The Concurrent Effects of IFRS Mandate and Formal Institutional Quality on the Aftermarket Performance of IPO Firms in Emerging Countries (Note 1)

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Abstract

This paper provides the first empirical investigation seeking to find whether International Financial Reporting Standards (IFRS) mandate, changes in the quality of formal institutions, or, the concurrent effect of these two elements can explain the ongoing phenomenon of the aftermarket performance difference of Initial Public Offerings (IPO) firms. We perceive little awareness of the concurrent effect of IFRS mandate and the quality of formal institutions in emerging countries, although these nations account for more than half of the IFRS mandating countries. We employ numerous Difference-in-Differences (DiD) models utilizing reliable IPO and formal institutional data for Saudi Arabia from 2005 to 2017. Our empirical results show that the absence of IFRS influence in the aftermarket performance of IPO firms led us to posit that the quality of formal institutions is the key player in influencing long-term performance of IPO firms in Saudi Arabia. We uncover evidence showing that an improvement in formal institutional quality increases the long-term performance of IPO firms. We find no evidence of a concurrent effect of changes in formal institutional quality and IFRS mandate on the aftermarket performance of IPO firms. Our results show that what does really matter in relation to the aftermarket performance of IPO firms in Saudi Arabia, are the enhancements in the level of formal institutional quality. Our results provide some important implications for IFRS-IPO research.

Keywords: international financial reporting standards, accounting disclosure, long-term performance, concurrent effect, formal institutional quality, emerging countries, difference-in-differences, information asymmetry

1. Introduction

There is an ongoing debate amongst IFRS researchers emphasizing that country-level institutional environments largely influence the accounting systems’ quality beyond any existing accounting standards (Daske et al. 2008; Christensen et al. 2013; Ball 2016). This perspective has allowed a concurrent effect concept to emerge in the IFRS literature. It entails that when countries intend to introduce mandatory IFRS reporting, at the same time, they may deliberately embark on improving the quality of their formal institutional environment such as the legal system in order to support the implementation of IFRS standards (Daske et al. 2008; Persakis & Iatridis 2017). Not accounting for such a concurrent effect encourages some IFRS scholars to question the results of IFRS studies that have examined the influence of IFRS mandate on capital markets, based on a possible identification problem (Brüggemann et al. 2013; Christensen et al. 2013). The source of this misidentification is that this concurrent effect makes it problematic to attribute the perceived capital market benefits to: IFRS mandate only; changes in the overall formal institutional environment in an economy; or the introduction of both (Brüggemann et al. 2013; Persakis & Iatridis 2017).

This paper answers a call made by Daske et al. (2008) and Christensen et al. (2013). The former supports the need for more empirical research into the concurrent-effect problem by stating: “Investigating this conjecture and the role of countries’ enforcement regimes, which still differ considerably across IFRS countries, is an interesting avenue for future research”. Moreover, the latter emphasizes the importance for more research to assess whether the effects of the economic benefits of IFRS mandate may extend to other capital markets; for example, for IPO firms in emerging
countries.

The IFRS-IPO literature documents two market phenomena repeatedly occurring to IPO firms including the short-term and long-term performance difference. The former takes place in the primary (Note 2) market which refers to the reoccurring abnormality of the share prices of newly listed corporations jumping excessively on the first trading day from their offer price. The large variance between the closing price and offer price of the IPO firm results in a widely-known phenomenon commonly called “IPO underpricing” (Shi et al. 2013). The second market phenomenon occurs in the secondary markets showing that IPO firms tend to underperform a relative benchmark, commonly used as the general market index, in the long run including months and years (Dorsman et al. 2010; Zattoni et al. 2017). A current example of the two phenomena is the technology ride-hailing company, Lyft, that went public on the NASDAQ in March 2019 with an offering price of $72 a share. Positive outlooks about the company’s future financial prosperity are channelled to IPO investors. This information elevated investors’ sentiment and led to the first-day closing price growing by 20% (Note 3) to $87.24 a share, giving the ride-hailing pioneer a $26.6 billion valuation (Furtune 2019). However, within seven months after listing, numerous items of negative accounting news began arriving at the market including fraud lawsuits regarding misleading financial information in the prospectus compounded with weak first quarter financial results. This information largely revised IPO investors’ overoptimism about the initial evaluation and future stability of Lyft, causing the share price of Lyft to plunge to $39 per share in October 2019, thereby losing roughly 84% of its initial valuation. In the same timeframe, the NASDAQ composite index gained almost 12.50% as it moved from a record of 7,595 to 8,103 points (The New York Times 2019). Hence, Lyft surely underperforms its general market index, the NASDAQ, by almost 96.5% in this seven-month window. However, the interesting question is: How IFRS mandate could contribute in explaining the formation of such two reoccurring market phenomena?

The IFRS-IPO literature claims that a high level of asymmetric information in the IPO market is frequently attributed to those two stock market phenomena (Dorsman et al. 2010; Otero & Enríquez 2012; Hong et al. 2014; Berk & Peterle 2015; Brogi et al. 2020; Lee et al. 2020). On this issue, proponents of IFRS assert that a set of high-quality financial reporting standards will surely increase reporting transparency, leading to less information asymmetry between users of financial reports after IFRS has been mandated (Horton et al. 2013; Hong et al. 2014; Aksu & Espahbodi 2016; Lim et al. 2016; Ozkan et al. 2019). IFRS-IPO scholars including Otero and Enríquez (2012) (Note 4), Hong et al. (2014) (Note 5), and Lee et al. (2020) (Note 6) empirically find that the IFRS mandate can improve the level of information quality of IPO companies by deterring managers’ discretion to self-select accounting methods. Otero and Enríquez (2012) and Hong et al. (2014) discover enhanced reporting transparency of IPO prospectuses which led to better information symmetry among IPO participants, which reduced IPO underpricing. Yet, while this literature focused on the first phenomenon known as “IPO underpricing” mainly in developed countries, it was completely silent on the effect of IFRS mandate on the second phenomenon, i.e. “the aftermarket performance of IPO firms”.

According to IASPlus (2019), 166 countries have made public commitments permitting their corporations listed on their equity markets to partially or fully converge with IFRS standards, of which 53% are defined as emerging countries. Officials in emerging market economies, consequently, are challenged with a very problematic decision. Should they impose accounting regulations that accelerate the complete conversion to IFRS standards to achieve the claimed IFRS benefits of better accounting quality perceived mostly in the IPO market in developed market economies? Or should they initiate reforming plans to enhance the overall formal institutional environment in order to support the effect of IFRS to materialize? Or, IFRS standards simply exert no effect on the IPO market in emerging countries, hence they would be better of working hard only on improve the quality of their formal institutions since this element only matters to their IPO markets in the long-term?

We see no or little awareness of the concurrent effect of IFRS mandate and changes in formal institutional quality on the aftermarket performance of IPO firms in emerging countries. We therefore examine three scenarios. The first scenario is one where it is only the application of IFRS that impacts on capital market outcomes, including the aftermarket performance of IPO firms. The second scenario is one where a positive change in the formal institutional quality only exerts a positive effect on the long-term performance of IPO firms. The third scenario is that a combined effect of IFRS mandate and improvements in the formal institutional quality exert a positive effect on the aftermarket performance of IPO firms in emerging countries such as the kingdom of Saudi Arabia. The Kingdom provides a good model for investigating this concurrent effect concept in emerging countries for several reasons (Note 7). To reach our empirical results, we use numerous DiD models employing a total sample of 100 IPO companies and time-variant formal institutional data for Saudi Arabia from 2005 to 2017.

Our results show that IFRS does not provide tangible economic benefits for the long-term performance of IPO firms
in Saudi Arabia. This made us conclude that IFRS mandating does not offer long-lasting effects in the IPO market. In contrast, IFRS sustains only a short-lived influence on the problem of asymmetric information in the IPO market. The absence of IFRS influence in the aftermarket performance of IPO firms led us to posit that the quality of formal institutions is the key player in influencing long-term performance of IPO firms in Saudi Arabia. We uncover evidence showing that an improvement in formal institutional quality by one point, increases the long-term performance of IPO firms by up to 84%. We find no evidence of a concurrent effect of changes in formal institutional quality and IFRS mandate on the aftermarket performance of IPO firms. Stated differently, our result infers that IFRS succeeds in reducing information asymmetry problems in the primary market by offering investors and analysts additional and quality information related to IPO firms. In the secondary market, however, IFRS fails to produce any benefits to users of financial reports for IPO firms post-listing. Consequently, we assert that the superior market information populating the secondary market significantly reduces the ability of IFRS to provide benefits to users of financial reports in IPO firms even in Saudi Arabia. This weakened role could be related to the informational nature of the secondary market, where relevant and reliable information about listed firms is readily available. This abundance of information can perhaps help IPO parties capture the fair market value of IPO stocks post-listing, which probably reflects the aftermarket price performance. A battery of sensitivity tests is integrated into the process of generating our findings, ensuring the trustworthiness of the attained conclusions.

Research in the IFRS and IPO fields may benefit from our results of the concurrent effect notion. This relates to whether the possible economic effect on the aftermarket performance of IPO firms is exclusively due to either the IFRS mandate, changes in the quality of formal institutions, or, to the concurrent effect of these two elements. Saudi Arabia’s acceptance to the application of IFRS is dissimilarly driven by the European harmonization initiatives that took place concurrently with the introduction of mandatory IFRS reporting in 2005 (Daske et al. 2008; Christensen et al. 2013; Persakis & Iatridis 2017). In fact, Saudi Arabia, similar to many emerging market economies, undertook prominent reforms to its formal institutions when IFRS was officially mandated in 2008 (Note 8). To the best of our knowledge, no existing empirical work has tried yet to formally address the concurrent effect concept of the IFRS mandate and changes in the quality of formal institutions in emerging countries. IFRS-IPO researchers may revise their expectations about the implications of IFRS as we find that IFRS mandating has only a short-lived effect and no long-lasting impact on information asymmetry in the IPO market. Alternatively, what does really matter in relation to the aftermarket performance of IPO firms in emerging countries such as Saudi Arabia, are the improvements in the level of formal institutional quality.

This paper is organized into six sections. Section 2 provides a brief literature review while Section 3 provides the research question and hypotheses development. Section 4 outlines the employed data and methodology. Section 5 presents the empirical results and discussion and lastly, Section 6 draws the conclusion of our work.

2. Brief Literature Review

IFRS literature has raised a controversial topic regarding possible existence of identification problem in previous studies that examined the influence of IFRS mandate on capital market outcomes (Christensen et al. 2013; Persakis & Iatridis 2017). They claim that when states intend to introduce the application of IFRS, they are likely to initiate other changes to the financial reporting system, and it is this “concurrent-effect” that is probably attributable to the observed capital market effects. These changes are probably connected with the quality of that state’s pre-existing institutional systems where these changes may explain the mixed outcomes of the economic benefits of IFRS mandate on the accounting quality of listed firms in other studies (Daske et al. 2008; Christensen et al. 2013; Ball 2016). It is, therefore, challenging whether to attribute the witnessed capital market effects to the single effect of IFRS mandate or to the initiated changes to a country’s formal institutional environment or to a concurrent-effect of both elements (Brüggemann et al. 2013; Ball 2016; Persakis & Iatridis 2017).

Researchers recognize the institutional setting of a nation both formally, such as its legal framework (Note 9), and informally, such as the cultural framework to have an impact on the performance of IPO firms (Hong et al. 2014; Zattoni et al. 2017; Chourou et al. 2018). This school of thought stresses that besides the features of IPO firms that are likely to create the problem of asymmetric information between IPO parties, the long-term performance of IPO firms in stock markets can be improved or extremely compromised by countries’ predominant legal and cultural frameworks. Accordingly, dissimilarities in the quality of country-level formal and informal institutional quality can influence the perceived level of information asymmetry in the IPO market, consequently impacting on the observed level of aftermarket performance of IPO firms from country to country.

Current IFRS-IPO literature concentrates on the short-term performance of IPO firms and highly dedicated to developed countries include Otero and Enríquez (2012) (Note 10), Hong et al. (2014) (Note 11), and Lee et al. (2020) (Note 12). We see no awareness of the concurrent effects of IFRS mandate and institutional changes on the long-term
performance of IPO firms in emerging countries. Dorsman et al. (2010) provide the only empirical examination regarding the effect of IFRS mandate on the long-term performance of IPO firms in a developed country. The authors examine 141 Dutch IPOs listed over the period 1990-2011 showing that these firms underperform the general market index. However, this level of underperformance falls slightly after mandating IFRS in 2005.

Since the mandatory adoption of IFRS in Saudi Arabia in 2008, only a few IPO studies have studied the long-term performance of IPO firms. For example, Alanazi and Al-Zoubi (2015) find that Saudi Arabian IPO firms underperform the Saudi Arabian all shares index, Tadawul, by 8.92%, in a one-year window. In contrast, Kamaludin and Zakaria (2018) find IPO firms listed in Saudi Arabia outperform Tadawul by 22% in a 12-month period. To date and to the best of our knowledge, there is no single empirical evidence that has yet examined the concurrent effects of mandatory IFRS and intertemporal changes in the quality of formal institutions on the aftermarket performance of IPO firms in emerging countries like Saudi Arabia. We aim to bridge this research gap by investigating the existence of this concurrent-effect notion and the individual implications of IFRS mandate and intertemporal changes in the quality of formal institutions on the long-term performance of IPO firms.

3. Research Question and Hypotheses Development

We aim to address the following research question: Is there a concurrent effect of IFRS mandate and changes in the quality of formal institutions on the long-term performance of IPO firms in Saudi Arabia? In order to answer the proposed research question, four hypotheses are developed after providing the following discussion.

Researchers find evidence concerning the existence of a poor long-term performance of IPO firms (Dorsman et al. 2010; Alanazi & Al-Zoubi 2015; Zaremba & Szyszka 2016; Zattoni et al. 2017). The long-term underperformance occurs when the long-term return of IPO firms, frequently measured in a one-year window, shows a smaller return than the return of a designated benchmark (Note 13) (Zattoni et al. 2017). Aggarwal and Rivoli (1990) devised the fads theory to explain the long-term underperformance of IPO firms as being due to a temporary overvaluation of the IPO firm at the offering date. The authors argue that investors react optimistically to the share price of IPO firms on the first trading days leading to a substantial increase in the share price. Subsequently, weeks or months after the listing day, investors start to lose their over-optimism about the actual value of the new stock leading to a downwardly adjusted share price of the IPO firm. Thus, Aggarwal and Rivoli (1990) show that IPO firms with high underpricing tend to underperform their comparable benchmark, commonly using the general market index in the long-term.

Hypothesis 1:

There is a negative relationship between IPO underpricing and the long-term performance of IPO firms in Saudi Arabia.

IFRS and IPO literature including Hong et al. (2014) claims that IFRS mandate can enhance the level of information quality of IPO firms. This occurs by improving the transparency of IPO prospectuses resulting in less information asymmetry amongst IPO parties, and in turn, lower IPO underpricing. We argue that this effect materializes since IFRS offers better information disclosure that deters managers’ discretion (Note 14), and so increases IPO investors’ and analysts’ information certainty (Note 15) which concurrently affect the short and long-term performance of IPO firms. Dorsman et al. (2010) find that Dutch IPOs underperform the Dutch general market index, but this level of underperformance is moderately alleviated after IFRS standards had been mandated in 2005.

However, what is unknown is how IFRS standards would make a positive difference to the quality of information disclosure in the IPO market. We argue, for example, that IAS 39 Financial Instruments: Recognition and Measurement, is a very influential IFRS standard that dictates to managers in Saudi Arabia about how to use Fair Value Measurement (FVM), which is claimed to reduce information asymmetry amongst equity investors including IPO investors in both the primary and secondary markets. In this regard, Horton and Serafeim (2010) and Firth and Gounopoulos (2017) contend that when IPO investors and analysts employ the fair value method imposed by IFRS, they can subsequently increase their accuracy in appraising the fair share prices of listed companies, including IPO firms. Similarly, Fontes et al. (2018) find that when FVM is applied to banks’ assets, it greatly helps in alleviating the asymmetric information problem between equity investors, observed by a reduction in the bid-ask spread (Note 16). The authors find that in post-IAS 39 mandate, information asymmetry is markedly reduced because investors have become more informed and less uncertain about the current asset value before conducting equity valuation. Duh et al. (2012) also assert that the FVM orchestrated by IFRS diminishes the volatility of earnings triggered by estimation error; therefore improving the transparency of accounting information in financial reports.

Additionally, in contrast to IFRS standards, Iqbal (2012) and Nurunnabi (2017) added that Saudi GAAP, similar to many emerging countries’ GAAPs, grants companies’ further liberty about the intangible assets’ accounting treatment,
either by capitalizing intangible assets or not. This accounting freedom leaves investors uncertain about the valuation of intangible assets when they need to determine the fair value of companies, particularly IPO companies. Meanwhile, IAS 38 forbids managers from capitalizing intangible assets. Hence, when IFRS eliminates incorporation costs of intangible assets, it limits managers’ liberty to capitalize such costs for IPO companies (Dinh et al. 2015). This, in turn, diminishes the uncertainty IPO investors in relation to the assessment of intangible assets in the IPO prospectuses.

Recall that in our first hypothesis, the fading theory expects a positive association between IPO underpricing and the long-term underperformance of IPO firms. This expectation rests on the rationale that IPOs experience great discounting, possibly because their share price is enthusiastically overvalued by investors. This overvaluation is also possibly influenced by managers’ discretion to self-select accounting methods, which in turn influence investors’ valuation sentiment. Subsequently, such IPOs will experience poor aftermarket performance. We argue that if IFRS standards can truly moderate poor accounting practices and lead to lower information uncertainty about the value of IPO firms, not only lower IPO underpricing (Note 17) but also better long-term performance in Saudi Arabia would be expected.

Hypothesis 2:

There is a positive relationship between IFRS mandate and the long-term performance of IPO firms in Saudi Arabia.

However, what is still mysterious is the influence of changes in the formal institutional quality on the issue of aftermarket performance of IPO firms in order to realize how such a concurrent effect could exert its influence on the aftermarket performance of IPO firms. This scenario is one where a change in the formal institutional quality is alone that has a positive effect on lowering IPO underpricing and improving the long-term performance of IPO firms (Jamaani & Ahmed 2021). This notion is built on the observations of the IPO underpricing and long-term performance literature, which argues that these two stock market phenomena can be affected by the existent of quality formal institutional environment (Zattoni et al. 2017; Brogi et al. 2020). This viewpoint suggests that asymmetry in the quality of formal institutions can influence the observed level of information asymmetry in the IPO market, therefore affecting the perceived level of IPO underpricing and long-term performance in that country. The argument is that a country with a weak formal institutional environment is anticipated to maintain an information environment characterized by a weak legal system, allowing information asymmetry to increase unchecked amid market participants (Kaufmann et al. 2017). Consequently, in such a country with a poor formal institutional environment, investment uncertainty is likely to increase. This results in a higher tendency for underpricing, affecting the long-term aftermarket performance of IPO firms in order to compensate (Zattoni et al. 2017). The authors find a positive association between the level of quality of formal institutions in a country and long-term performance of IPO firms.

Hypothesis 3:

There is a positive relationship between changes in formal institutional quality and the long-term performance of IPO firms in Saudi Arabia.

We argue that aftermarket performance of IPO firms could be concurrently influenced by the level of formal institutional quality and the quality of accounting standards in a country, as proxied by IFRS mandate. This opinion is based on the argument put forward by the IFRS literature contending that accounting system does not exist in a vacuum (Ahmed et al. 2013; Christensen et al. 2013). This school of thought argues that the accounting system established in a country is ‘a product of its environment’ indicating a possible concurrent effect of the two elements (Houq et al. 2012a; Persakis & Iatridis 2017). IFRS scholars state that a concurrent effect between country-level formal institutional environments and IFRS mandate can influence the accounting quality of financial reports in a country (Daske et al. 2008; Persakis & Iatridis 2017). Therefore, it could be this concurrent effect that explains the observed capital market benefits that previous studies mistakenly reported about the sole benefits of IFRS mandate to market users (Christensen et al. 2013). We argue that it could also be inferred that for IFRS to carry out what it promises, it requires a strong formal institutional quality environment to function properly. For example, a country with poor quality of formal institutions could not make it possible for the construction of high-quality accounting numbers, regardless of the implementation of quality accounting standards such as IFRS (Daske et al. 2008; Ball 2016). IFRS scholars emphasize that this concurrent effect notion infers that countries could deliberately work on improving their formal institutional system, simultaneously or concurrently with the introduction of IFRS mandate. Doing so will allow IFRS to reflect its claimed benefits on capital markets (Daske et al. 2008; Houq et al. 2012b; Ball 2016; Persakis & Iatridis 2017).

To have an appreciation of the above concurrent argument, one can look at the published annual reports by the World
Economic Forum (2017). These reports show that Saudi Arabia, for instance, managed to improve the quality of its formal institutional system proxy by enhancing the overall government transparency index by 21% from 2005 to 2017 where IFRS was mandated in 2008. Was such an improvement a coincidence or actually an intended reform to support the introduction of IFRS standards in Saudi Arabia’s accounting system? Abdull Razak and Alqurashi (2019) argue that Saudi Arabia undertakes these formal institutional reforming efforts to enhance the overall investment environment including the enhancement of the quality of the reporting and accounting systems of listed companies. Adopting and implementing IFRS is a fundamental aspect of these reforming initiatives (Note 18). Such an improvement in the formal institutional quality of Saudi Arabia perhaps supports the predictable benefits from IFRS; alternatively, the influence of IFRS simply has no role to play in the stock market of Saudi Arabia where the IPO market is an integral part of it. Therefore, building on Hypothesis 2 and Hypothesis 3, we develop our final hypothesis. Since we expect a positive relationship between the single effects of IFRS mandate and changes in formal institutional quality on the long-term performance of IPO firms, the concurrent effect of those two elements might also yield a positive effect on the aftermarket performance of IPO firms in Saudi Arabia.

Hypothesis 4:
The concurrent effect between IFRS mandate and changes in quality of formal institutions have a positive relationship with the long-term performance of IPO firms in Saudi Arabia.

4. Data and Methodology
4.1 Why Saudi Arabia

Saudi Arabia as an emerging market economy shares similar formal and informal institutional settings with many emerging economies. For example, Figure 1 presents the mean levels of formal institutional quality assessed by the level of control of corruption (Note 19) between 2005 and 2017 for numerous emerging and advanced economies. The figure shows that Saudi Arabia shares a comparable level of control of corruption to Brazil, China, India, Indonesia, Mexico, and Russia. Kaufmann et al. (2017) show that the average level of control of corruption in Saudi Arabia is -0.08 (Note 20). The figure also provides similar negative values for control of corruption for other emerging countries (Note 21), including Russia, Mexico, Indonesia, India, China, and Brazil, at -0.93, -0.47, -0.69, -0.46, -0.50, and -0.09, respectively.

![Figure 1. Average level of control of corruption between 2005 and 2017](image-url)

This figure is sourced from Kaufmann et al. (2017)
Saudi Arabia also has a consistent similarity with several other emerging countries in terms of informal institutional quality, for example, in the cultural dimension value of power distance (Note 22), as indicated in Figure 2. Hofstede (2011) shows that Saudi Arabia’s culture has a score of 95 out of 100 regarding the dimension of power distance, while the emerging economies (Note 23) of Russia, Mexico, Indonesia, India, China, and Brazil also have high and positive scores of 93, 81, 78, 77, 80, and 69, respectively.

![Figure 2. Comparison of cultural dimension value of power distance](image)

This figure is sourced from Hofstede (2011)

Secondly, Saudi Arabia has a comparable but lengthier IFRS adoption experience compared to other emerging economies (IFRS Foundation 2017). For example, IFRS standards have been mandated in Saudi Arabia since 2008 meaning that the Kingdom has almost 10 (Note 24) years of IFRS history. On the contrary, in emerging economies the average length of IFRS history is around 7 years (Note 25). Prior IFRS literature has concerns about the generalizability of outcomes derived from IFRS research when a country has only a comparatively brief IFRS experience (Ball 2016; Houqe & Monem 2016). Thirdly, Saudi Arabia is a less advanced economy and very different from the European countries, marked by the Kingdom having a problem of information asymmetry in its stock market. There are also numerous key differences between its local GAAP and IFRS standards (Iqbal 2012; Nurunnabi 2017). These two elements make Saudi Arabia ideal for investigation to perceive the effect of IFRS mandate and changes in formal institutional quality in improving the information symmetry in an emerging economy where large differences exist between its local GAAP and IFRS. This probably offers a new opportunity for IFRS research. Houqe et al. (2012a) and Hong et al. (2014) contended that the mixed results reported in the literature with reference to the impact of IFRS mandate on capital market outcomes in developed countries are perhaps due to the inclusion of countries having small differences (Note 26) between IFRS and their local accounting standards. The Saudi Arabian equity market not only suffers from a high level of information asymmetry but also from large differences between IFRS standards and its accounting rules. For example, Jamaani and Roca (2015) showed that financial market development and information efficiency is weak in the Gulf countries’ equity markets including Saudi Arabia, caused by the existence of weak market transparency. Iqbal (2012) and IFRS Organisation (2016) recognized 21 key differences between IFRS standards and the Saudi Arabian GAAP. On this issue, Nurunnabi (2017) identifies 15 (Note 27) IFRS standards that can perhaps cause a serious impact on the quality of accounting
information and disclosure asymmetry in the Saudi IPO market. Finally, since IFRS standards were mandated in 2008 for insurance and banking firms, other listed companies cannot voluntarily adopt IFRS (Note 28). This points towards the high possibility that the Saudi Arabian IPO market is free from the self-selection bias that negatively impacted on the outcomes reported by prior studies. In this regard, Daske et al. (2008), and Christensen et al. (2013) argue that voluntary IFRS adopters who agree to take IFRS after assessing its benefits and shortcomings, in contrast to mandatory adopters who adopt a "one size fits all" approach, suffer from a serious self-selection bias; this greatly compromises the trustworthiness of their conclusions. Therefore, considering the above-mentioned characteristics of Saudi Arabia, the Kingdom provides an ideal case for making the results from the concurrent effect of IFRS mandate and intertemporal changes in formal institutional quality on the aftermarket performance of IPO companies, possibly generalizable to other emerging countries.

4.2 Sample Selection

Our total sample includes 100 IPO corporations listed between January 2005 and December 2017 in Saudi Arabia. Our IPO data sourced from DataStream and Eikon databases. Transparency data is sourced from the World Economic Forum (2017) and it includes three proxies including ethical behavior of firms, strength of auditing and reporting standards, and transparency of government policymaking. We follow accounting disclosure and IPO literature including Shi et al. (2013) and Hong et al. (2014) to have various controlling firm- and market-specific factors. Definitions of all variables are included in Table 1.

Table 1. Definition of variables

| Variables                          | Mean Values |
|------------------------------------|-------------|
| Dependent Variable                 |             |
| BHAR is the dependent variable is  | 0.07        |
| the long-term performance of listed |
| IPO firms, and it refers to         |             |
| the buy and hold excess returns    |             |
| BHAR_{it} relative to benchmark    |             |
| in 12 months window.               |             |
| DiD Variables                      |             |
| Post denotes to the control group  | 0.48        |
| containing all companies in the    |             |
| post-mandating period from         |             |
| 2009 to 2017.                      |             |
| Treatment denotes to all banks and | 0.36        |
| insurance IPO companies before-    |             |
| and after-mandating IFRS from      |             |
| 2005 to 2017. It works as a group- |             |
| specific effect in the DiD design. |             |
| The motive for including all bank  |             |
| and insurance IPO companies pre and |
| post the IFRS mandate period is to  |             |
| study the change in underpricing in |             |
| these companies for the whole sector |
| over the whole period compared to   |             |
| the IFRS group. This makes it      |             |
| probable to capture the underpricing |
| for only bank and issuance firms   | 0.15        |
| during the after-IFRS mandate       |             |
| period from 2009 to 2017.          |             |
| Formal Institutional Variables     |             |
| Transparency of Government         | 4.86        |
| Policymaking (TGP) is an annual     |             |
| time series index (2005-2017) for  |             |
| the weight average ranking results  |             |
| of an opinion survey to the         |             |
| following question: In your country,|             |
| how easy is it for businesses to    |             |
| obtain information about changes in |
| government policies and regulations |             |
| affecting their activities? [1 =   |             |
| extremely difficult; 7 = extremely  |             |
| easy].                             |             |
| Ethical Behavior of Firms (EBF) is  | 5.17        |
| an annual time series index (2005-2017) |             |
| for the weight average ranking     |             |
| results of opinion survey to the    |             |
| following question: In your country,|             |
| how would you rate the corporate    |             |
| ethics of companies (ethical       |             |
| behavior in interactions with       |             |
| public officials, politicians, and |             |
| other firms)? [1 = extremely poor—|             |
| among the worst in the world; 7 =  |             |
| excellent—among the best in the    |             |
| world].                            |             |
| Strength of Auditing and            | 4.52        |
| Reporting Standards (SARS) is an    |             |
| annual time series index (2005-2017)|             |
| for the weight average ranking     |             |
| results of opinion survey to the    |             |
| following question: In your country,|             |
| how strong are financial auditing  |             |
| and reporting standards? [1 =       |             |
| extremely weak; 7 = extremely strong].|             |
| Control Variables                  |             |
| IPO Underpricing (UP) which is      | 2.11        |
| defined as the percentage return    |             |
| of the variance between the offer   |             |
| price of an IPO firms to the first  |             |
| closing price of this IPO firm on   |             |
| its first trading day.              |             |
Underwriter Reputation Dummy (URD) is a self-designed underwriter ranking technique ranking 0.71 all underwriters in the sample based on the total market proceeds for all IPOs they have underwritten from 2005 to 2017 in Tadawul. If the underwriting bank underwrites more than 10% of the IPO listed in Tadawul, then it is classified as a prestigious underwriter and is given a value of one; otherwise, it attains a value of zero (Beatty & Ritter 1986; Shi et al. 2013).

Technology Firm Dummy (TFD) is a dummy variable equivalent to one if an IPO company is a technology-type business; otherwise, it equals zero.

Pre-IPO Market Volatility (PMV) denotes to the standard deviation of local market return 15 days 0.02 before to the first trading date of an IPO company.

Offer Size (OS) denotes to the size of the IPO companies, and it equals the offer price in Saudi Arabian currency multiplied by the number of underwritten IPO shares. 225.05

Private Firm Dummy (PFD) denotes to one if an IPO company is a family-owned company; 0.93 otherwise, it equals zero.

Integer Offer Price Dummy (IOPD) denotes to one if the offer price has an integer value; 0.99 otherwise, it equals zero.

Offer Price (OP) is price in Saudi Arabian currency of one share of the IPO firms at the time of 9.84 offering.

Elapsed Time (ET) denotes to the length of time between the setting of the offering price and the 113 first trading date.

4.3 Model Estimation

Our control group contains 66 IPO companies while the treatment group contains 34 insurance and banking IPO companies (Note 29). Both groups are divided into pre-IFRS (2005 to 2007) and post-IFRS (2009 (Note 30) to 2017) mandating phases. We begin in the year 2005 because the World Economic Forum (2017) does not provide formal institutional data for Saudi Arabia before 2005. Our four hypotheses are tested using several DiD (Note 31) models following Hong et al. (2014). By applying the DiD method, we can test the effect of treatment, IFRS mandate or changes in formal institutional quality or both effects, on the dependent variable (the aftermarket performance of IPO firms) and then compare the mean change in the dependent variable for the treatment group with the mean change for the control group. We employ unbalanced (Note 32) cross-sectional regression, with the model having the following definition:

$$BHAR_{it} = \beta_0 + \beta_1 Post + \beta_2 Treatment + \beta_3 IFRS + \beta_4 Transparency + \beta_5 Transparency_IFRS + \beta_6 Underwriter Reputation Dummy_UFRS + \beta_7 Pre-IPO Market Volatility_PMV + \beta_8 Offer Size_OS + \beta_9 Integer Offer Price Dummy_IOPD + \beta_10 Private Firm Dummy_PFD + \beta_11 Offer Price_OP + \beta_12 Elapsed Time_ET + \sum_{i=1}^{3} \beta_i Year Effect YE + \sum_{i=1}^{3} \beta_i Industry Effect IE + \epsilon_i$$

(1)

In Equation (1), the dependent variable is the long-term performance of listed IPO firms, and it refers to the buy and hold excess returns $BHAR_{itm}$ of stock $t_i$ relative to benchmark $m$. In Equation (2), Zattoni et al. (2017) have been followed to calculate $BHAR_{it}$ as follows:

$$BHAR_{it} = \prod_{t=1}^{m_{out}(T)} (1 + r_{it}) - 1 - \prod_{t=1}^{m_{out}(I)} (1 + r_{mt}) - 1$$

(2)

Where $BHAR_{it}$ is the market-adjusted buy-and-hold return of firm $t_i$ in event month $t$, $r_{it}$ is the monthly raw return on firm $t_i$ in event month $t$, and $r_{mt}$ is the benchmark specific monthly raw returns of the market index designated as the Tadawul All Share Index. Following Alanazi and Al-Zoubi (2015), the calculation of $BHAR_{it}$ begins with the closing price of an IPO firm on its first listing date and extends to its closing price 12 (Note 33) months post-listing, where a month equals 21 business days. This timeframe is likely to allow market participants in Saudi Arabia’s stock market to observe and reflect on the IPO firms’ accounting and financial announcements and performance. When $BHAR_{it}$ provides positive and significant values, it then means that IPO firms outperform their benchmark, Tadawul, in the 12 months window, while a negative and significant value indicates the opposite. The presence of an insignificant value of $BHAR_{it}$ indicates no performance difference between IPO firms and Tadawul. To address Hypothesis 1, the coefficient $\beta 6$ in Equation (1) should provide a negative and significant coefficient. In Equation

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(1), the $\beta 3$ variable denotes the interaction term, Post*Treatment, capturing the change in $BHAR_{lt}$ for only bank and insurance firms after the IFRS mandate period from 2009 to 2017. If the IFRS mandate keeps its promise and improves the accounting quality of the treatment group, then $\beta 3$ should be statistically positive, hence, addressing Hypothesis 2. Similarly, the coefficient $\beta 4$ addresses Hypothesis 3 where the positive relationship between intertemporal changes in the quality of formal institutions is examined. Lastly, the coefficient, $\beta 5$, addresses Hypothesis 4 where the purpose is to investigate the likelihood of a concurrent effect between IFRS mandate and changes in the quality of formal institutions having a positive relationship with the long-term performance of IPO firms in Saudi Arabia.

5. Results and Discussion

5.1 Regression Results

Results reported across all models in Table 2 provide a weak supportive outcome for Hypothesis 1. This is because the variable UP shows a value of ranging from -0.02 to -0.03, and they are statistically significant at only 10%. These results show that when IPO firms experience a high level of underpricing perhaps caused by IPOs’ share prices being optimistically overvalued by investors and analysts on the first trading day of the IPO firm, these IPO underperform in the long-term by up to 3%. Such an overvaluation mistake gradually observed in the secondary market within the first 12 months of post-listing. Hence, once the initial enthusiasm about the performance of IPO firms fades away, investors are likely to review their valuation of IPO firms leading to poorer long-term performance compared to Tadawul. The result for Hypothesis 1 is consistent with Alanazi and Al-Zoubi (2015) who discover a negative association between the initial over-optimism of IPO investors measured by the level of IPO underpricing and long-term performance of IPO firms.

Table 2. Results of the concurrent effects of ifrs mandate and formal institutional quality on the aftermarket performance of IPO firms in Saudi Arabia

| Variables                  | Model 1   | Model 2   | Model 3   |
|----------------------------|-----------|-----------|-----------|
| DiD Independent Variables  |           |           |           |
| Post                       | -0.11     | -0.02     | -0.07     |
| [-0.43]                    | [-0.10]   | [-0.30]   |           |
| Treatment                  | 0.07      | 0.07      | 0.06      |
| [0.42]                     | [0.39]    | [0.36]    |           |
| IFRS                       | 0.09      | 0.08      | 0.018     |
| [0.37]                     | [0.31]    | [0.08]    |           |
| Transparency Independent Variables |          |           |           |
| EBF                        | 0.51**    | [2.00]    |           |
| IFRS*EBF                   | 0.01      | [0.04]    |           |
| SARS                       |           |           |           |
|                           | 0.37**    | [1.91]    |           |
| IFRS*SARS                  | 0.01      | [0.01]    |           |
| TGP                        |           |           |           |
|                           | 0.60**    | [1.96]    |           |
| IFRS*TGP                   | 0.01      | [0.06]    |           |
| Control Variables          |           |           |           |
| UP                         | -0.02*    | -0.03**   | -0.02     |
| [-1.30]                    | [-1.65]   | [-1.04]   |           |
| URD                        | -0.19**   | -0.20**   | -0.20**   |
| [-1.66]                    | [-1.72]   | [-1.77]   |           |
This table provides the results of the DiD models for 100 IPO firms from 15 industries listed from 2005 to 2017. T-statistics in brackets are adjusted for heteroscedasticity at *** p<0.01, ** p<0.05, * p<0.1.

All Models in Table 2 provide no supportive outcomes for Hypothesis 2. The results of the statistically insignificant and positive coefficient of IFRS mandate indicating that it does not provide long-term economic benefits to IPO firms from 2009 to 2017. The results of EBF, SARS, TPG variables test the expectation of Hypothesis 3 that anticipates a positive relationship between changes in formal institutional quality and long-term performance of IPO firms in Saudi Arabia. The first proxy, EBF, which captures changes in the ethical behavior of firms, provides positive and statistically significant outcome. This outcome suggests that enhancements in the overall quality of the private sector’s transparency measured by the level of EBF in Saudi Arabia from 2005 to 2017 largely improve the long-term performance of listed IPO firms by 51%. The remaining two proxies of tranparency including SARS and TPG provide consistent outcomes. The outcome of Hypothesis 4 that examines if the concurrent effect between IFRS mandate and changes in the formal institutional quality is positively linked to the long-term performance of IPO firms in Saudi Arabia is reported by the results of β3. The interaction term, IFRS*EBF, reads positively, but its insignificant outcome indicates the absence of a concurrent effect between changes in ethical behavior and long-term performance of Saudi Arabian IPO firms and IFRS mandate. The remaining two concurrent effect proxies including IFRS*SARS and IFRS*TPG provide consistent outcomes. Hence, Hypothesis 4 is not supported.

Table 2 shows that firm- and market-specific controlling factors to the long-term performance of IPO firms are not all important. Overall, the majority of firm- and market-specific factors deliver comparable outcomes to prior literature, including Dorsman et al. (2010), Alanazi and Al-Zoubi (2015), and Zattoni et al. (2017). The adjusted R-squared results amongst the 3 DiD models reported in Table 2 provide R-squared values reaching 21%. This means that the estimations performed here succeeded in explaining up to 21% of the variations in the long-term performance of IPO firms in the stock market of Saudi Arabia. This adjusted R-squared value is almost double what is found by comparable studies such as Dorsman et al. (2010) (Adjusted R-squared: 0.103; Table 6; Model 4) who report adjusted R-squared value of only 10.30% for 136 listed IPO firms in Denmark.

5.2 Discussion

The uncover ed yet insignificant results for Hypothesis 2 are consistent with Dorsman et al. (2010) who found that IFRS does not deliver robust economic benefits to the long-term performance of IPO firms in Denmark. However, how can such an outcome be clearly interpreted? We argue that previous IFRS-IPO underpricing literature including Otero and Enríquez (2012) and Hong et al. (2014) found significant evidence documenting an effective certification role of IFRS mandate. This effect decreases the ex-ante uncertainty of IPO investors that leads to reducing IPO underpricing for listed IPO firms. By combining the results attained by Otero and Enríquez (2012) and Hong et al.
(2014) related to the effect of the IFRS mandate on short-term IPO underpricing and our results related to the long-term performance of IPO firms, a logical interpretation of the results emerge. It becomes apparent that the IFRS mandate does not have a long-lasting effect; it has only a short-lived effect on the problem of asymmetric information in the IPO market in emerging countries such as Saudi Arabia. In other words, our interpretation points to IFRS alleviating the information asymmetry problem but only in the primary market. This is done by contributing positively to the level of disclosure for IPO prospectuses, where investors and analysts can receive additional and quality information related to IPO firms.

On the other hand, IFRS does not successfully generate any additional benefits to the users of financial reports for IPO firms post-listing in the secondary market in Saudi Arabia. This outcome could be attributed to the fact that in the secondary market, investors and analysts can obtain reliable information from different sources (Note 34). Such accessible collections of information can largely assist IPO parties in determining the fair market value of IPO shares, which reflects on the aftermarket price performance. This interpretation is in conjunction with a similar remark highlighted by previous studies showing a great asymmetric information gap between the primary and secondary markets (Shi et al. 2013; Hong et al. 2014; Brogi et al. 2020). The absence of IFRS exerting an effect on aftermarket performance of IPO firms could lead to the idea that the quality of formal institutions is the main player in the long-term performance of these Saudi firms. The results documented in Table 2 clearly support the prediction of Hypothesis 3, which supports the above contention. This evidence is comparable to Zattoni et al. (2017) who find a positive association between the level of corporate governance practices in a country and long-term performance of IPO firms.

The finding related to the absence of the significant concurrent effect of changes in formal institutional quality proxies and IFRS mandate on the aftermarket performance of IPO firms is comparable to but disagrees with Houqe et al. (2012b). This is because the authors uncover significant evidence documenting a major concurrent effect between investor protection and IFRS mandate in improving earnings quality, which is measured by the reduction in discretionary accruals. The authors find a positive but insignificant relationship between either investor protection or IFRS mandate in enhancing earnings quality. The presence of possible omitted variable bias and the short time period for post-IFRS coverage in Houqe et al.’s (2012b) work might explain the differences between their distinguished work and ours regarding the concurrent effect results. In fact, the authors acknowledge the existence of a possible omitted variable bias with respect to the measurement of the investor protection variable. In contrast to our reported results in Table 2, Houqe et al. (2012b) assume that countries do not change their formal institutional quality measured by the level of investor protection over the course of time. Hence, they assume a time-invariant nature of the variable investor protection. Hearn (2014) contends that the use of time-invariant formal institutional proxies by previous studies biases the results about the relationship between changes in transparency and performance of IPO firms. Moreover, the data of Houqe et al. (2012b) covers 47 developed and emerging countries between 2000 and 2007 when IFRS became mandatory in 2005; hence, this offers only two years of IFRS experience. The majority of emerging countries covered by Houqe et al. (2012b), for example, China, Argentina, Brazil, Mexico, Indonesia, India, Malaysia, and Saudi Arabia, had not adopted IFRS mandatorily by 2007 (Note 35). Stated differently, the concurrent effect results generated using an emerging sample, including Saudi Arabia by Houqe et al. (2012b) provide a valuable foundational work. However, they are difficult to generalize to emerging countries. In contrast, the data employed by our study ranges from 2005 to 2017 and offers nine years of IFRS experience.

Our results can, therefore, offer long-term monitoring of the IFRS effect either individually or concurrently with time-variant changes in formal institutional quality. Hence, the results related to Hypothesis 4 are likely to provide better results. It reveals the absence of a concurrent effect between intertemporal changes in formal institutional quality and IFRS mandate on the long-term performance of IPO firms in including Saudi Arabia. This absent effect is likely to be attributed to the absence of a direct effect of IFRS mandate on the aftermarket performance of IPO firms which is confirmed by the rejection of Hypothesis 2 and the finding of Dorsman et al. (2010) as well. Hence, we conclude that IFRS does not exert a long-term effect on IPO firms. Instead, intertemporal improvements in formal institutional quality only matter in the long run concerning the performance of IPO firms after they have been listed.

5.3 Robustness Tests

In order to improve the robustness of the findings (Note 36), a range of sensitivity tests is employed to make sure that previous conclusions are not an artefact of not controlling for several testing specifications. This includes adjusting for the synthetic clustering in the DiD model, outliers, potential endogeneity in the OLS model, the unbalanced distribution of IPO data and small sample size, and omission of some economic and stock market factors linked to the IPO market. An alternative dependent variable is also used to check the sensitivity of the results and a
test of the positive effect of IFRS mandate on IPO underpricing is also conducted.

Table 3 presents the results of 9 DiD models integrating the three formal institutional proxies. Encouragingly, they render consistent results with previous outcomes even after correcting for two clusters, including IFRS versus non-IFRS, 12-year clusters, and 15 industry clusters. Models 1 to 3 in Table 4 report the outcomes after excluding 2 observations that caused an outlier threat. Reliably, we attain identical results that ensure strong confidence in our previous findings. Accounting disclosure and IPO researchers caution for the presence of endogeneity in aftermarket performance models that are probably to bias the results of OLS estimation when it is ignored (Shi et al. 2013; Zattoni et al. 2017; Jamaani & Ahmed 2020). This problem may be attributed to two things: firstly, the endogenous decision of IPO firms to choose prestigious underwriters; and secondly, the IPO firms’ choice to self-select an exact time where they perceive an improvement of the overall formal institutional quality in a given country. Models 4 to 6 in Table 4 present the outcomes using 2SLS estimation after correcting for endogeneity in the variables URD, EBF, SARS, and TGP. The results reveal that IPO firms neither endogenously select reputable underwriters when they go public nor relate their choice to list their companies when the quality of formal institutions changes in Saudi Arabia. This surely preserves the trustworthiness of and assurance in the reported outcomes using OLS estimation in previous results. We are conscious of a probable critique against the trustworthiness of our outcomes caused by the employment of a small sample size and being unevenly distributed over 15 industries and 12 years. To eradicate such a worry, we follow Efron and Tibshirani (1986) to re-check our findings after employing bootstrapping estimation to our models. Models 6 to 9 in Table 4 show our results after incorporating bootstrapping estimation. Confidently, the results lead to quantitatively similar outcomes to our prior results. We deploy a further robustness check to confirm that our prior findings are not an artefact of a probable omitted variable bias possibly caused by not accounting for some economic and stock market variables that may impact on our earlier outcomes. This contains capturing the introduction of a price cap for newly listed IPOs in 2013 (Note 37), GCC stock market crisis in 2006 (Note 38), and the GFC in 2008. Across the 9 models in Table 5, consistently supportive results are attained similar to what is reported previously. Additionally, we use a wealth relative (WR (Note 39)) ratio as an alternative measure for the dependent variable. The IPO literature commonly uses WR as a supplement to the BHAR measure in order to test the sensitivity of results (Alanazi & Al-Zoubi 2015). Collectively, the employed 3 models in Table 6 provide consistently supportive outcomes to the ones previously reported for our four hypotheses in Table 2. Finally, recall that we built our explanation of the absence of the long-run influence of IFRS mandate based on the results attained by IFRS-IPO research including Otero and Enriquez (2012) and Hong et al. (2014) related to the observed effect of the IFRS mandate on the short-term IPO underpricing that observed only in developed countries. Hence, we argued that due to the wide difference in information asymmetry between the primary and secondary markets, IFRS only solves the problem of information asymmetry in the primary market while it offers no benefits to the long-term performance of IPO firms. So, we test if this construct really holds in Saudi Arabia by examining the relationship between IFRS mandate and IPO underpricing. Table 7 reports supporting results to previous IFRS-IPO research by regressing the variable IFRS on IPO underpricing, the dependent variable, showing that IFRS reduces IPO underpricing in Saudi Arabia by 258%. Again, our results confirm that IFRS has only a short-lived effect; it has no long-lived influence on information asymmetry in the IPO market. The changes in the quality of formal institutions is the alternative player in influencing the long-term performance of IPO firms in Saudi Arabia.

### Table 3. Results for did models using clustered robust standard errors estimation

| Variables            | Model 1        | Model 2        | Model 3        | Model 4        | Model 5        | Model 6        | Model 7        | Model 8        | Model 9        |
|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| DiD Independent Variables |                |                |                |                |                |                |                |                |                |
| Post                 | -0.19          | -0.18          | -0.05          | -0.12          | -0.12          | -0.02          | -0.29          | -0.10          | -0.01          |
|                      | [-0.40]        | [-0.44]        | [-0.38]        | [-0.45]        | [-0.14]        | [-0.28]        | [-0.48]        | [-0.24]        | [-0.30]        |
| Treatment            | 0.08***        | 0.05           | 0.07***        | 0.08           | 0.05           | 0.07           | 0.08           | 0.05           | 0.07           |
|                      | [10.2]          | [1.03]         | [8.41]         | [0.59]         | [0.47]         | [0.52]         | [0.74]         | [0.55]         | [0.66]         |
| IFRS                 | -0.04          | 0.03**         | -0.02          | -0.04          | 0.03           | -0.02          | -0.04          | 0.03           | -0.02          |
|                      | [-0.46]        | [2.19]         | [-0.34]        | [-0.16]        | [0.14]         | [-0.08]        | [-0.33]        | [0.40]         | [-0.18]        |

| Transparency Independent Variables |
|------------------------------------|

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ISSN 1923-4023  E-ISSN 1923-4031
| Variables | EBF | IFRS*EBF | SARS | IFRS*SARS | TGP | IFRS*TGP |
|-----------|-----|----------|------|------------|-----|----------|
|           | 0.45*** | -0.01 | 0.38*** | 0.01 | 0.56*** | -0.01 |
|           | [6.33] | [-0.42] | [4.13] | [0.41] | [62.3] | [-0.31] |
|           | 0.45*** | -0.01 | 0.38*** | 0.01 | 0.56*** | -0.01 |
|           | [2.85] | [-0.13] | [3.45] | [0.06] | [2.99] | [-0.07] |
|           | 0.45*** | -0.01 | 0.38*** | 0.01 | 0.56*** | -0.01 |
|           | [3.41] | [-0.29] | [3.51] | [0.16] | [3.20] | [-0.16] |

Firm-level Control Variables

| Variables | UP | URD | TFD | PMV | OS | IOPD | PFD | OP | ET |
|-----------|----|-----|-----|-----|----|------|-----|----|----|
|           | -0.02 | -0.19 | 0.26*** | -1.26* | -0.01 | 0.06 | -0.09 | -0.01* | 0.01 |
|           | -0.03* | -0.20 | 0.26*** | -2.15*** | -0.01*** | 0.11 | -0.82 | -0.01*** | -1.10 |
|           | -0.02 | -0.20 | 0.26*** | -0.83* | -0.01*** | 0.05 | -0.33 | -0.01*** | -2.78 |
|           | -0.02 | -0.19*** | 0.26*** | -1.26 | -0.01 | 0.06 | -0.07 | -0.01*** | -1.38 |
|           | -0.03* | -0.20*** | 0.26*** | -2.15 | -0.01 | 0.05 | -0.09 | -0.01*** | -0.27 |
|           | -0.02 | -0.20*** | 0.26*** | -0.83 | -0.01 | 0.06 | -0.11 | -0.01*** | -0.48 |
|           | -0.03* | -0.20*** | 0.26*** | -1.26 | -0.01 | 0.05 | -0.09 | -0.01*** | -0.43 |
|           | -0.02 | -0.20*** | 0.26*** | -2.15 | -0.01 | 0.06 | -0.11 | -0.01*** | -0.75 |
|           | -0.03* | -0.20*** | 0.26*** | -0.83 | -0.01 | 0.05 | -0.09 | -0.01*** | -0.28 |
|           | -0.02 | -0.20*** | 0.26*** | -1.26 | -0.01 | 0.06 | -0.11 | -0.01*** | -0.75 |
|           | -0.02 | -0.20*** | 0.26*** | -2.15 | -0.01 | 0.05 | -0.09 | -0.01*** | -0.28 |

Year and Industry Effects

| Variables | YES | YES | YES | YES | YES | YES | YES | YES |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | YES | YES | YES | YES | YES | YES | YES | YES |
|           | YES | YES | YES | YES | YES | YES | YES | YES |

Constant

| Variables | -1.68*** | -1.36*** | -2.12*** | -1.68*** | -1.36*** | -2.12*** | -1.68*** | -1.36*** |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|
|           | [-5.88] | [-2.66] | [-50.3] | [-2.46] | [-2.68] | [-2.72] | [-3.00] | [-2.13] |

Observations

| Variables | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|

Adjusted R2

| Variables | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|

N of Clusters

| Variables | 2 | 2 | 2 | 12 | 12 | 12 | 15 | 15 | 15 |

This table provides the results of the DiD models for 100 IPO firms from 2005 to 2017. T-statistics in brackets are adjusted for heteroscedasticity at *** p<0.01, ** p<0.05, * p<0.1.
Table 4. Results for did models to deal with outliers, endogeneity, and unbalanced distribution of data

| Variables         | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 | Model 9 |
|-------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| DiD Independent Variables |         |         |         |         |         |         |         |         |         |
| Post              | -0.109  | -0.11   | -0.07   | -0.14   | -0.17   | -0.05   | -0.20   | -0.20   | -0.02   |
| Treatment         | 0.12    | 0.10    | 0.11    | 0.01    | -0.01   | 0.02    | 0.08    | 0.05    | 0.07    |
| IFRS              | -0.06   | 0.01    | -0.04   | 0.08    | 0.10    | 0.06    | -0.04   | 0.03    | -0.02   |
| Transparency Independent Variables |         |         |         |         |         |         |         |         |         |
| EBF               | 0.43**  | 0.15    | 0.45*** |         |         |         |         |         |         |
| IFRS*EBF          | -0.01   | -0.01   |         |         |         |         |         |         |         |
| SARS              | 0.36**  | 0.13    | 0.38**  |         |         |         |         |         |         |
| IFRS*SARS         | -0.0    | 0.01    |         |         |         |         |         |         |         |
| TGP               | 0.53**  | 0.29    | 0.56**  |         |         |         |         |         |         |
| IFRS*TGP          | -0.01   | -0.01   |         |         |         |         |         |         |         |
| Firm-level Control Variables |         |         |         |         |         |         |         |         |         |
| UP                | -0.03   | -0.03   | -0.03   | -0.03*  | -0.03** | -0.02*  | -0.02   | -0.02   | -0.03*  |
| URD               | -0.19*  | -0.20** | -0.20** | -0.14   | -0.14   | -0.14   | -0.19** | -0.19** | -0.20** |
| TFD               | 0.26*   | 0.26*   | 0.26*   | 0.25*   | 0.25*   | 0.25*   | 0.26*   | 0.26*   | 0.26*   |
| PMV               | -1.13   | -1.99   | -0.75   | -2.09   | -2.38   | -1.70   | -1.26   | -1.26   | -2.15   |
| OS                | -0.013  | -0.01   | -0.01   | -0.01   | -0.01   | -0.01   | -0.01   | -0.01   | -0.015  |
| IOPD              | 0.063   | 0.11    | 0.054   | 0.18    | 0.19    | 0.14    | 0.062   | 0.063   | 0.11    |
| PFD               | -0.085  | -0.10   | -0.058  | -0.14   | -0.15   | -0.12   | -0.092  | -0.093  | -0.11   |
| OP                | -0.0028*| -0.01*  | -0.01   | -0.01   | -0.01   | -0.01   | -0.01   | -0.01   | -0.01   |
| ET                | 0.01*   | 0.01*   | 0.01*   | 0.01*   | 0.01*   | 0.01    | 0.01    | 0.01    | 0.01    |
| Year and Industry Effects | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Constant          | -1.62*  | -1.29   | -2.01*  | -0.35   | -0.29   | -0.95   | -1.68** | -1.68** | -1.36*  |
This table provides the results of the DiD models for 100 IPO firms from 2005 to 2017. T-statistics in brackets are adjusted for heteroscedasticity at *** p<0.01, ** p<0.05, * p<0.1.

Table 5. Results for did models after including additional control variables

| Variables               | Model 1          | Model 2          | Model 3          | Model 4          | Model 5          | Model 6          | Model 7          | Model 8          | Model 9          |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                        | Clustered on IFRS| Clustered on Years| Clustered on Industries | Clustered on IFRS| Clustered on Years| Clustered on Industries |
| DiD Independent Variables |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Post                   | -0.11            | -0.10            | -0.08            | -0.11            | -0.12            | -0.07            | -0.18            | -0.30            | -0.08            |
|                        | [-0.30]          | [-0.44]          | [-0.37]          | [-0.44]          | [-0.44]          | [-0.28]          | [-0.98]          | [-0.84]          | [-0.80]          |
| Treatment              | 0.07***          | 0.04             | 0.08***          | 0.07             | 0.04             | 0.08             | 0.07             | 0.04             | 0.08             |
|                        | [5.70]           | [0.93]           | [3.25]           | [0.53]           | [0.35]           | [0.58]           | [0.69]           | [0.43]           | [0.78]           |
| IFRS                   | -0.04            | 0.02             | -0.04            | -0.04            | 0.02             | -0.04            | -0.04            | 0.02             | -0.04            |
|                        | [-0.52]          | [0.99]           | [-0.92]          | [-0.18]          | [0.11]           | [-0.17]          | [-0.44]          | [0.34]           | [-0.49]          |
| Transparency Independent Variables |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| EBF                    | 0.45***          | 0.45**           | 0.45***          |                  |                  |                  |                  |                  |                  |
|                        | [3.34]           | [2.21]           | [2.30]           |                  |                  |                  |                  |                  |                  |
| IFRS*EBF               | -0.01            | -0.01            | -0.01            |                  |                  |                  |                  |                  |                  |
|                        | [-0.49]          | [-0.15]          | [-0.39]          |                  |                  |                  |                  |                  |                  |
| SARS                   | 0.48***          | 0.48***          | 0.48**           |                  |                  |                  |                  |                  |                  |
|                        | [6.01]           | [2.84]           | [2.26]           |                  |                  |                  |                  |                  |                  |
| IFRS*SARS              | 0.01             | 0.01             | 0.01             |                  |                  |                  |                  |                  |                  |
|                        | [0.23]           | [0.04]           | [0.12]           |                  |                  |                  |                  |                  |                  |
| TGP                    | 0.51***          | 0.51**           | 0.51**           |                  |                  |                  |                  |                  |                  |
|                        | [4.90]           | [2.52]           | [2.33]           |                  |                  |                  |                  |                  |                  |
| IFRS*TGP               | -0.01            | -0.01            | -0.01            |                  |                  |                  |                  |                  |                  |
|                        | [-0.86]          | [-0.16]          | [-0.46]          |                  |                  |                  |                  |                  |                  |
| Firm-level Control Variables |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| UP                     | -0.02            | -0.03*           | -0.02            | -0.02            | -0.03*           | -0.021           | -0.02**          | -0.03***         | -0.02**          |
|                        | [-1.15]          | [-1.35]          | [-1.02]          | [-1.09]          | [-1.34]          | [-1.05]          | [-2.01]          | [-2.38]          | [-1.71]          |
| Variables         | Model 1       | Model 2       | Model 3       |
|-------------------|---------------|---------------|---------------|
| URD               | -0.19         | -0.20         | -0.19**       |
|                   | [-1.16]       | [-1.23]       | [-1.13]       |
|                   | [-2.32]       | [-2.43]       | [-2.34]       |
|                   | [-1.98]       | [-2.17]       | [-1.94]       |
| TFD               | 0.28***       | 0.28***       | 0.28**        |
|                   | [5.88]        | [8.27]        | [6.77]        |
|                   | [1.59]        | [1.66]        | [1.60]        |
|                   | [1.93]        | [1.97]        | [1.99]        |
| PMV               | -1.82*        | -2.15***      | -1.94***      |
|                   | [-1.62]       | [-4.98]       | [-3.77]       |
|                   | [-0.41]       | [-0.53]       | [-0.45]       |
|                   | [-0.64]       | [-0.74]       | [-0.64]       |
| OS                | -0.60         | -0.01         | -0.01         |
|                   | [-0.88]       | [-0.79]       | [-0.05]       |
|                   | [-0.18]       | [-0.00]       | [-0.053]      |
|                   | [-0.17]       | [-0.01]       |
| IOPD              | 0.05          | 0.09          | 0.05          |
|                   | [0.38]        | [0.47]        | [0.29]        |
|                   | [0.22]        | [0.43]        | [0.22]        |
|                   | [0.44]        | [0.95]        | [0.42]        |
| PFD               | -0.09         | -0.09         | -0.08         |
|                   | [-0.56]       | [-0.69]       | [-0.61]       |
|                   | [-0.60]       | [-0.54]       | [-0.59]       |
|                   | [-0.47]       | [-0.46]       | [-0.46]       |
| OP                | -0.01         | -0.01         | -0.01*        |
|                   | [-1.26]       | [-3.39]       | [-1.16]       |
|                   | [-1.22]       | [-1.60]       | [-0.91]       |
|                   | [-1.48]       | [-1.88]       | [-1.19]       |
| ET                | 0.01          | 0.01          | 0.01*         |
|                   | [1.00]        | [1.04]        | [0.92]        |
|                   | [1.13]        | [1.39]        | [1.15]        |
|                   | [1.36]        | [1.57]        | [1.33]        |
| Cap Effect        | -0.35**       | -0.38*        | -0.31*        |
|                   | [-6.63]       | [-6.06]       | [-5.37]       |
|                   | [-4.80]       | [-4.77]       | [-4.19]       |
|                   | [-3.07]       | [-3.02]       | [-2.73]       |
| GCC2006           | 0.02          | -0.10***      | 0.07*         |
|                   | [0.03]        | [-4.71]       | [1.40]        |
|                   | [0.02]        | [0.02]        | [-0.74]       |
|                   | [0.53]        | [0.02]        | [-0.48]       |
| GFC2008           | -0.02***      | 0.00          | -0.07***      |
|                   | [-2.63]       | [0.11]        | [-6.67]       |
|                   | [-0.26]       | [0.02]        | [-0.89]       |
|                   | [-0.18]       | [0.02]        | [-0.59]       |
| Year and Industry Effects | YES | YES | YES |
| Constant          | -1.67***      | -1.83***      | -1.87***      |
|                   | [-2.95]       | [-4.01]       | [-1.96]       |
|                   | [-2.56]       | [-2.28]       | [-2.00]       |
|                   | [-1.78]       | [-1.99]       |
| Observations      | 100           | 100           | 100           |
|                   | 100           | 100           | 100           |
|                   | 100           | 100           | 100           |
|                   | 100           | 100           | 100           |
| Adjusted R2       | 0.23          | 0.23          | 0.23          |
|                   | 0.23          | 0.23          | 0.23          |
|                   | 0.23          | 0.23          | 0.23          |

This table provides the results of the DiD models for 100 IPO firms from 2005 to 2017. T-statistics in brackets are adjusted for heteroscedasticity at *** p<0.01, ** p<0.05, * p<0.1.

Table 6. Results for did models after using alternative independent variable, Wealth Ratio (WR)
| Transparency Independent Variables |       |       |
|-----------------------------------|-------|-------|
| EBF                               | 0.43* |       |
|                                   | [1.64]|       |
| IFRS*EBF                          | -0.01 |       |
|                                   | [-0.02]|       |
| SARS                              | 0.49**|       |
|                                   | [1.83]|       |
| IFRS*SARS                         | 0.01  |       |
|                                   | [0.15]|       |
| TGP                               | 0.47**|       |
|                                   | [1.70]|       |
| IFRS*TGP                          | -0.01 |       |
|                                   | [-0.02]|       |

| Firm-level Control Variables      |       |       |
|-----------------------------------|-------|-------|
| UP                                | -0.03*| -0.03*| -0.03*|
|                                   | [-1.49]| [-1.59]| [-1.45]|
| URD                               | -0.21*| -0.22**| -0.21*|
|                                   | [-1.63]| [-1.70]| [-1.63]|
| TFD                               | 0.25* | 0.25*  | 0.24* |
|                                   | [1.49] | [1.57] | [1.51] |
| PMV                               | -0.04 | -4.05  | -3.97 |
|                                   | [-0.82]| [-0.89]| [-0.87]|
| OS                                | 0.01  | -0.01  | 0.01  |
|                                   | [0.01] | [-0.10]| [0.05] |
| IOPD                              | 0.09  | 0.12   | 0.09  |
|                                   | [0.40] | [0.59] | [0.41] |
| PFD                               | -0.08 | -0.07  | -0.08 |
|                                   | [-0.36]| [-0.32]| [-0.35]|
| OP                                | -0.01 | -0.01  | -0.01 |
|                                   | [-0.79]| [-1.14]| [-0.55]|
| ET                                | 0.01  | 0.01*  | 0.01  |
|                                   | [1.18] | [1.32] | [1.16] |

| Additional Control Variables      |       |       |
|-----------------------------------|-------|-------|
| Cap Effect                        | -0.28*| -0.30**| -0.24*|
|                                   | [-1.60]| [-1.73]| [-1.39]|
| GCC2006                           | 0.08  | -0.04  | 0.15  |
|                                   | [0.34] | [-0.15]| [0.69] |
| GFC2008                           | -0.02 | 0.01   | -0.07 |
|                                   | [-0.15]| [0.03] | [-0.50]|

| Year and Industry Effects         | YE & IE| YE & IE| YE & IE|
|-----------------------------------|--------|--------|--------|

- \* indicates statistical significance at the 0.05 level.
- \** indicates statistical significance at the 0.01 level.
This table provides the results of the DiD models for 100 IPO firms from 2005 to 2017. T-statistics in brackets are adjusted for heteroscedasticity at *** p<0.01, ** p<0.05, * p<0.1.

Table 7. Results for did models to test the impact of IFRS mandate on IPO underpricing

| Variables                  | Model 1       | Model 2       | Model 3       |
|----------------------------|---------------|---------------|---------------|
|                            | Clustered by IFRS | Clustered by Years | Clustered by Industries |
| DiD Independent Variables  |               |               |               |
| Post                       | -0.13         | -0.18         | -0.10         |
|                            | [-0.81]       | [-0.88]       | [-0.80]       |
| Treatment                  | 3.01***       | 3.01***       | 3.01***       |
|                            | [3.47]        | [3.19]        | [3.19]        |
| IFRS                       | -2.58***      | -2.58***      | -2.58***      |
|                            | [-3.68]       | [-5.30]       | [-5.30]       |
| Firm-level Control Variables|               |               |               |
| URD                        | 0.51*         | 0.51          | 0.51*         |
|                            | [1.34]        | [0.96]        | [1.66]        |
| TFD                        | -0.81***      | -0.81**       | -0.81**       |
|                            | [-4.63]       | [-1.71]       | [-1.70]       |
| PMV                        | -0.41***      | -0.41         | -0.41**       |
|                            | [-2.90]       | [-1.11]       | [-2.03]       |
| OS                         | -0.01***      | -0.01**       | -0.01***      |
|                            | [-2.96]       | [-1.97]       | [-3.66]       |
| IOPD                       | 2.82**        | 2.82***       | 2.82***       |
|                            | [2.24]        | [4.31]        | [2.44]        |
| PFD                        | 1.35**        | 1.35          | 1.35**        |
|                            | [1.84]        | [1.15]        | [2.20]        |
| OP                         | -0.02***      | -0.01*        | -0.01*        |
|                            | [-16.60]      | [-1.40]       | [-1.38]       |
| ET                         | 0.01          | 0.01**        | 0.01*         |
|                            | [1.11]        | [1.70]        | [1.35]        |
| Additional Control Variables|               |               |               |
| Cap Effect                 | -0.41         | -0.41         | -0.41         |
|                            | [-0.51]       | [-0.90]       | [-0.58]       |
| GCC2006                    | -0.61***      | -0.61         | -0.61         |
|                            | [-4.96]       | [-0.52]       | [-0.40]       |
| GFC2008                    | -1.26***      | -1.26***      | -1.26*        |
6. Conclusion

Although IFRS literature calls for the importance to capture the concurrent effect between IFRS mandate and enhancements in the quality of formal institutions on capital market outcomes, such an empirical consideration is overlooked in emerging countries such as Saudi Arabia. The lack of an empirical testing of this issue caused an ongoing misperception about whether to attribute a positive market outcome to the intertemporal improvements in the quality of formal institutions, or to IFRS mandate or to a concurrent effect of the two. While we study the concurrent effect of mandating IFRS standards and changes in formal institutional quality, the individual effects of IFRS mandate and time-variant changes in formal institutional quality on the aftermarket performance of IPO firms are also examined.

Our results confirmed that the absence of IFRS impact in the aftermarket performance of IPO companies helped us to confirm that time-variant changes in transparency in Saudi Arabia are the substitute factor that affects the long-term performance of IPO firms. An enhancement in the level of ethical behaviour of firms, the strengthening of auditing and reporting standards, and an increase in the transparency of government policy-making by one-unit improve the long-term performance of IPO firms by up to 84%. However, we found a concurrent effect of IFRS mandate and variations in formal institutional quality on the aftermarket performance of IPO firms is economically absent. This outcome is not completely unforeseen. This is because the results show an absence of a direct influence of IFRS mandate on the aftermarket performance of IPO firms. As a result, we conclude that IFRS does not offer a long-lasting outcome for IPO firms. In its place, what does really matter in relation to the aftermarket performance of IPO firms in Saudi Arabia, are the intertemporal improvements in the level of formal institutional quality.

Our results provide implications for researchers. This is because our results provide a better understanding of the concurrent effect problem that is under-addressed in the information disclosure and IPO literature. Thus, scholars in the field of IFRS and IPO could benefit from our outcomes of the concurrent effect conception. This relates to whether the probable effect on the long-term performance of IPO companies is solely due to either the IFRS standards, variations in the quality of formal institutions, or, to the concurrent influence of these two components. Saudi Arabia’s mandatory embracement to the application of IFRS is differently driven by the European harmonization efforts that took place simultaneously with the mandatory embracement to the application of IFRS reporting in 2005. In reality, Saudi Arabia, comparable to several emerging market economies, reforms its formal institutions when IFRS was formally introduced in 2008. To our knowledge, there is no existing research has attempted yet to properly capture the concurrent effect notion of the IFRS mandate and variations in the quality of formal institutions in emerging countries. Researchers in the field of IFRS and IPO may consider revising their outlooks about the implications of IFRS as we discover that IFRS has only a short-lived effect and no long-lasting influence on information asymmetry in the IPO market.

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Notes

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Note 2. The primary market exists when a firm sells new stocks or bonds directly to investors (Shi et al. 2013). If those investors decide to sell their shares in the IPO company, then the secondary market is the place to do so. However, in the secondary market, market participants face less information uncertainty concerning IPO firms compared to the primary market. This is because research indicates that investors in the secondary market can attain information from different sources about listed firms including firms’ analysts’ reports, historical financial reports, media coverage, and firm announcements to reduce information uncertainty (Hong et al. 2014; Jamaani & Alidarious 2019; Jamaani & Ahmed 2020). In contrast, in the primary market, the only source of information investors have access to is the one provided in the IPO prospectus which is entirely governed by the issuing firm. It is, therefore, rational to assume the primary market will suffer more information asymmetry compared to the secondary market. Thus, given the above-mentioned characteristics of the secondary market, Shi et al. (2013) and Hong et al. (2014) contend that the outcomes derived from primary market research are difficult to generalize to secondary market studies.

Note 3. This 20% increase in the share price refers to money left on the table by IPO issuers to be cashed out by IPO investors. It means that the former sold their firm at an underpriced value of 20%.

Note 4. Otero and Enríquez (2012) find evidence documenting that IFRS enhances the quality of accounting numbers of IPO firms as the underpricing of IPO firms fell by 27.5% post-IFRS mandate in 2005 in Spain. Their study employed 40 IPO firms listed between 1998 and 2009.

Note 5. Hong et al. (2014) study the IFRS-IPO underpricing association for 1,025 IPO firms listed in 20 market economies that mandated IFRS between 2003 and 2007. They discover a negative relationship between IFRS mandate and IPO underpricing in developed IPO firms only.

Note 6. Lee et al. (2020) find IPO underpricing increases in South Korea post-IFRS mandate in 2011.

Note 7. In Section 4.1, Why Saudi Arabia?, we briefly report a number of reasons for choosing Saudi Arabia as an perfect example of an emerging market economy.

Note 8. For illustration, the World Economic Forum (2017) documents an improvement in the level of security regulations for a number of emerging economies including Saudi Arabia, Brazil, China, India, Indonesia, Mexico, and Russia since 2008. Between 2008 and 2016, they improved their security regulations by nearly 37%, 30%, 32%, 42%, 40%, 43.5%, and 10%, respectively.

Note 9. Accounting disclosure research recognizes the quality of formal institutional environment to have a time-variant characteristic within and between states while quality of national cultures is seen as a time-invariant factor between countries (Houqe & Monem 2016). Thus, in the context of this paper, we disregard the relationship between the quality of national cultures and IFRS mandate. For instance, Hofstede (2011) claims that national cultures do not change notably over the course of time and, for this reason, we claim that those cultures constitute a time-invariant factor. Therefore, we see the necessity to focus on understanding the concurrent association between quality of formal institutional and IFRS mandate.

Note 10. See Footnote 4.
Note 11. See Footnote 5.
Note 12. See Footnote 6.
Note 13. The literature frequently employs the general market index as the suitable benchmark (Alanazi & Al-Zoubi 2015; Zattoni et al. 2017).
Note 14. See Ball (2016) and Houqe and Monem (2016).
Note 15. See Horton et al. (2013) and Dinh et al. (2015). See also Ding et al. (2017) for opposing evidence.
Note 16. The bid-ask spread of share prices is similar to the difference between first listing price and the share price after 12 months’ listing of the IPO firm. It is attributed to the aftermarket performance of IPO firms (Alanazi & Al-Zoubi 2015; Firth & Gounopoulos 2017; Zattoni et al. 2017).
Note 17. See Otero and Enríquez (2012) and Hong et al. (2014).
Note 18. The aim of these formal institutional reforming initiatives has been to make Saudi Arabia’s stock market attractive to foreign direct investment’s inflows in order to promote stock market growth. Consequently, it provides an alternative source of economic growth to reduce the decades-long dependence on oil revenues (Alanazi & Al-Zoubi 2015; Jamaani & Roca 2015).
Note 19. Kaufmann et al. (2017) define weak control of corruption as governments being unable to control or punish the mismanagement of public authority and money which is syphoned off for personal gain.
Note 20. This is on a measure ranging from -2.5 for the worst, to 2.5 for the best practices in fighting corruption.
Note 21. In contrast, Kaufmann et al. (2017) report developed countries such as Australia, the United Kingdom, and the United States as having positive averages for control of corruption, being 1.99, 1.73, and 1.35 out of 2.5, respectively.
Note 22. Hofstede (2011) defines power distance as the unfair distribution of power between people in a specific nation. The author stipulates that when a culture agrees to take the uneven distribution of authority between its members, this culture makes it likely for a hierarchy of authority to prevail. In such a culture, citizens are separated between different controlling and less-powerful clusters of authority. The controlling cluster wields full power and controls the flow of information.
Note 23. In contrast, Hofstede (2011) scores the developed cultures of Australia, the UK and the US as maintaining low power distance scores of 36, 35.5 and 40 out of 100, respectively.
Note 24. Our data starts from January 2005 to December 2017 where IFRS is mandated in 2008, and consequently, our data includes three years pre-IFRS and ten years post-IFRS experience. This is almost five times more than what is used by Hong et al. (2014) who only employ data that provides two years of post-IFRS experience.
Note 25. For example, IFRS was mandatorily adopted in Chile in 2009, Brazil in 2011, Argentina in 2012, Mexico in 2012, Peru in 2012, Sri Lanka in 2012, Russia in 2012, Nigeria in 2012, Ukraine in 2012, and Taiwan in 2013 (IAS Plus 2019).
Note 26. Hong et al. (2014) categorize countries as having large differences between IFRS and local GAAP when there are more than 15 differences between the two.
Note 27. These differences include: IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors; IAS 1 Presentation of Financial Statements; Zakat and IAS 12 Income Tax; IAS 7 Statement of Cash Flows; IAS 16 Property Plant and Equipment; IAS 17 Leases; IAS 19 Employee Benefits; IAS 24 Related Party Disclosures; IAS 34 Interim Financial Reporting; IAS 21 The Effects of Changes in Foreign Exchange Rates; IAS 36 Impairment of Assets; IAS 38 Intangible Assets; IAS 40 Investment Property; IAS39 Financial instruments; and IAS 41 Agriculture.
Note 28. However, all listed IPO businesses in the Kingdom of Saudi Arabia have mandated the applications of IFRS since 2017 (IASPlus 2019).
Note 29. Since 2008, the banking and insurance companies listed on Tadawul have prepared their financial statements and reports in compliance with IFRS while the other 13 sectors do so in compliance with SAS up to 2016 (IFRS Organization 2016). Since 2017, all listed firms on Tadawul have fully complied with IFRS standards.
Note 30. To remove the likelihood of confounding effects in the transition year, we follow Hong et al. (2014) to eliminate observations relating to the year 2008.
Note 31. The DiD technique is a statistical method that replicates an experimental research design utilizing observational study data to analyze the differential effect of treatment (IFRS mandate) on a treatment sample (IPO corporations who mandate IFRS) versus a control sample (IPO corporations who do not mandate IFRS). This procedure has been commonly employed in the IFRS-IPO literature for examining the impact of IFRS mandate on capital market outcomes (Hong et al. 2014; Persakis & Iatridis 2017).

Note 32. We employ unbalanced cross-sectional regression because our IPO data is distributed unevenly across industries.

Note 33. Disclosure and IPO literature provide no consensus concerning the ideal length of time to proxy for long-term performance, as it ranges from a few weeks up to three years (Dorsman et al. 2010; Alanazi & Al-Zoubi 2015; Kamaludin & Zakaria 2018). Due to the use of different time-windows to capture the aftermarket performance of IPO firms, this literature produces widely fragmented results. To overcome this, Zattoni et al. (2017) apply only a one-year window to capture the long-term performance of IPO firms because it allows sufficient time for all related IPO news to be incorporated into the secondary market. Thus, we follow Zattoni et al. (2017) to apply a one-year window as its definition of long-term timeframe.

Note 34. These sources, for instance, include information about the firms’ historical financial reports, analysts’ reports, announcements, and media coverage (Hong et al. 2014; Jamaani & Alidarous 2019).

Note 35. IFRS Foundation (2019) reports that China and India have not permitted IFRS mandate for domestic companies while Argentina, Brazil, Mexico, Indonesia, and Saudi Arabia did so in 2009, 2010, 2008, 2012, and 2008, respectively.

Note 36. For un-tabulated results, we show the results of the diagnostic analysis for residuals to validate that our OLS models are the Best Linear Unbiased Estimator (BLUE). This covers using VIF test to check multicollinearity between explanatory variables, Jarque and Bera normality test to check normality in residuals’ distribution, Durbin and Watson D-statistic test to make sure there is no serial correlation in residuals, and Breusch and Pagan test to examine heteroscedasticity of residuals. All tests provide insignificant results with the exception of the Breusch and Pagan test. This is because we reject the null hypothesis of homoscedasticity at the 5% level of significance. Hence, we follow Jamaani and Ahmed (2020) to adjust for this heteroscedasticity issue employing the White heteroscedastic-robust standard error in all models.

Note 37. In 2013, the CMA executed a “price cap” regulatlon for a first-day price movement limit of 10% of all IPO shares (Reuters 2013). CMA aimed from this regulatory move to alleviate the post-market volatility of IPO stocks, the goal being to shield retail investors from great losses caused by too much volatility. The regulatory intervention has changed the dynamics of Saudi IPO returns since 2013.

Note 38. Since the beginning of Tadawul, the total market capitalization of all listed companies ascended shockingly from $73 billion in 2001 to $442 billion in 2015 (Tadawul 2015). In 2005, with a total market capitalization of $650 billion Tadawul reached its peak before it plunged to $327 billion because of the stock market crisis in 2006. Tadawul rapidly recovered from this crisis and its market capitalization raised to $519 billion in 2007 before it was smushed agian by the GFC in 2008.

Note 39. The WR is defined as the adjusted return from all IPOs within 12 months of listing, divided by the adjusted return from the Tadawul “benchmark” over the same period. A WR larger than 1 means that the IPOs outperformed Tadawul, while a WR less than 1 indicates IPOs underperformed Tadawul (Alanazi & Al-Zoubi 2015).

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