \beta_5 * EPS * IFRS_{i,t} + \beta_6 * BVPS * IFRS_{i,t} + \beta_7 * OCFPS * IFRS_{i,t} \quad (\text{Model 2}) \\ & + \beta_8 * DPS_{i,t} + \beta_9 * LEV_{i,t} + \beta_{10} * IND_i + \varepsilon_{i,t} \end{aligned}$$

A complete list of the variables, their definitions, and their measurements are presented in [Table 3](#).

Variable		Definition	Measurement
<i>Dependent variable</i>			
MVPS	Market value per share	The market value per share of a firm's common stock three months after year-end	Firm's market value per share three months after year-end
<i>Independent variables</i>			
IFRS	IFRS adoption	Dummy variable for the adoption of IFRS	0 for the period 2014–2016 1 for the period 2017–2019
BVPS	Book value per share	The book value per share of the firm's stockholder equity	Stockholder's equity divided by common shares outstanding
EPS	Earnings per share	Portion of earnings allocated to each share of common stock	Net income before Zakat divided by common shares outstanding
OCFPS	Operating cash flows per share	Cash flow from operating activities scaled by the number of outstanding common shares	Total operating cash flow divided by common shares outstanding
<i>Control variables</i>			
DPS	Dividend payout ratio per share	Ratio of dividends paid out to shareholders relative to the income of the company	Dividend per share divided by earnings per share
LEV	Leverage	Ratio of debt incurred relative to the company's total assets	Total debt divided by total assets
IND	Industry		

**Source(s):** Authors' own work

**Table 3.**  
Definition of variables  
and their  
measurements

Table 4.  
Basic descriptive  
statistics

6. Results and discussion

6.1 Descriptive statistics and correlation analysis

Table 4 presents the descriptive statistics of the sample. The mean for all variables under study has decreased in the post-IFRS period. All medians reported in the pre-adoption period were higher than in the post-adoption period, except for *LEV* which recorded a slight increase from 0.40 in pre-adoption to 0.41 in post-adoption. The standard deviation of all the variables has decreased in the post-adoption period with the exception of *MVPS* which recorded a slight increase (from 1.34 in the pre-adoption period to 1.46 in the post-adoption period). It is also worth mentioning that the dividend payout ratio showed a significant decrease in its mean value of 4.58 and its standard deviation of 70.90 in the pre-adoption period to a mean of 0.32 and the standard deviation of 0.93 in the post-adoption period, respectively. Overall, our results show that switching to IFRS decreased the mean of all the variables used in this study. The statistical significance of these decreases between the pre- and post-adoption periods is examined by t-tests for the mean differences. The t-test results reveal significant differences with a *p* value of 0.001 for four variables, namely *MVPS*, *BVPS*, *EPS* and *OCFPS*.

A Pearson correlation matrix is calculated for the preliminary assessment of the association among the variables included in the model (see Table 5). The correlation coefficients capture the entire sample of 588 firm-year observations over the period 2014 to 2019. The dependent variable *MVPS* is positively and significantly correlated at the 99.9% significance level with

	MVPS	BVPS	EPS	OCFPS	DPS	LEV
<i>Entire sample: 2014–2019</i>						
Mean	14.62	16.45	1.14	2.84	2.46	0.42
Median	14.34	14.40	1.09	2.22	0.31	0.41
Std. Dev	1.40	9.45	3.43	3.37	50.23	0.33
<i>Pre-IFRS: 2014–2016</i>						
Mean	14.74	17.38	1.62	3.36	4.58	0.42
Median	14.50	14.82	1.62	2.76	0.39	0.40
Std. Dev	1.34	11.01	3.67	3.37	70.90	0.40
<i>Post-IFRS: 2017–2019</i>						
Mean	14.50	15.52	0.65	2.31	0.32	0.41
Median	14.20	14.18	0.65	1.69	0.00	0.41
Std. Dev	1.46	7.47	3.10	3.28	0.93	0.23
t-test	4.204***	4.239***	4.239***	4.759***	1.032	0.194

**Note(s):** \*\*\*, \*\*, and \* denote the statistical significance at *p* values equal to 0.001, 0.01, and 0.05, respectively  
**Source(s):** Authors' own work

Table 5.  
Pearson correlation  
matrix and coefficients:  
the entire sample

	MVPS	BVPS	EPS	OCFPS	DPS	LEV	IFRS
MVPS	1.000						
BVPS	0.233***	1.000					
EPS	0.437***	0.057	1.000				
OCFPS	0.411***	0.575***	0.244***	1.000			
DPS	−0.040	0.034	−0.000	−0.006	1.000		
LEV	0.144***	−0.049	−0.179***	0.084*	−0.044	1.000	
IFRS	−0.088*	−0.098*	−0.141***	−0.156***	−0.042	−0.076	1.000

**Note(s):** \*\*\*, \*\*, and \* denote the statistical significance at *p* values equal to 0.001, 0.01, and 0.05, respectively  
**Source(s):** Authors' own work

*BVPS*, *EPS*, *OCFPS* and *LEV*. On the other hand, the sample exhibits a negative correlation (on the 95% significance level) of *MVPS* with the dummy variable *IFRS*. Regarding the *DPS*, its negative correlation with *MVPS* is insignificant. Finally, the Pearson correlation matrix shows no sign of multicollinearity, as the highest significant correlation is 0.575.

## 6.2 Regression analysis

Table 6 presents the results of the pooled OLS regression for Models 1A–1D.

Standard errors of all models are double-clustered standard errors both on the firm and time level to obtain robust estimates of the parameters. According to the results of Model 1A, earnings are value relevant in the pre-adoption period, with the *EPS* coefficient of 0.135 and a *p* value less than 0.001. In the post-adoption period, even the value relevance of earnings increased, as evidenced by a positive value of 0.096 (significant at 99%) of the interaction term *EPS\*IFRS*. The overall increase in the value relevance of earnings is also confirmed by the development of the adjusted  $R^2$  which increased from 14.0% in the pre-adoption period to 23.2% in the post-adoption period. Our results are consistent with those by Alali and Foote (2012) or Desoky and Mousa (2014) but opposite to other evidence, e.g. by El-Diftar and Elkalla (2019). Finally, the impact of *IFRS* in Model 1A is neutral, as the negative coefficient of  $-0.181$  is not statistically significant.

Moving to the results of Model 1B, the *BVPS* coefficient of 0.009 is statistically insignificant, suggesting that accounting information regarding the book value of equity under Saudi GAAP was not value relevant. However, IFRS adoption has changed the situation. The book value of equity is positively associated with the market value of a company's share (*BVPS\*IFRS* of 0.075 with a *p* value less than 0.001). Our results are consistent with the previous evidence for Saudi Arabia provided by Alomair *et al.* (2022) or by Chebaane and Othman (2014) for other countries in the MENA region. On the other hand, Khanagha (2011) identified the opposite, i.e. a decline in the value relevance of equity. In addition to the different economic, political or regulatory conditions, the potential explanation of the cross-country variations can also be attributed to the different methodologies applied. Prior studies usually run regressions separately for two subsamples (before and after IFRS adoption), and inferences are made only by comparing the pair of corresponding coefficients. Our approach, with a separate *IFRS* dummy variable and an interaction term, offers a more robust interpretation of the outcomes [3]. The negative value of the *IFRS* dummy variable may mirror investor concerns about the IFRS adjustments

	Model 1A	Model 1B	Model 1C	Model 1D
Constant	14.526*** (0.075)	14.582*** (0.139)	14.280*** (0.103)	14.346*** (0.130)
<i>IFRS</i>	−0.181 (0.102)	−1.394*** (0.224)	−0.248 (0.137)	−0.875*** (0.204)
<i>EPS</i>	0.135*** (0.020)			0.104*** (0.019)
<i>EPS*IFRS</i>	0.096** (0.031)			0.081** (0.30)
<i>BVPS</i>		0.009 (0.007)		−0.013 (0.008)
<i>BVPS*IFRS</i>		0.075*** (0.012)		0.055*** (0.013)
<i>OCFPS</i>			0.138*** (0.022)	0.137*** (0.027)
<i>OCFPS*IFRS</i>			0.062 (0.032)	−0.023 (0.036)
<i>F</i> -test	49.11***	24.18***	39.93***	39.40***
$R^2_{\text{adjusted}}$ Entire period	19.7%	10.6%	16.6%	31.4%
$R^2_{\text{adjusted}}$ PriorIFRS	14.0%	0.3%	12.7%	22.4%
$R^2_{\text{adjusted}}$ PostIFRS	23.2%	17.9%	18.3%	36.9%

**Note(s):** \*\*\*, \*\*, and \* denote the statistical significance at *p* values equal to 0.001, 0.01, and 0.05, respectively

**Source(s):** Authors' own work

**Table 6.**  
Regression analysis:  
basic models



tailored by Saudi Arabian authorities to align IFRS guidance with local specifics. However, once controlled for these potential threats, similarly to the approach adapted by [Outa et al. \(2017\)](#), the book value of equity under IFRS better reflects the market value of companies.

It should be highlighted that one of the adjustments adopted by SOCPA allows the application of the historical cost model only for PPE and investment properties. An increase in the value relevance of the book value of equity due to a better match between assets' fair values and the market value of company shares, as predicted by other prior studies, is, thus, considerably limited in the case of Saudi Arabia. Despite the restrictions on fair value measurement, IFRS adoption has brought benefits for investors interested in the accounting measurement of equity, as also evidenced by the adjusted  $R^2$  values in [Model 1B](#) (0.3% before IFRS adoption and 17.9% in the post-adoption period, respectively). Regarding our findings for [Model 1C](#), operating cash flows are value relevant regardless of the reporting standards applied. Although the coefficient of OCFPS in the post-adoption period is higher than in the pre-adoption period (the parameter of  $CFOPS*IFRS$  is equal to 0.062), the increase is not identified as statistically significant.

[Model 1D](#), which combines all three accounting variables (earnings, equity, cash flows), is consistent with the separate [Models 1A-1C](#). Earnings and operating cash flows are value relevant before and after IFRS adoption; however, only earnings become more relevant in the post-adoption period. Equity is value relevant under the IFRS regime only. Finally, the negative association of the *IFRS* variable identified in [Model 1B](#) is also captured by the combined [Model 1D](#). The positive signs of the coefficients of the interaction terms  $EPS*IFRS$  and  $BVPS*IFRS$  are possibly indicative of an increase in value relevance in the post-adoption period, as market participants become more familiar with the specifics of IFRS and their principal differences to the previously applied Saudi GAAP.

The value relevance of accounting information can also be affected by specific company characteristics ([Alomair et al., 2022](#)). Therefore, [Model 2](#) attempts to verify whether the increase in the value relevance of accounting information in the post-adoption period, indicated by the results of [Models 1A-1C-1D](#), also holds when controlling for other potentially compounding factors. Standard procedures were run to calculate the regression results. We computed the pooled OLS model, the fixed effects model with individual effects, time effects and both effects and the random effects model. The first set of tests (F-test, Breusch-Pagan LM test, Wooldridge test and Hausman test) was used to select the most appropriate model. The second set of tests controlled for the validity of assumptions regarding homoscedasticity, cross-dependence, or serial correlation. [Table 7](#) shows the regression results of [Model 2](#). Firstly, we present the results using double-clustered standard errors (on individual and time levels). Secondly, we calculated the generalized two-step method of moments to control for unobserved heterogeneity and endogeneity. Finally, we present the results of the Prais-Winsten estimator, which corrects for the serial correlation detected.

The regression results for the entire period from 2014 to 2019 indicate an adjusted  $R^2$  of over 43% with the F-statistic significant at a  $p$  value of less than 0.001. Thus, they provide evidence of the overall usefulness of the model. Regarding the sign and significance of accounting metrics, they are consistent with the basic [Model 1D](#). *EPS* and *OCFPS* are positively associated with *MVPS* ( $p$  value less than 0.001) throughout the entire period. The interaction term  $IFRS*EPS$  is significantly positive, showing that IFRS adoption is connected with a stronger association between earnings and market stock returns (on the 95% significance level).

Similarly, a significantly positive coefficient is available for the interaction term  $IFRS*BVPS$  which means that the value relevance of the book value of equity has also increased due to IFRS adoption. Since the book value of equity was not statistically significant for the pre-adoption period (see the results for *BVPS*), IFRS adoption changes the relevance of this accounting figure from the perspective of investors (the coefficient of

	Clustered SE	GMM	PW correction	Prior IFRS	Post IFRS
Constant	14.662*** (0.218)	14.662*** (0.505)	14.593*** (0.219)	14.876*** (0.248)	13.113*** (0.346)
<i>IFRS</i>	-0.861*** (0.188)	-0.861*** (0.231)	-0.866*** (0.185)		
<i>EPS</i>	0.126*** (0.018)	0.126*** (0.028)	0.128*** (0.018)	0.125*** (0.019)	0.202*** (0.021)
<i>EPS*IFRS</i>	0.068* (0.027)	0.068* (0.020)	0.068* (0.027)		
<i>BVPS</i>	-0.009 (0.007)	-0.009 (0.009)	-0.007 (0.007)	-0.001 (0.008)	0.055*** (0.010)
<i>BVPS*IFRS</i>	0.055*** (0.012)	0.055*** (0.014)	0.056*** (0.012)		
<i>OCFPS</i>	0.125*** (0.025)	0.125*** (0.023)	0.121*** (0.024)	0.130*** (0.026)	0.066* (0.024)
<i>OCFPS*IFRS</i>	-0.022 (0.033)	-0.022 (0.029)	-0.024 (0.033)	0.763*** (0.160)	1.638*** (0.301)
<i>LEV</i>	0.921*** (0.138)	0.921*** (0.241)	0.946*** (0.139)	-0.001 (0.001)	Included
<i>DPS</i>	0.001 (0.001)	0.001* (0.001)	0.001 (0.001)	Included	Included
Industry effects	Included	Included	Included	Included	Included
Firm and time effects	Included	Included	Included	Included	Included
<i>F</i> -test	33.03***	x	33.00***	17.05***	28.6***
<i>R</i> <sup>2</sup> <sub>adjusted</sub>	43.3%	x	43.2%	35.4%	48.5%

**Note(s):** \*\*\*, \*\*, and \* denote the statistical significance at *p* values equal to 0.001, 0.01, and 0.05, respectively

**Source(s):** Authors' own work

**Table 7.**  
Regression analysis:  
extended model

*BVPS\*IFRS* significant at a  $p$ -value less than 0.001). Lastly, despite a negative coefficient of the *OCFPS\*IFRS*, it is not statistically significant, and we may conclude that the value relevance of cash flows remains unchanged after IFRS adoption. All three model specifications produce the same results, even if controlled for company-specific factors (industry, leverage and dividend policy).

The *IFRS* dummy variable, other factors fixed, remains a significant negative determinant for *MVPS*, as indicated in [Model 1D](#). The negative coefficient of the *IFRS* variable, indicating diminishing value relevance in the post-adoption period, can be a crucial message for regulators and policymakers attempting to improve the quality of financial reporting. Adapting enforcement measures may be necessary to address the common concerns of investors with IFRS, especially around the time of their first adoption by firms ([Ball, 2006](#)). However, an alternative explanation of the negative *IFRS* coefficient can refer to the adjustments approved by SOCPA to align the requirements of IFRS with the Islamic values and other local specifics ([Almansour, 2019](#)). In other words, the negative coefficient of the *IFRS* dummy may address investor concerns about regulatory failures, instead of the negative impact of some IFRS principles on the decision-usefulness of financial statements in emerging markets, as evidenced in several MENA countries by prior literature ([Khanagha, 2011](#); [El-Diftar and Elkalla, 2019](#)).

The additional analysis of [Model 2](#) can support such an inference by splitting the sample into pre-adoption (2014–2016) and post-adoption (2017–2019) subsamples. The results presented in the fifth and sixth columns of [Table 7](#) are consistent with the results of the previous model specifications using the entire sample. In particular, earnings are value relevant in both periods with a higher coefficient in the post-adoption period representing a positive impact of IFRS on the usefulness of accounting earnings. As indicated by the interaction term *IFRS\*BVPS* in the pooled sample, the book value of equity becomes value relevant in the post-adoption period. The positive impact of IFRS adoption on the value relevance of book value of equity signals that IFRS is better at depicting value creation by firms than the previous Saudi GAAP, even when considering the carve-outs and other amendments to IFRS. Cash flows are statistically significant in both periods, although the value relevance of cash flows decreased in the second period.

The relative decrease in the value relevance of cash flows can result from enhancements in the value relevance of earnings and equity under IFRS. This substitution effect, i.e. the increased relative usefulness of earnings and equity information accompanied by a lower relative value relevance of cash flow information, mitigates the previous conclusions concerning the overall unfavourable impact of IFRS adoption based on the negative value of the *IFRS* variable in the pooled sample. The overall value relevance of accounting information is higher once the listed firms have shifted to IFRS, as indicated by the adjusted  $R^2$  (35.4% in the pre-adoption period compared to 48.5%).

The findings of [Model 2](#) can be interpreted in the way that IFRS adoption has ambiguous and not straightforward effects on the value relevance of accounting information in the Saudi Arabian market. Although the negative *IFRS* dummy signals a negative assessment of the adoption process by investors, we identify the increase in the value relevance of earnings and equity. These increases compensate for the decrease in the value relevance of cash flows; hence, IFRS adoption improved the overall usefulness of financial statements for investors. A possible explanation of this substitution effect is that IFRS-based earnings capture a firm's expected cash flows better than the actual cash-flow metrics ([Barton et al., 2010](#)), and the assumptions of the classical dividend discount model are better met ([Nichols and Wahlen, 2004](#)). Stronger adherence to cash flows in the pre-adoption period to eliminate the shortcomings in Saudi GAAP concerning their usefulness in assessments of performance and value generation is no longer perceived as necessary by investors following the adoption of IFRS by companies.

### 6.3 Robustness analysis

To double-check the results, we performed several procedures, including calculating robust standard errors according to different methodologies or subsampling (some of the results are presented in Table 7). Furthermore, we performed an additional analysis concerning the control variables. The dividend payout ratio and leverage may have materially changed due to the transition to IFRS. As IFRS contains different criteria for recognising assets and liabilities, leverage calculated using the information from financial statements may have changed not due to an adopter's financial policy, but only due to a change in the accounting standards applied. To control for the potential source of this endogeneity [4], we split the sample into quartile subsamples, ordering the firms according to the level of their leverage and the magnitude of earnings distributed, respectively. Table 8 summarises the results for both variables and each quartile separately.

For low-leveraged firms (quartiles *LEV Q1* and *LEV Q2*), the IFRS dummy variable is not statistically significant (coefficients 0.164 for *LEV Q1* and  $-0.344$  for *LEV Q2*). Low indebtedness usually implies insignificant risks perceived by equity investors. The transition to IFRS, even if it led to financial statements producing less favourable performance, liquidity and other financial metrics, would be unlikely to affect the reported leverage materially. Hence, investors evaluate the fundamental accounting variables similarly regardless of the reporting regime applied, as indicated by the insignificance of all three interaction terms in subsamples *LEV Q1* and *LEV Q2*. The book value of equity is a variable, with value relevance stable before and after IFRS adoption (the coefficient 0.049 significant at a  $p$ -value less than 0.05 for *LEV Q1* and the coefficient 0.054 with a  $p$ -value less than 0.001 for *LEV Q2*, respectively). Furthermore, earnings (*EPS* equal to 0.384) are statistically significant (at the 99.9% significance level) for firms included in *LEV Q2*.

Investors react quite differently to the adoption of IFRS by highly leveraged firms (subsamples *LEV Q3* and *LEV Q4*). The dummy variable *IFRS* is negative (the coefficient  $-1.734$  for *LEV Q3*, significant at 99% and  $-1.592$  for *LEV Q4*, significant at 99.9%). Furthermore, the value relevance of earnings and equity increases in the post-adoption period, as indicated by the positive and statistically significant coefficients of *EPS\*IFRS* and *BVPS\*IFRS*, respectively. In the case of the most indebted firms (*LEV Q4*), all three fundamental accounting metrics (*EPS*, *BVPS*, *OCFPS*) are value relevant throughout the entire period, although negative in the case of *BVPS*. The observed association between accounting variables and share prices is consistent with the decision-usefulness theory which predicts that a rational risk-averse investor will value more information regarding the economic fundamentals of companies significantly exposed to risk, proxied, e.g. by high leverage.

The quartile regressions also offer additional insights into the results of Model 2. Firstly, earnings (*EPS*) are value relevant for all companies (except for *LEV Q1*) and, therefore, on aggregate in Model 2. Cash flows (*OCFPS*) transmit value-relevant information only for the most leveraged firms (*LEV Q4*). In addition, the quartile regressions can explain why the overall Model 2 identifies insignificant relevance of the book value of equity. As can be seen, the coefficient of *BVPS* is significantly positive for *LEV Q1* and *LEV Q2* but significantly negative for *LEV Q4*. These divergent patterns are mutually eliminated in the sample, leading to an insignificant coefficient in Model 2. On the other hand, an increase in the value relevance of equity in the post-adoption period identified by Model 2 is also confirmed by subsampling. This increase is attributable to highly leveraged firms (*LEV Q3* and *LEV Q4*). Regarding the impact of IFRS adoption on earnings, Model 2 shows an overall positive and significant association. This positive direction is only identified for *LEV Q4*; moreover, firms belonging to *LEV Q3* react oppositely.

Comparable moderating effects can be found when inspecting quartile regression for the *DPS* variable. Earnings (*EPS*) are relevant across all subsamples except for *DPS Q2*. An



increase in the value relevance in the post-adoption period is detected only for firms with a low level of dividends distributed (the coefficient  $EPS*IFRS$  of 0.095 with a  $p$  value less than 0.05 for *DPS Q1*). In contrast to the leverage subsamples, there are no divergent trends for this interaction term in the *DPS* subsamples. The value relevance of the book value of equity produces inconclusive outcomes again, as *BVPS* is significantly negative for *DPS Q1* but significantly positive for *DPS Q3*. The increased usefulness of accounting information concerning equity after IFRS adoption can be attributed to firms with the lowest payout ratio (*DPS Q1*) and firms with the highest level of profit distribution (*DPS Q4*). Cash flows metrics are important for investors if the payout ratio is below the median (*DPS Q1* and *DPS Q2*). Finally, the variable *IFRS* is negative for firms belonging to *DPS Q1* which are companies reluctant to distribute profits (either due to low profits or having adopted such a policy). The impact of IFRS adoption on such firms is perceived as harmful by investors (coefficient  $-1.041$  at the 99.9% significance level).

It can be concluded that the robustness tests shed another light on the impact of IFRS adoption on the value relevance of accounting information of firms listed in the Saudi Arabian capital market. An increase in the decision-usefulness of accounting earnings and the book value of equity is mainly pronounced for highly-leveraged and low-profitable firms, which can be perceived as the riskiest option from an investor perspective. Our findings suggest that IFRS can better capture a firm's performance and financial situation than previous GAAP for these risky firms. However, as the negative coefficient of the *IFRS* dummy variable persists, investors charge a premium for these risky firms due to IFRS adoption.

An unanswered question to be resolved in future research is the exact source of this adverse effect of IFRS adoption perceived by equity investors. Does it reflect concerns about the unsuitability of underlying concepts of IFRS, the inability to address all of the local specifics of Saudi Arabia, as suggested, e.g. by [Yamani and Almasarwah \(2019\)](#)? Or is this an individual effect attributable only to underperforming firms suffering from a lack of government support or insufficient IT systems to apply IFRS effectively, as evidenced in Jordan by [Sawalqa and Qtish \(2021\)](#)? Finally, can the premium charged by investors address their concerns stemming from the decision of the Saudi Arabian authorities to substantially carve out, adjust and amend the official text of IFRS to suit local needs, which may, in contrast, impair the usefulness of financial statements, in particular of risky firms? In other words, do investors penalise the inferior firms for the weaknesses of the IFRS adoption strategy taken by Saudi Arabia ([Ben Othman and Kossentini, 2015](#); [Agyei-Boapeah et al., 2020](#))?

## 7. Conclusions

The objective of this paper was to empirically test the impact of IFRS adoption on the value relevance of financial statements of publicly traded firms in Saudi Arabia. While investigating the context of IFRS adoption in Saudi Arabia from different perspectives, we extend the work of previous studies related to this topic, e.g. [Herath and Alsulmi \(2017\)](#), [Alnodel \(2018\)](#), [Nurunnabi et al. \(2020\)](#), [Hashed and Almaqtari \(2021\)](#) or [Aldoseri et al. \(2021\)](#). In particular, we provide evidence on whether IFRS adoption has affected the usefulness of financial reporting, proxied by value relevance, from an investor perspective.

Our models, capturing the interactions between the accounting metrics in question (earnings, equity, cash flows) and IFRS adoption, show a significant negative coefficient on *IFRS per se*, possibly suggesting that IFRS decreases the value relevance of accounting information. However, we identify an increase in earnings and equity value relevance when investigating individual accounting metrics. The increase in the value relevance of equity is so extensive that the statistically insignificant association in the pre-adoption period becomes



significant in the post-adoption period. Our results are, thus, consistent with the findings of [Alomair et al. \(2022\)](#). However, the increased value relevance of earnings and equity in the post-adoption period is partially negated by a decrease in the value relevance of cash flow. This finding suggests that IFRS adoption could have considerably improved the usefulness of earnings and the book value of equity, reducing the extent to which investors rely on cash flow-related accounting information in their business valuations. A robustness analysis reveals that individual company characteristics (such as leverage or dividend policy) may moderate the effects of IFRS adoption and be a source of heterogeneity in real outcomes. In particular, the increases in the value relevance of earnings and the book value of equity are mainly attributable to highly leveraged and low-profitable firms, which are, other factors constant, under more detailed examination of investors. It can be, thus, concluded that IFRS can better address the book and market value of equity. This advantage persists even though fair value measurement of some assets is not allowed by the IFRS strategy adopted by the Saudi Arabia regulatory body.

Our paper contributes to the ongoing discussion of the economic effects of IFRS adoption in emerging markets. Our empirical findings reveal that the early phase of IFRS adoption may be associated with a general decline in the value relevance of accounting information. In general, such results are explained by deficiencies in enforcement mechanisms related to IFRS adoption and weak investor protection. However, the detailed examination of different accounting figures provides evidence that IFRS adoption has increased the explanatory power of earnings and equity on stock market returns compared to the pre-adoption period. Therefore, it can be assumed that the initial negative perception of IFRS adoption can mirror those naturally arising concerns when significant changes in the financial reporting system occur. As evidenced in other emerging markets (e.g. [Závodný and Procházka, 2022](#)), IFRS adoption is accompanied by an initial transition period, during which stakeholders gradually acquire knowledge of new accounting standards and their impact on financial statements. It is natural, then, that adopting high-quality but complex reporting standards, such as IFRS, does not improve accounting quality immediately. The improvement occurs later as users, preparers, auditors, regulators and other stakeholders become more familiar with the specifics of IFRS.

In this sense, our results also indicate that IFRS adoption in Saudi Arabia benefits users, especially equity investors, but not in a straightforward way. The substitution effect between the increased value relevance of earnings and the book value of equity together with the decreased value relevance of cash flows has a short-term negative impact. Still, it is expected to benefit investors in the long run, as suggested by previous literature ([Barton et al., 2010](#)). Future research may investigate whether IFRS adoption impacted the dynamics of trading (e.g. the cross-sectional differences in the volume of trades, changes in the composition of investors, including attracting foreign investors, etc.) and confirm the hypothesis of long-term benefits.

The next issue to be addressed in future research relates to the nature of the negative effect of IFRS adoption, which was found for firms with high leverage or a low dividend payout ratio. Using the prior literature from emerging markets, we suggest three possible explanations for this adverse effect. Firstly, the adverse effect may reflect the individual conditions of companies lacking adequate support to prepare high-quality IFRS financial statements. Alternatively, investors may perceive IFRS as partially unsuitable for producing useful information about a specific group of companies operating in Saudi Arabia (particularly those facing significant business risks). Finally, the adverse effect of IFRS adoption can be grounded in the decision of Saudi Arabian authorities to amend the text of IFRS substantially. Investors may indirectly penalise governmental bodies for this regulatory intervention that reduces the international comparability of IFRS financial statements published by Saudi firms. Future research successfully discovering the

determinants of this adverse effect may deliver important recommendations either to the IASB on how to tailor IFRS to reflect the specifics of emerging markets better. Alternatively, the findings may be essential to the Saudi Arabian authorities to modify the approach to IFRS adoption strategy to increase the benefits of accounting harmonisation.

Our results, namely the discovery of the substitution effect, also lead to several policy recommendations. Firstly, stock exchanges and public authorities should be proactive in explaining the expected benefits and risks of the adoption process to users, particularly those non-professional investors, including clear communication on how enforcement measures are to be adapted to address the common concerns of investors and other users. Secondly, primarily involved parties (preparers, auditors and enforcers) should thoroughly plan the implementation process and include sufficient training of the staff responsible for the transition. Finally, the improvements in IFRS practices by local issuers can be supported by the presence of foreign companies boasting a successful implementation experience of IFRS in the past. Attracting foreign issuers from countries with a working IFRS environment, e.g. for cross-listing on a domestic stock exchange, can be essential in promoting the import of best practices. However, restrictions on foreign companies listed on the national stock exchanges are still common in the MENA region and undermine the improved functionality of capital markets while reducing economic growth. Capital market restrictions can prevent higher accounting quality from being achieved and harm the fulfilment of the objectives stipulated in “Saudi Vision 2030” and other national strategies similarly adopted by other countries in the region.

The major limitation of this study is the short period of time, namely three years, presented for the post-adoption period. Another factor to bear in mind is that although this study investigates the value relevance of several variables, other researchers have also examined the value relevance of other variables not tested in this paper. It can also be noted that some studies (Elbakry *et al.*, 2017) have employed other research techniques, such as the vector error correction model. The final limitation of our results may stem from the general methodological limitations of the Ohlson and Feltham-Ohlson models, which assume unbiased accounting asset valuations. Conservative accounting systematically undervalues operating assets and produces a downward bias in the book value of equity. Since IFRS requires or permits fair value measurement at a greater extent than Saudi GAAP, the informativeness of an increase in book value after IFRS adoption, as documented in our study, can result from differences in measurement. However, we recall that SOCPA banned fair value measurement for selected classes of assets, and this transmission mechanism, postulated by Alomair *et al.* (2022), is, therefore, limited in our sample. Building on this fact, we recommend, in addition to the proposals outlined above, that future research investigate value relevance across individual areas of financial reporting (such as revenue, gross margins, EBIT, different classes of assets, return on assets and other key performance metrics) as well as examine the reaction of users of financial statements to those items that deviate from the official IFRS text due to amendments approved by SOCPA. A further examination and discrimination of the value relevance determinants may be useful to regulators, firms and users alike.

## Notes

1. The Organization of the Petroleum Exporting Countries (OPEC) controls approximately 75% of the world's oil reserves. However, the OPEC share on mining is “only” about one-half and its share on exports about one-third. This may be one of the reasons why such coordination does not always affect global prices as intended.
2. The IASB's country profile is available at <https://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/view-jurisdiction/saudi-arabia/>

3. We admit the *IFRS* dummy variable can be correlated with an exogenous variable not included in [Models 1A-1D](#), which would affect the interpretation of the results. However, we partially control for this spurious correlation by double-clustering standard errors. Secondly, the results of these basic models are, in general, consistent with the findings of the extended [Model 2](#) and follow-up robustness analysis.
4. Potentially not removed by the GMM estimator, used to estimate [Model 2](#) (the results presented in [Table 7](#)).

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