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# The impact of external governance and regulatory settings on the profitability of Islamic banks: Evidence from Arab markets

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## Abstract

This study specifically investigates the effects of external governance mechanisms and regulatory settings on the profitability of Islamic banks operating in the Arab markets from 2003 to 2017. The empirical results underscore that the external governance mechanism and its dimensions in particular the political stability, regulatory quality, rule of law, and control of corruption impact Islamic banks' profitability positively. However, the regulatory settings and its sub-indices particularly the extent of disclosure and ease of shareholder suits have the opposite effect. Likewise, the results of traditional determinants indicate that the profitability of Islamic banks is shaped by the bank-specific, industry-specific, and country and global-level determinants. Results are robust and consistent with alternative estimation procedures and also support for the negative and positive effect of voice and accountability external governance's dimension and inflation, respectively. The findings of this study have important policy implications for regulators, policymakers, and banks' managers.

## KEYWORDS

Arab countries, external governance, Islamic banks, profitability, regulatory settings

## 1 | INTRODUCTION

Islamic banks have developed in both number and size in Muslim and non-Muslim countries. In a report by the World Bank (2014), 308 Islamic financial institutions were operating in the Organization of Islamic Cooperation (OIC) countries while only one existed in 1975 (El Qorchi, 2005). According to the Global Islamic Finance Forum (2018), the total global assets of Islamic banks increased to \$2.431 trillion in 2017 with an annual growth rate of 6%. Islamic banks are a particular type of financial institution which by employing Sharia principles operate differently and have unique micro-operating fundamentals. As approved by the Organization of Islamic Conference (OIC), Islamic banks define as an

'Islamic bank is a financial institution whose status, rules and procedures expressly state its commitment to the principle of Islamic Sharia and the abolishing of the receipt and payment of interest on any of its operations' (Ali & Sarkar, 1995, p. 22). Farook, Kabir Hassan, and Lanis (2011) described Islamic banks as financial intermediaries that work under the controls of Islamic laws and Shariah principles. Archer and Karim (2012) referred to Islamic banks as an ethically funded institution to satisfy the needs of Islamic societies, which are following the Sharia laws in investing money. Since the interest (*riba*) is prohibited in Islamic laws, the profitability in Islamic banks is not associated with interest rate and it is stemming from a particular business model which is affected by bank regulation and Sharia principles. In

contrast to conventional banks, Islamic banks perform alternative financing approaches based on return-bearing contracts.

Since the operation of Islamic banks complies with Sharia principles, the interest of numerous scholars is triggered to conduct different empirical studies to compare the behaviour of Islamic banks with conventional banks (e.g., Albaity & Rahman, 2019; Alexakis, Izzeldin, Johnes, & Pappas, 2019; Athari, Adaoglu, & Bektas, 2016; Beck, De Jonghe, & Schepens, 2013; Boubakri, Chen, Guedhami, & Li, 2019; Hasan & Dridi, 2010; Khediri, Charfeddine, & Youssef, 2015; Safiullah & Shamsuddin, 2019). Especially, several studies have investigated to determine the profitability determinants of Islamic banks due to having the specific characteristic by the prohibition of *riba* (e.g., Ben Khediri & Ben-Khedhiri, 2009; Harisa, Mohamad, & Meutia, 2019; Hassan & Bashir, 2003; Srairi, 2010). Similar to the findings of prior studies about the profitability of conventional banks (e.g., Almaqtari, Al-Homaidi, Tabash, & Farhan, 2019; Athari, 2020a; Djalilov & Piesse, 2016; Love & Rachinsky, 2015; Naceur & Omran, 2011; Tan, 2016), Islamic banks' profitability impacted by the internal factors (e.g., bank-specific variables) and external factors (e.g., industry-specific, country-level variables). For instance, findings of previous studies (e.g., Harisa et al., 2019; Haron, 2004; Hassan & Bashir, 2003; Srairi, 2010) revealed that the internal factors in a particular size, capital adequacy, liquidity, credit risk, and asset quality have a significant effect on the profitability of Islamic banks. Furthermore, findings of prior studies (e.g., Bashir, 2003; Ben Khediri & Ben-Khedhiri, 2009; Haron, 2004; Srairi, 2010; Zarrouk, Ben Jedidia, & Moualhi, 2016) highlighted the significant effect of external factors particularly inflation and GDP growth on Islamic banks' profitability.

While there is extensive literature that has considerably examined the profitability determinants of Islamic banks, few empirical studies have conducted to explore the effect of governance structure on the profitability of Islamic banks. Findings of prior studies (e.g., Ben Khediri & Ben-Khedhiri, 2009; Grassa & Matoussi, 2014; Mollah, Hassan, Al Farooque, & Mobarek, 2017; Zeineb and Mensi, 2018; Alsartawi & Reyad, 2019) indicated that the governance structure has a significant role in the profitability of Islamic banks and implementing strong corporate governance mechanisms corresponds with increasing the efficiency of Islamic banks. In the related literature, the profitability of Islamic banks has not been investigated considerably under the impact of external governance mechanism and quality of regulatory settings. Especially, the literature investigating this linkage is relatively limited for Islamic banks operating in the Arab countries. Therefore, this study fills the gap and

attempts to provide some insights into the literature by examining specifically the effect of external governance and regulatory settings in addition to the traditional determinants on the profitability of listed Islamic banks operating in seven Arabic countries from 2003 to 2017. The other distinctive contribution of the present study is the inclusion of a unique regional dataset of Islamic banks operating in Arab countries. This study also contributes by employing the comprehensive proxies of World Governance Indicators (WGI) and its dimensions<sup>1</sup> for measuring the external governance and also protecting minority investor index and sub-indices<sup>2</sup> for measuring the quality of regulatory settings, respectively. This makes this study unique in the way that it is a comprehensive study in the Islamic banking sector. To date, there is a limited study to conduct this subject. This study is likely to open a new discussion in the Islamic banks' literature.

This study yields some consistent noteworthy highlights. First, the empirical results provide evidence that the bank-specific factors including capital adequacy, assets quality, and bank risk have a statistically significant positive effect on the profitability of Islamic banks. Second, the results indicate that concentration and domestic credit industry-specific factors have a negative and statistically significant effect on Islamic banks' profitability. Third, the empirical results underline that the external governance mechanism and its dimensions in particular the political stability, regulatory quality, rule of law, and control of corruption dimensions impact positively the profitability of Islamic banks. However, the regulatory settings and its sub-indices particularly the extent of disclosure and extent of ease of shareholder suits indices have the opposite effect. Finally, the results reveal that the macroeconomic variable of GDP growth is statistically significant and impacts Islamic banks' profitability positively while the global economic policy uncertainty (GEPU) impacts negatively. Overall, the empirical results show that the profitability of Islamic banks operating in Arab countries is shaped by external governance and regulatory settings in addition to the internal and external traditional determinants. The robustness analysis confirms our findings and also provides significant evidence for the negative effect of voice and accountability external governance's dimension and also the positive effect of inflation. The findings of this study have important policy implications for policymakers, banks' managers, and regulators.

The rest of the article is organized as follows. Section 2 presents a literature review. Section 3 is the determinants of bank profitability and hypothesis development. Section 4 explains the data, models, and methodologies. In Sections 5 and 6, empirical findings and robustness checks are presented. Section 7 presents the conclusions.

## 2 | LITERATURE REVIEW

Over the last three decades, numerous studies have investigated the profitability determinants of banks. In the existing literature, findings of empirical studies suggested that the profitability determinants of banks are generally classified into three categories including the bank-specific determinants, industry-specific determinants, and country-level determinants. The bank-specific determinants are considered as internal factors (e.g., Louzis, Vouldis, & Metaxas, 2012; Rjoub, Civcir, & Resatoglu, 2017; Singh & Sharma, 2016) and country-level determinants are considered as external factors (e.g., Athanasoglou, Brissimis, & Delis, 2008; Masood & Ashraf, 2012; Rjoub et al., 2017). In the empirical literature, various studies have selected the different explanatory variables for measuring the effect of internal and external factors. Focusing on the internal or bank-specific determinants, the majority of studies have considered the bank size, capital adequacy ratio, credit risk, liquidity risk, asset quality, and operational efficiency (e.g., Athanasoglou et al., 2008; Athari, 2020a; Căpraru & Ihnatov, 2014; Dietrich & Wanzenried, 2014; Goddard, Molyneux, & Wilson, 2004; Grira, Hassan, & Soumaré, 2016; Hassan & Bashir, 2003; Pasiouras & Kosmidou, 2007; Petria, Capraru, & Ihnatov, 2015; Rajash & Tarik, 2000; Stiroh & Rumble, 2006). Also, there are some other factors such as dividend payments,<sup>3</sup> domestic political risk, and GEPU that impact firm and bank performance (e.g., Athari, 2020a; Khan, Nadeem, Islam, Salman, & Gill, 2016). For the industry-specific variables, numerous studies (e.g., Athanasoglou et al., 2008; Athari, 2020a; Bourke, 1989; Claeys & Vander Vennet, 2008; Daher, Masih, & Ibrahim, 2015; Maudos & De Guevara, 2004; Molyneux & Thornton, 1992; Naceur & Omran, 2011; Sullivan & Spong, 2007) have selected the variables such as market structure, financial structure, competition, and ownership factors. Moreover, several studies have selected the country-level determinants by focusing on the macroeconomic variables such as GDP growth, inflation rate, exchange rate, and interest rate (e.g., Athanasoglou et al., 2008; Athari, 2020a; Căpraru & Ihnatov, 2014; Dietrich & Wanzenried, 2011, 2014; Flamini, Schumacher, & McDonald, 2009; Naceur & Omran, 2011; Pasiouras & Kosmidou, 2007; Petria et al., 2015; Trujillo-Ponce, 2013).

While majority studies have focused on the effect of internal and external determinants on the profitability of conventional banks, some empirical studies have concentrated mainly on investigating the profitability determinants of Islamic banks (e.g., Ben Khediri & Ben-Khedhiri, 2009; Harisa et al., 2019; Hassan & Bashir, 2003). Especially, the prior empirical studies have focused mainly to examine the profitability determinants

of Islamic banks operating in the Muslim regions such as South East Asia, the Middle East, and Gulf Cooperation Council (GCC) countries (e.g., Ben Khediri & Ben-Khedhiri, 2009; Harisa et al., 2019; Hassan & Bashir, 2003; Khediri et al., 2015; Masood & Ashraf, 2012; Musleh Alsartawi & Reyad, 2019; Srairi, 2010; Zarrouk et al., 2016).

Focusing on the studies about Islamic banks, Hassan and Bashir (2003) in a comprehensive study showed that high loan activities, high capital adequacy, and good macroeconomic conditions lead to an increase in the profitability of Islamic banks. The findings of Bashir (2003) indicated the positive effect of capital adequacy and inflation rate on the profitability of interest-free banks operating in the Middle East countries. Bashir (2003) also showed that the profitability is higher in Islamic banks with the foreign-ownership structure in comparison with the domestically owned banks. Haron (2004) found that internal factors (e.g., liquidity, profit-sharing ratio) and also external factors (e.g., interest rates, market share) are highly correlated with the profitability of Islamic banks. In a study, the findings of Ben Khediri and Ben-Khedhiri (2009) showed that the profitability of Islamic banks operating in Middle East North Africa (MENA) countries is positively associated with GDP growth, inflation rate, and bank concentration. Their findings also suggested that management efficiency and capitalization increase the profitability of banks and in countries that are characterized by a better legal system and better socio-economic conditions Islamic banks have higher profitability. In addition to the aforementioned factors, Masood and Ashraf (2012) stressed that Islamic banks operating in MENA countries have higher profitability due to having a more effective management system. Besides, Srairi (2010) and Zeitun (2012) showed that the profitability of Islamic banks operating in GCC countries is impacted by operational efficiency, capital adequacy, credit risk, and inflation. In recent studies, Zarrouk et al. (2016) underscored that the profitability of Islamic banks operating in the MENA region is positively associated with capital adequacy, asset quality, and banks' cost efficiency while inflation impact negatively. The findings of Harisa et al. (2019) showed that the profitability of Islamic banks operating in Indonesia and Malaysia was positively impacted by the bank size.

In addition to the traditional profitability determinants of Islamic and conventional banks, several studies have recently investigated the effect of internal and external governance mechanism on the profitability of banks (e.g., Aebi, Sabato, & Schmid, 2012; Azofra & Santamaria, 2011; Caprio, Laeven, & Levine, 2007; Sullivan & Spong, 2007). Particularly, some studies have been carried out to examine the effect of governance

mechanisms on Islamic banks' performance. For instance, Grassa and Matoussi (2014) found that the Islamic banks operating in GCC countries are more profitable than those operating in South East Asia due to having the differences between corporate governance characteristics and institutional settings. Kusuma and Ayumardani (2016) showed that bank performance is affected by the efficiency of corporate governance.

Furthermore, the findings of Mollah et al. (2017) revealed that the governance structure plays an important role in the risk-taking and financial performance of Islamic banks compared to conventional banks. Ben Zeineb and Mensi (2018) argued that implementing a strong corporate governance mechanism leads to an increase in the level of banks' efficiency. In particular, their results showed that the specific structure of corporate governance in Islamic banks help banks' managers to take higher risk, which in turn, to achieve higher efficiency. The authors also stressed that improvement in the corporate governance structure is key for Islamic banks to sustain in financial crises and stay survive in a competitive environment. In recent studies, Harisa et al. (2019) found that the quality of good corporate governance (e.g., disclosure) has no significant effect on the profitability of Islamic banks operating in Indonesia and Malaysia. The findings of Alsartawi and Reyad (2019) revealed that financial disclosure has a negative but insignificant effect on the profitability of Islamic banks operating in GCC countries. The authors recommended that the regulatory bodies of these banks should develop instruction to disclose the information to improve the transparency and performance of Islamic banks.

As discussed, the above review of major studies reveals that the internal factors (e.g., bank-specific) and external factors (e.g., industry-specific, country-level) impact banks' profitability. Prior studies also highlighted that governance mechanisms in addition to the traditional determinants impact profitability of banks. In the related literature, despite extensive research on the profitability of conventional banks, only several studies have examined the profitability determinants of Islamic banks. Besides, there is a momentous gap in the related literature to explore comprehensively the impact of external governance and quality of institutional settings on the profitability of conventional banks in general and Islamic banks in particular. Therefore, this study fills a gap and contributes to the related literature by investigating the comprehensive regional study and specifying an empirical framework to examine the impact of external governance and quality of institutional settings in addition to the traditional bank-specific, industry-specific, and country and global-level determinants on the profitability of Islamic banks operating in Arab markets over the period ranging from 2003 to 2017. Furthermore, this study

contributes significantly by using a novel data set, which makes the present study to be significant and also open a new debate in the banks' literature.

### 3 | DETERMINANTS OF BANKS' PROFITABILITY

#### 3.1 | Dependent variables

Following the previous empirical studies (e.g., Almaqtari et al., 2019; Athari, 2020a; Naeem & Baloch, 2017; Zampara, Giannopoulos, & Koufopoulos, 2017), this study employs the common proxies of return on assets (ROA) and return on equities (ROE) to measure the profitability of Islamic banks.

#### 3.2 | Explanatory variables

The explanatory variables which are used in the present study decompose into the bank-specific, industry-specific, and country and global-level determinants. In examining the profitability determinants of banks, previous studies employed the combinations of bank-specific and country-level determinants in the estimation models (e.g., Athanasoglou et al., 2008; Athari, 2020a; Căpraru & Ihnatov, 2014; Dietrich & Wanzenried, 2014; Pasiouras & Kosmidou, 2007; Petria et al., 2015). The bank-specific determinants of profitability are called internal factors while the industry-specific and country-level determinants are considered external factors. This study uses the bank size, capital adequacy, assets quality, deposits growth, and bank risk for measuring the effect of the bank-specific variables. Although several studies (e.g., Athari, 2020a; Khan et al., 2016) showed that dividend payment, domestic political risk, and GEPU impact firm's and banks' profitability, this study excludes these factors due to the unavailability of data and would recommend for further studies. For the industry-specific, the market structure, bank ownership, and financial structure variables are used. For the country-level variables, the external governance and regulatory settings are used in addition to the traditional macroeconomic variables of GDP growth and inflation. Moreover, this study uses GEPU as a global-level factor to capture the spillover effect of foreign countries.

##### 3.2.1 | Bank-specific determinants

In terms of bank-specific determinants, these studies employ variables such as bank size, capital ratio, bank risk, assets quality, and deposits growth.



Numerous studies (e.g., Anbar & Alper, 2011; Ben Naceur & Goaied, 2008; Bikker & Hu, 2002; Elsas, Hackethal, & Holzhäuser, 2010; Goddard et al., 2004; Masood & Ashraf, 2012; Pasiouras & Kosmidou, 2007) reported a significant positive relationship between bank size and profitability. They explained that this may happen due to the benefits of loan diversification, economies of scale, and a higher level of product in larger banks in comparison to smaller banks. However, Dietrich and Wanzenried (2014) conducted a comparative analysis and found no empirical evidence that larger banks are more profitable than medium and small size banks. Besides, the medium-size banks in high-income countries showed slightly less profitable than small banks. Căpraru and Ihnatov (2014) also showed that bank size negatively influences all the profitability ratios suggesting that the larger the bank is, the smaller the profitability ratios are. Similarly, Berger, Hanweck, and Humphrey (1987) and Stiroh and Rumble (2006) showed that there is a negative relationship between the size and profitability of extremely large banks. On the other hand, the findings of Athanasoglou et al. (2008) provided no evidence that size affects banks' profitability. This study uses the natural logarithm of total assets to measure the bank size, as in Athari (2020a), and it is likely to find a positive or negative association between bank size and Islamic banks' profitability.

Findings of studies (e.g., Athari, 2020a; Ben Naceur & Goaied, 2008; Demirgüç-Kunt & Huizinga, 1999; Dietrich & Wanzenried, 2014; Drakos, 2003; García-Herrero, Gavilá, & Santabábara, 2009; Goddard et al., 2004; Pasiouras & Kosmidou, 2007) provided evidence that the banks with a higher level of equity to total assets are more profitable. This relationship is explained since well-capitalized banks due to the lesser need for external financing have lower costs of capital and lower probability of bankruptcy costs and insolvency risk. Andrieș and Cocriș (2010) also discovered that banks with more equity capital had a better performance during the recent financial crisis. Besides, the findings of Ebenezer, Omar, and Kamil (2017) supported a positive association between capital adequacy and banks' profitability. Focusing on Islamic banks, Hassan and Bashir (2003) found that high capital adequacy leads to higher profitability of Islamic banks. Since deposit holders are considered as quasi-equity holders under profit-loss sharing (PLS) contracts, banks' depositors would be absorbed related shocks by the asset's side. Hence, a high level of equity capital would lead to more stability of Islamic banks through lower costs of capital and lower probability of bankruptcy costs (Berger, 1995). However, following the conventional risk–return hypothesis, a negative linkage is expected since banks with higher capital ratios have lower leverage ratios and riskiness (Berger, 1995; Dietrich &

Wanzenried, 2011). This study uses the ratio of equity to total assets to measure the capital adequacy, as in Ben Naceur and Goaied (2008), and it is likely to find a positive or negative association between capital adequacy and Islamic banks' profitability.

Asset quality is considered as an indicator of the financial soundness and health of a bank. Findings of a study by Rani and Zergaw (2017) indicated that asset quality impacts banks' profitability negatively except the bank is at an intolerable level of risk. Focusing on Islamic banks, Beck et al. (2013) pointed out that Islamic banks are relatively better capitalized and have higher levels of assets quality than conventional banks. Findings of studies (Hassan & Bashir, 2003; Rajash & Tarik, 2000) revealed that assets quality of Islamic banks shows unstable rates of return due to the high agency problems and more profit and loss investment. Unlike the previous studies which used the proxy of loan to total assets ratio (Almaqtari et al., 2019; Naeem & Baloch, 2017; Ongore & Kusa, 2013) for measuring the quality of the assets, this ratio is not applicable for Islamic banks as the interest (*riba*) is prohibited in the structure of Islamic banks. Therefore, this study uses the equivalent ratio of total profit-loss sharing and markup-based financing to the total assets (Van Greuning & Iqbal, 2007, pp. 93–94), as in Athari et al. (2016), and also it is likely to find a positive association between assets quality and Islamic bank's profitability.

Deposits are considered as another determinant of banks' profitability. Findings of several studies (e.g., Dietrich & Wanzenried, 2011; Dietrich & Wanzenried, 2014) showed that deposits growth impact banks' profitability significantly though the effect may be either negative or positive. One may expect that a bank with increasing deposits growth to be able to generate greater profits by expanding its business whereas a negative effect may expect due to converting an increasing value of deposits into additional income-earning assets (Dietrich & Wanzenried, 2014). Following the previous studies, this study uses the annual growth of deposits to measure the deposits growth, as in Dietrich & Wanzenried, 2014, and it is likely to find a positive or negative association between deposits growth and Islamic banks' profitability.

Several studies showed that bank risk (e.g., credit risk, liquidity risk, default risk) impacted banks' profitability. Findings of several studies (e.g., Athanasoglou et al., 2008; Căpraru & Ihnatov, 2014; Miller & Noulas, 1997; Petria et al., 2015; Trujillo-Ponce, 2013) showed that a higher credit risk leads to lower banks' profit. Likewise, findings of empirical studies confirmed the relationship between the liquidity risk and banks' profitability though the effect either is positive (Bourke, 1989) or negative (Molyneux &

Thornton, 1992). Focusing on the bank default risk, findings of a study by Pappas, Ongena, Izzeldin, and Fuerter (2017) indicated that Islamic banks have a significantly lower risk of failure than conventional banks. However, Saeed and Izzeldin (2016) showed that a decrease in a default risk is associated with lower efficiency levels. This study uses the Z score to measure the bank default risk, as in Mirzaei, Moore, and Liu (2013), and it is likely to find a positive association between default risk and Islamic banks' profitability.

### 3.2.2 | Industry-specific determinants

In the finance literature, the relationship between concentration and performance is explained by two different hypotheses. The first hypothesis is the Structure-Conduct Performance (SCP) hypothesis, which suggests that concentration leads to improve market power and non-competitive behaviour among economic agents (Evanoff & Fortier, 1988). In line with the SCP hypothesis, banks in highly concentrated markets incline to collude and thus earn monopoly profits by the higher spread between deposit and lending rates (Berger and Hannan, 1998; Gilbert, 1984). The second hypothesis is the Efficient-Structure (ES) hypothesis, which states that higher efficiency in operation corresponds with gaining more market share and consequently turns to higher performance. Several studies confirmed the SCP hypothesis (e.g., Chirwa, 2003; Mendes & Abreu, 2003; Rose & Fraser, 1976) while other studies (e.g., Gillini et al., 1984; Evanoff & Fortier, 1988) supported the ES hypothesis in the banking sector. While both hypotheses imply the positive association between concentration and profitability, the empirical studies found mixed results. For instance, studies (Bourke, 1989; Molyneux & Thornton, 1992; Maudos & De Guevara, 2004; Athanasoglou et al., 2005; Claey's & Vander Vennet, 2008) found a positive effect while a study by Naceur and Omran (2011) found the opposite effect. This study uses the ratio of assets of three largest commercial banks to total commercial banking assets to measure the market structure (e.g., concentration), as in Dietrich and Wanzenried (2014), and it is likely to find a positive or negative association between concentration and Islamic banks' profitability.

Sullivan and Spong (2007) found that an ownership stake for hired managers can improve bank performance. The findings of Micco, Panizza, and Yanez (2007) and Iannotta et al. (2007) showed that state-owned banks operating in emerging countries tend to have lower profitability than privately owned banks. In contrast, the findings of Dietrich and Wanzenried (2011) stressed that

Swiss public-owned banks are more profitable during the financial crisis. A study by Azofra and Santamaría (2011) highlighted that there is a significant relationship between ultimate ownership and Spanish banks' profitability. Their findings showed that banks' efficiency is negatively impacted by lower levels of ownership concentration. Findings of studies by Claessens, Demirgüç-Kunt, and Huizinga (2001) and Aburime (2008) indicated that domestic banks with higher foreign ownership have a lower profitability ratio. This study uses the bank-state ownership dummy variable to measure the bank state-ownership, as in Love and Rachinsky (2015), and it is likely to find a positive or negative association between bank state ownership and Islamic banks' profitability.

The financial structure is another banks' profitability determinant. Ben Naceur and Goaied (2008) by selecting MENA banks showed a robust linkage between the development of financial structure (e.g., banking sector, stock market) and banks' profitability. The development of the stock market facilitates banks and companies to access and raise capital easier for financing new investment opportunities. When stock markets are well-developed, banks have larger profit opportunities due to the better evaluate credit default risk (Demirgüç-Kunt and Huizinga, 2000). However, findings of prior studies (e.g., Athari, 2020a; Mirzaei et al., 2013; Naceur & Omran, 2011) showed a negative effect of financial structure on banks' profitability due to the fact that a high ratio of bank credit to GDP may mirror higher default risk for banks. This study uses the ratio of domestic credit provided by the banking sector to GDP to measure the financial structure, as in Athari (2020a), and it is likely to find a positive or negative association between domestic credit and Islamic banks' profitability.

### 3.2.3 | Country and global-level determinants

In examining the effect of firm and country-level governance on banks' profitability, findings of several studies (e.g., Aebi et al., 2012; Erkens, Hung, & Matos, 2012) showed that the weak corporate governance leads to excessive risk-taking by managers which eventually impact banks' profitability. Findings of Demirgüç-Kunt and Huizinga (1999) showed that better contract enforcement, lack of corruption, and an efficient legal setting are linked with decreasing profitability. The findings of Love and Rachinsky (2015) also indicated that corporate governance positively impacted banks' profitability.

Focusing on Islamic banks, several studies stressed that corporate governance has a significant role in banks'

performance and banks with better-governed structures may have more-efficient operations and better performance. Caprio et al. (2007) pointed out that governance systems would be able to promote bank efficiency by reducing the expropriation of bank resources. Ben Naceur and Goaid (2008) by focusing on MENA banks showed a positive linkage between the legal system and banks' efficiency. Likewise, Grassa and Matoussi (2014) found that Islamic banks operating in GCC are more profitable than those operating in South East Asia due to having differences in their governance characteristics and regulatory frameworks. Furthermore, Kusuma and Ayumardani (2016) confirmed that bank performance is affected by the efficiency of corporate governance. In a study, the findings of Mollah et al. (2017) confirmed that the governance mechanism plays an important role in the risk-taking and financial performance of Islamic banks in comparison to conventional banks. They further argued that although Islamic banks retain a higher capitalization level relative to conventional banks, their governance structure allows them to achieve higher performance by taking a higher risk. Ben Zeineb and Mensi (2018) stated that implementing a strong corporate governance structure increases the level of banks' efficiency. In particular, their results showed that the structure of corporate governance in Islamic banks help them take higher risk levels to achieve higher efficiency. As the bank-level governance data for the investigated countries are not available, this study uses the Worldwide Governance Indicators (WGI) scores to measure the quality of external or country-level governance, as in Seifert and Gonenc (2018), and it is likely to find a positive or negative association between external governance and Islamic banks' profitability.

Moreover, La Porta, Lopez-de-Silanes, Shleifer, and Vishny (2000) in an influential study showed that the level of expropriation risk is higher in countries with poor investor protection settings and insiders are more probable to use the cash flows for their private benefits and perks. Consequently, La Porta et al. (2000) showed that a firm's market value is lower in countries with poor shareholder protection relative to the countries with strong shareholder protection. In a study, the findings of Johnson, Boone, Breach, and Friedman (2000) showed that governance variables (e.g., investor protection, law) are influential predictors of the degree of market declines, particularly during the crisis. The findings of Naceur and Omran (2011) indicated that regulatory settings impact banks' performance.<sup>4</sup> Several studies (e.g., Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999; Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998; Shleifer & Vishny, 1986) argued that the institutional settings impact firms' risk-taking behaviour and firm's

managers are more probable to involve in risk-taking behaviour in countries having a low shareholder protection level. Particularly, as stated by Islamic Financial Services Board (2010), Islamic banks' management teams are more inclined to involve in excessive risk-taking particularly at the disfavour of investment depositors (Archer et al., 1998). This study uses the protecting minority investor (IP) index scores to measure the regulatory settings, as in Athari et al. (2016) and it is likely to find a positive or negative association between investor protection and Islamic banks' profitability.

Empirical studies found that banks' profitability is significantly impacted by the macroeconomic factor of GDP though the sign of the effect is mixed. Findings of several studies (e.g., Dietrich & Wanzenried, 2011; Flamini et al., 2009; Trujillo-Ponce, 2013) revealed a positive nexus between GDP growth and banks' profitability while other studies confirmed a negative relationship (e.g., Almaqtari et al., 2019; Demirgüç-Kunt & Levine, 2004). As discussed by Bernanke and Gertler (1990), the quality of loans decreases during a recession which leads eventually to lower banks' performance. In contrast, demand for investment and stock market transactions would increase significantly during an economic expansion, which ultimately leads to an increase in banks' profitability (Demirgüç-Kunt & Huizinga, 1999; Dietrich and Wanzenried, 2011). This study uses the annual GDP growth as a control for the cyclical output effect, as in Tan (2016), and it is likely to find a positive or negative association between GDP growth and Islamic banks' profitability.

According to a prominent study by Perry (1992), the effect of inflation on banks' profitability depends on whether inflation is anticipated or not. If it is anticipated, banks can faster adjust interest rates than costs increase which eventually positively impact banks' profitability. However, the impact will be negative where inflation is not anticipated and the increase in costs is faster than interest rate adjustments. Consequently, some studies found a positive nexus between inflation and banks' profitability (e.g., Athanasoglou et al., 2008; Demirgüç-Kunt & Huizinga, 1999; Pasiouras & Kosmidou, 2007; Trujillo-Ponce, 2013) while some studies showed the opposite effect (e.g., Naceur and Kandil, 2009; Naceur & Omran, 2011). Following the numerous studies (Almaqtari et al., 2019; Chowdhury & Rasid, 2016; Masood & Ashraf, 2012) which considered the impact of the macroeconomic variable of inflation on banks' profitability, this study uses the annual inflation rate to measure the macroeconomic inflation risk and it is likely to find a positive and negative association between inflation and Islamic banks' profitability.

Economic policy uncertainty (EPU) can affect corporate profitability in several ways. Policy uncertainty may

increase the future cash flow volatility of corporate which resulted in increasing the costs of financial distress. Prior studies (e.g., Pastor & Veronesi, 2013; Gilchrist, Sim, & Zakrajšek, 2014; Brogaard and Detzel, 2015) explained that, during the EPU, the cost of external financing increases and assets' return decreases. This causes to increase cash reserves by companies to create barriers against financial shocks which eventually decrease the profitability. Besides, Gulen and Ion (2015) and Nguyen and Phan (2017) argued that companies are more willing to delay investment during high EPU. Studies by Baker et al. (2016) and Stock and Watson (2012) suggested that policy uncertainty has harmful effects on the economy and also slowed down the recovery of the economy. Unlike the previous studies (e.g., Dietrich & Wanzenried, 2014; Almaqtari et al., 2019; Nguyen, 2019) which examined the effect of the global financial crisis on banks' profitability, this study uses the more accurate and comprehensive index of GEPU, as in Athari (2020a), to measure the spillover effect of foreign countries and it is likely to find a negative association between GEPU and Islamic banks' profitability.

## 4 | DATA AND METHODOLOGY

### 4.1 | Data

In examining the profitability determinants of Islamic banks, this study initially selects the MSCI Arabian Market Index countries containing all GCC and some MENA countries. However, some countries such as Morocco, Tunisia, and Lebanon are eliminated from our sample countries list as these countries do not have Islamic banking systems. Besides, the country of Oman is excluded from the final sample countries list since the Islamic banks' data is so limited. Overall, the sample of this study consists of 29 publicly listed Islamic banks operating in Saudi Arabia, Bahrain, Qatar, Kuwait, United Arab Emirates, Egypt, and Jordan from 2003 to 2017. The empirical investigation of Islamic banks' profitability over a period ranging from 2003 to 2017 is considered because of the availability of data of some variables in 2018 and 2019.

As explained, this study uses the bank-specific, industry-specific, and country and global-level variables to examine the profitability determinants of Islamic banks. Focusing on the bank-specific variables, this study collects all the annual data for the financial variables from the Bankscope database. Especially, the data for some variables is hand-collected from the banks' website due to the unavailability and missing values in Bankscope. Table 1 shows the definitions and sources of all using variables. For the industry-specific variables, the

annual assets of the three largest commercial banks as a share of total commercial banking assets were collected from Bankscope for measuring the level of concentration. Likewise, the annual state ownership was collected from the Thomson Reuters Worldscope database for measuring bank ownership. Moreover, the ratio of domestic credit provided by the banking sector to GDP was collected from the World Bank for measuring the financial structure development. For the country-level variables, the annual Worldwide Governance Indicators (WGI) index scores were collected from the World Bank for measuring the quality of external governance. The annual protecting minority investor index scores were also collected for measuring the regulatory settings. Likewise, this study collects annual GDP growth and inflation rate from the World Bank for measuring the effect of macroeconomic variables. Lastly, this study was collected the annual GEPU index scores for measuring the GEPU.

### 4.2 | Model specification and methodology

In testing the profitability factors of Islamic banks, we decompose the determinants into the bank-specific, industry-specific, and country and global level. Therefore, the practical and operational form can be as follows:

$$\text{Profitability} = f(\text{Bank\_specific}, \text{Industry\_specific}, \text{Country\_level}, \text{Global\_level}).$$

Return on assets (ROA) and return on equities (ROE) are used for measuring profitability. For the bank-specific variables, size (SIZE), capital adequacy (CAD), assets quality (AQ), deposits growth (DQ), and bank risk (BRISK) is used. For the industry-specific variables, concentration (CONC), state-ownership (OWN), and domestic credit (DC) are employed. Moreover, external governance (CG), investor protection (IP), GDP growth (GDPG), and inflation (INF) is used for the country-level variables. Also, GEPU is used as a global factor. The descriptions of all using variables are shown in Table 1.

Equation (1) shows the expanded the aforementioned practical form and performs specifically to examine the effects of CG and IP on Islamic banks' profitability.

$$\begin{aligned} \text{ROA}_{it} = & \alpha_0 + \alpha_1 \text{SIZE}_{it} + \alpha_2 \text{CAD}_{it} + \alpha_3 \text{AQ}_{it} + \alpha_4 \text{DQ}_{it} \\ & + \alpha_5 \text{BRISK}_{it} + \alpha_6 \text{CONC}_{it} + \alpha_7 \text{OWN} + \alpha_8 \text{DC}_{it} \\ & + \alpha_9 \text{CG}_{it} + \alpha_{10} \text{IP}_{it} + \alpha_{11} \text{GDPG}_{it} + \alpha_{12} \text{INF}_{it} \\ & + \alpha_{13} \text{GEPU}_t + \varepsilon_{it}. \end{aligned} \quad (1)$$



**TABLE 1** Definitions and sources of variables

Variable	Definition	Hypothesis	Source
Dependent variable			
Profitability	Net income to total assets ratio (ROA)		Bankscope
	Net income to total shareholder's equity ratio (ROE)		Bankscope
Independent variables			
<i>Bank-specific variables</i>			
Bank size	Natural logarithm of total assets (SIZE)	+/-	Bankscope
Capital adequacy	Shareholder's equity to total assets ratio (CAD)	+/-	Bankscope
Assets quality	Total profit-loss sharing and mark-up-based financing to the total assets ratio (AQ)	+	Bankscope, Banks' websites
Deposits growth	Annual growth of deposits (DQ)	+/-	Bankscope
Bank risk	Natural logarithm of ratio between a bank's (ROA) plus CAD over the standard deviation of the ROA (BRISK). A higher Z-score indicates that there is a higher stability and lower risk	+	Bankscope
<i>Industry-specific variable</i>			
Concentration	Assets of three largest commercial banks as a share of total commercial banking assets (CONC)	+/-	Bankscope
Bank ownership	The dummy variable equals to one if state ownership is above 5% and zero otherwise (OWN)	+/-	Worldscope
Domestic credit	Domestic credit provided by banking sector to GDP (%) (DC)	+/-	World Bank
<i>Country and global-level variables</i>			
Country governance score	The Worldwide Governance Indicators (WGI) constructs aggregate indicators of six dimensions of country governance (CG) as voice and accountability (VA), political stability and absence of violence/terrorism (PS), government effectiveness (GE), regulatory quality (RQ), rule of law (RL), and control of corruption (CC)	+/-	Worldwide Governance Indicators, World Bank
Protecting minority investors score	The annual score of protecting minority investor (IP) measured by the extent of disclosure index (DISC), extent of director liability index (LIAB), extent of ease of shareholder suits index (SUIT), extent of shareholder rights index (RIGHT), extent of ownership and control index (GOV), and extent of corporate transparency index (TRANP)	+/-	Doing business, World Bank
GDP growth	Annual GDP growth (%) (GDPG)	+/-	World Bank
Inflation	Annual inflation rate (%) (INF)	+/-	World Bank
Global economic policy uncertainty	The annual global economic policy uncertainty (GEPU) index is based on a GDP-weighted average of national EPU indices for 20 foreign countries	-	<a href="http://www.policyuncertainty.com">www.policyuncertainty.com</a>

*Note:* The table describes all using variables. The first and second columns provide the names and definitions of the variables that are employed in the econometric model. The third and fourth columns refers to the expected signs and data source of each variable.

Furthermore, Equations (2) and (3) are particularly used by the inclusion of the CG dimensions and IP sub-indices, correspondingly. Equations (2) and (3) perform separately for each CG dimension and IP sub-index due to having a high correlation between the components.

$$\begin{aligned}
 ROA_{it} = & \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 CAD_{it} + \alpha_3 AQ_{it} + \alpha_4 DQ_{it} \\
 & + \alpha_5 BRISK_{it} + \alpha_6 CONC_{it} + \alpha_7 OWN + \alpha_8 DC_{it} \\
 & + \alpha_9 CG \text{ dimensions}_{it} + \alpha_{10} IP_{it} + \alpha_{11} GDPG_{it} \\
 & + \alpha_{12} INF_{it} + \alpha_{13} GEPU_t + \varepsilon_{it}.
 \end{aligned}$$

(2)

$$\begin{aligned}
 ROA_{it} = & \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 CAD_{it} + \alpha_3 AQ_{it} + \alpha_4 DQ_{it} \\
 & + \alpha_5 BRISK_{it} + \alpha_6 CONC_{it} + \alpha_7 OWN + \alpha_8 DC_{it} \\
 & + \alpha_9 CG_{it} + \alpha_{10} IP_{sub-indices_{it}} + \alpha_{11} GDPG_{it} \\
 & + \alpha_{12} INF_{it} + \alpha_{13} GEPU_t + \varepsilon_{it}.
 \end{aligned}
 \tag{3}$$

For the above equations,  $i$  and  $t$  represent an individual bank and year, respectively.  $\varepsilon_{it}$  is an independent error term.

Before conducting analysis, all variables are winsorized at the top and bottom 1% for each year to avoid the outlier problems (Athari, 2020a; Athari et al., 2016). Similar to prior studies (e.g., Almaqtari et al., 2019; Athari, 2020a), the present study tested the stationarity of all variables by employing Fisher's unit root test. The test results reveal that all using variables are stationary however results do not report for a sake of brevity. Also, the panel data approach is employed to estimate the models. As suggested (Baltagi, 2005; Hsiao, 2014; Kyereboah-Coleman, 2007), using panel data can increase the efficiency of estimates relative to the only cross-sectional or time-series data analysis methods and also control for individual heterogeneity and multicollinearity. Similar to the previous studies of banks' profitability (e.g., Aebi et al., 2012; Athari, 2020a), this study employs the panel static linear regression by performing the pooled ordinary least squares (OLS), the fixed effects (FE), the random effects (RE) to estimate the aforementioned equations. This study used the Hausman test (Hausman, 1978) to decide whether the fixed effects or random effects panel estimations are appropriate. The result of Hausman test suggests the use of fixed effects panel data estimator. Applying a linear regression enhances achievement relatively more consistent and comparable estimates for the parameter's models. As argued by Petersen (2009), applying techniques such as fixed effects estimation can improve the efficiency of the estimates.

Besides, this study performs the panel-corrected standard errors (PCSE) methodology, as used by Almaqtari et al. (2019) and Athari (2020a), amongst the pooled OLS, the fixed effects, and random effects regression estimations. Studies by Reed and Webb (2010) and Bailey and Katz (2011) suggested that the PCSE standard error estimate is robust to potential unit heteroskedasticity and contemporaneous correlation. Moreover, as a robustness check, this study also performs dynamic linear regression estimation using the generalized moments method (System-GMM) to check endogeneity problems of dependent and explanatory variables (Athari, 2020a; Roodman, 2006).

## 5 | DATA ANALYSIS AND RESULTS

### 5.1 | Descriptive statistics

Panel (A) of Table 2 presents the descriptive statistics of investigated variables for each sample country. As presented in Panel (A), the sample comprises 29 (out of 34) listed Islamic banks operating in seven countries. Panel (A) shows that Jordan with 2 Islamic banks and Bahrain and Kuwait with 6 Islamic banks have the lowest and highest number of Islamic banks in the sample size, respectively. Focusing on the bank-specific variables, Panel (A) reveals that Egypt and Qatar with the mean value of 0.01 and 0.04 have the lowest and highest profitability ratio (ROA), respectively. Furthermore, Jordan has the lowest mean value of size (SIZE) and asset quality (AQ) with 20.11 and 0.35, correspondingly. For the capital adequacy (CAD) and bank risk (BRISK) variables, Saudi Arabia and Egypt have the highest mean value of 0.49 and 1.92 while Bahrain and the United Arab Emirates has the highest mean value of deposit growth (DQ) with 0.61 and 0.59, respectively.

For the industry-specific variables, Qatar and Bahrain with the mean value of 86.86 and 78.99 have the highest concentration (CONC) ratios. Besides, Egypt has the lowest mean value of state-ownership (OWN) with a mean value of 0.15 whereas Jordan has the highest at 0.50. Moreover, Jordan has the highest mean value for domestic credit (DC) with a mean value of 77.15. Focusing on the country-level variables, the descriptive statistics show that Qatar and Egypt with the mean values of 10.51 and 11.29 have the highest GDP growth (GDPG) and inflation (INF), respectively.

Furthermore, Panel (B) of Table 2 shows the descriptive summary comprising the mean, median, standard deviation, minimum, and maximum values for the investigated variables for the entire countries. The descriptive statistics show that the median value of ROA is 0.02. Likewise, the median value of SIZE, CAD, AQ, DQ, and BRISK bank-specific variables are 22.39, 0.15, 0.56, 0.20, and 1.55, respectively. Particularly, Panel (B) shows that the median value of CONC is 74.88 indicating that the selected Islamic banks operate in highly concentrated markets. Also, the median value of 108.58 GEPU indicates a high level of GEPU throughout the study.

Table 3 presents particularly the descriptive summary of country-level governance (CG) scores and its dimensions in Panel (A). The descriptive statistics show that the United Arab Emirates and Qatar with an average of 0.54 and 0.50 have the highest CG scores while Egypt and Saudi Arabia with an average of  $-0.70$  and  $-0.34$  have the lowest CG scores, respectively. Panel A also

TABLE 2 Descriptive statistics (2003–2017)

Panel (A): Country-specific														
Country	Total IS	Sample IS	ROA	ROE	SIZE	CAD	AQ	DQ	BRISK	CONC	OWN	DC	GDPG	INF
Saudi Arabia	5	5 (100%)	0.03	0.16	24.46	0.49	0.56	0.34	1.57	55.30	0.47	40.82	4.36	3.01
Bahrain	9	6 (66.66%)	0.02	0.03	20.89	0.41	0.46	0.61	1.40	78.99	0.17	59.77	4.90	2.29
Qatar	4	3 (75%)	0.04	0.22	23.62	0.19	0.65	0.39	1.64	86.86	0.17	46.56	10.51	4.41
Kuwait	6	6 (100%)	0.02	0.09	21.30	0.18	0.56	0.45	1.65	78.01	0.20	68.97	4.10	3.79
United Arab Emirates	4	4 (100%)	0.02	0.12	22.88	0.29	0.52	0.59	1.62	55.56	0.40	63.03	4.35	2.73
Egypt	3	3 (100%)	0.01	−0.05	22.75	0.08	0.47	0.17	1.92	58.65	0.15	37.68	4.31	11.29
Jordan	3	2 (66.66%)	0.02	0.11	20.11	0.27	0.35	0.58	1.61	78.62	0.50	77.15	4.66	3.71
Total	34	29 (85.29%)	0.02	0.09	22.20	0.29	0.52	0.46	1.59	70.29	0.33	56.22	5.31	4.55
Panel (B): Whole sample														
Variables	No. of Obs.	Mean	Median	Std. Dev.	Minimum	Maximum								
ROA	435	0.02	0.02	0.04	−0.28	0.18								
ROE	435	0.09	0.12	0.32	−1.85	1.39								
SIZE	435	22.20	22.39	1.92	18.08	26.31								
CAD	435	0.29	0.15	1.00	0.01	12.00								
AQ	435	0.52	0.56	0.20	0.13	0.95								
DQ	435	0.46	0.20	1.31	−0.92	14.07								
BRISK	435	1.59	1.55	0.73	−0.69	3.80								
CONC	435	70.29	74.88	13.05	44.09	93.13								
OWN	435	0.33	0.15	0.47	0.00	1.00								
DC	435	56.22	55.74	19.23	25.61	105.19								
GDPG	435	5.31	4.35	4.93	−7.08	26.17								
INF	435	4.55	3.24	4.83	−4.86	29.51								
GEPU	435	113.88	108.58	42.80	48.37	259.04								

Note: This table shows the descriptive values on the variables over the study period of 2003–2017. For the country-specific, Panel (A) shows the number of Islamic banks (IS) and reports the mean values of each variable. Panel (B) provides descriptive summary of the variables for the investigated countries. Descriptions of the variables are shown in Table 1.

**TABLE 3** Descriptive statistics of country-level governance and its dimensions and investor protection and its sub-indices scores (2003–2017)

Panel (A): Country-level governance (CG) and its dimensions scores									
Country	Country governance score (CG)	Voice and accountability (VA)	Pol. stability/absence of violence/terrorism (PS)	Government effectiveness (GE)	Regulatory quality (RQ)	Rule of law (RL)	Control of corruption (CC)		
Saudi Arabia	−0.34	−1.74	−0.41	−0.05	0.07	0.10	−0.03		
Bahrain	0.05	−1.03	−0.52	0.46	0.68	0.47	0.23		
Qatar	0.50	−0.94	1.06	0.73	0.51	0.72	0.93		
Kuwait	0.07	−0.55	0.25	0.03	0.13	0.40	0.17		
United Arab Emirates (U.A.E)	0.54	−0.94	0.82	1.05	0.71	0.52	1.05		
Egypt	−0.70	−1.11	−1.07	−0.54	−0.51	−0.32	−0.64		
Jordan	−0.05	−0.71	−0.42	0.12	0.20	0.34	0.20		
Mean (AOA)	0.01	−1.01	−0.04	0.26	0.26	0.32	0.27		
Median (MOM)	0.05	−0.94	−0.41	0.12	0.20	0.40	0.20		
Panel (B): Protecting minority investors (IP) and its sub-classification indices scores									
	Protecting minority investors score (IP)	Extent of disclosure index (DISC)	Extent of director liability index (LIAB)	Extent of ease of shareholder suits index (SUIT)					
Saudi Arabia	62.84	7.75	7.75	3.67					
Bahrain	61.25	8.00	4.00	3.00					
Qatar	58.93	4.75	5.67	2.00					
Kuwait	57.00	4.00	9.00	2.11					
United Arab Emirates (UAE)	62.86	5.67	6.83	2.11					
Egypt	50.03	5.5	3.00	3.00					
Jordan	48.11	4.00	4.00	1.00					
Mean (AOA)	57.29	5.67	5.75	2.41					
Median (MOM)	58.93	5.50	5.67	2.11					

Note: This table shows the descriptive statistics of country governance and its dimensions (Panel A) and investor protection and its sub-classification indices (Panel B). AOA is average on average and MOM is median on median.



shows that Saudi Arabia with the average  $-1.74$  and  $0.07$  and Egypt with the average  $-1.11$  and  $-0.51$  have the lowest scores in voice and accountability (VA) and regulatory quality (RQ), respectively. In contrast, Qatar with an average of  $1.06$  and the United Arab Emirates with an average of  $1.05$  have the highest scores in political stability (PS) and control of corruption (CC). Besides, the United Arab Emirates with an average of  $1.05$  has the highest score in government effectiveness (GE).

Moreover, Panel (B) of Table 3 shows the descriptive summary of investor protection (IP) and its sub-indices scores. Panel (B) presents that the United Arab Emirates and Jordan with the average scores of  $62.86$  and  $48.11$  have the highest and lowest IP scores. In addition, Bahrain with an average of  $8.00$ , Kuwait with  $9.00$ , and Saudi Arabia with  $3.67$  have the highest scores of the extent of disclosure index (DISC), director liability index (LIAB), and shareholder suits index (SUIT), correspondingly. Overall, Table 3 (Panels A and B) shows that the entire countries by the median of median (MOM) scores of  $0.05$  for CG and  $58.93$  for IP have a relatively low quality of country-level governance and regulatory settings. Especially, the descriptive summary reveals that the voice and accountability (VA) and political stability (PS) with the MOM  $-0.94$  and  $-0.41$  have the lowest CG dimensions scores. Also, it shows that the shareholder suits index (SUIT) with the MOM  $2.11$  has the lowest IP sub-index score.

## 5.2 | Pearson correlation

Table 4 shows the Pearson correlation matrix for the investigated variables in the present study. The correlation matrix reveals that all explanatory variables have a low correlation indicating that there are no serious multicollinearity issues in this study. However, there is a high level of correlation between CG dimensions and IP sub-indices, which results do not report for sake of brevity. Therefore, these determinants are included in the estimations separately to prevent multicollinearity problems.

## 5.3 | Empirical results

Table 5 presents the regression estimations results for the baseline Equation (1) for different specifications using the pooled OLS, the fixed effects (FE), the random effects (RE), and PCSE methodologies. Focusing on the bank-specific determinants, the estimation results show that the coefficient of capital adequacy (CAD) is positive and significant implying that Islamic banks with higher CAD

**TABLE 4** Pearson correlation matrix

	SIZE	CAD	AQ	DQ	BRISK	CONC	OWN	DC	CG	IP	GDPG	INF	GEPU
SIZE	1.000												
CAD	$-0.075$	1.000											
AQ	$0.157^*$	$-0.033$	1.000										
DQ	$0.163^*$	$0.072$	$0.293^*$	1.000									
BRISK	$0.168^{**}$	$0.121^{***}$	$0.043$	$-0.016$	1.000								
CONC	$-0.442^*$	$-0.016$	$0.051$	$-0.077$	$-0.047$	1.000							
OWN	$0.201^{**}$	$-0.091$	$-0.084$	$0.057$	$0.199^{***}$	$-0.292^*$	1.000						
DC	$-0.461^*$	$0.017$	$-0.226^*$	$-0.321^*$	$-0.117^{***}$	$0.340^*$	$-0.348^*$	1.000					
CG	$-0.125^{**}$	$-0.016$	$0.066$	$0.138^{**}$	$-0.097$	$0.388^*$	$-0.290^*$	$0.253^*$	1.000				
IP	$0.144^{**}$	$0.031$	$0.331^*$	$0.337^*$	$-0.107$	$0.057$	$-0.090$	$-0.423^*$	$0.059$	1.000			
GDPG	$0.081$	$-0.034$	$0.237^*$	$0.266^*$	$0.133^{**}$	$0.236^*$	$0.182^{***}$	$-0.414^*$	$0.264^*$	$0.247^*$	1.000		
INF	$0.061$	$-0.058$	$-0.013$	$-0.039$	$-0.039$	$-0.152^{**}$	$0.237^{**}$	$-0.184^*$	$-0.258^*$	$-0.229^*$	$0.066$	1.000	
GEPU	$0.023$	$0.061$	$-0.367^*$	$-0.276^*$	$0.131^{***}$	$0.055$	$0.563^*$	$0.238^*$	$-0.087$	$-0.382^*$	$-0.201^*$	$-0.015$	1.000

\*Indicates statistical significance at the 1% level. \*\*Indicates statistical significance at the 5% level. \*\*\*Indicates statistical significance at the 10% level.

TABLE 5 The determinants of Islamic banks' profitability (2003–2017)

Dependent variable: Return on assets (ROA)									
Independent variables	Pooled (OLS)			Fixed effects (FE)			Random effects (RE)		
	Coefficient	Z	Prob.	Coefficient	t	Prob.	Coefficient	Z	Prob.
Bank-specific variables									
SIZE	−0.176	−1.43	0.154	−0.312	−1.48	0.141	−0.173	−1.43	0.154
CAD	1.035*	2.36	0.000	0.892*	2.29	0.000	1.035***	1.74	0.085
AQ	0.108***	1.67	0.095	0.115***	1.68	0.094	0.112***	1.67	0.095
DQ	0.021	0.40	0.686	0.036	0.72	0.474	0.023	0.40	0.686
BRISK	1.902**	2.48	0.013	2.561**	2.62	0.010	1.951**	2.48	0.013
Industry-specific variables									
CONC	−1.751**	−2.24	0.025	−2.447*	−3.53	0.001	−1.752**	−2.24	0.025
OWN	−0.951	−0.09	0.931	−0.344	−0.03	0.975	−0.951	−0.09	0.931
DC	−1.698*	−4.28	0.000	−1.434*	−3.26	0.001	−1.698*	−4.28	0.000
Country and global-level variables									
CG score	1.812*	3.18	0.000	2.576***	1.73	0.093	2.812*	3.18	0.001
IP score	−1.387***	−1.73	0.085	−0.474**	2.53	0.031	−1.387***	−1.74	0.092
GDPG	0.910*	2.30	0.000	0.704***	1.99	0.095	0.912*	2.30	0.000
INF	1.077	1.23	0.218	0.623	0.67	0.501	1.072	1.23	0.218
GEPU	−0.571*	−4.65	0.000	−0.523*	−3.97	0.000	−0.570*	−4.65	0.000
Constant	2.439*	3.51	0.000	1.191*	2.59	0.000	2.493*	3.51	0.000
Adj. R <sup>2</sup>	0.534			0.549			0.534		
Hausman test				31.66*					

Note: This table shows the determinants of Islamic banks' profitability over the period of 2003–2017 using the pooled (OLS), fixed effects, random effects, and panel-corrected standard errors regressions. Descriptions of the variables are shown in Table 1. Standard errors are asymptotically robust to heteroscedasticity. ROA is the net income to total assets ratio; SIZE is the natural logarithm of total assets; CAD is the shareholder's equity to total assets ratio; AQ is the total profit-loss sharing and mark-up-based financing to the total assets ratio; DQ is the annual growth of deposits; BRISK is the natural logarithm of ratio between a bank's (ROA) plus CAD over the standard deviation of the ROA; concentration (CONC) is the assets of three largest commercial banks as a share of total commercial banking assets; bank ownership (OWN) is the dummy variable equals to one if state ownership is above 5% and zero otherwise; domestic credit (DC) is the domestic credit provided by banking sector to GDP; CG is the Worldwide Governance Indicators (WGI) score; IP is the protecting minority investor index score. GDPG is the annual GDP growth; INF is the annual inflation rate; GEPU is the annual global economic policy uncertainty index.

\*Indicates statistical significance at the 1% level.

\*\*Indicates statistical significance at the 5% level.

\*\*\*Indicates statistical significance at the 10% level.

have higher profitability. This finding supports the result of previous studies (e.g., Athari, 2020a; Dietrich & Wanzenried, 2014; García-Herrero et al., 2009; Goddard et al., 2004; Pasiouras & Kosmidou, 2007), which showed that banks with higher levels of capital adequacy ratio are more profitable. Also, the results reveal that the coefficient of asset quality (AQ) is positive and significant. Findings of previous studies (e.g., Demircuc-Kunt, Klapper, & Randall, 2013; Rajash & Tarik, 2000) showed that Islamic banks have high levels of AQ and are better capitalized. Likewise, the estimation results show that the coefficient of bank risk (BRISK) is positive and statistically significant suggesting that Islamic banks are more profitable when BRISK or default risk is lower. However, the results do not provide significant evidence for the effect of size (SIZE) and deposit growth (DQ) on the profitability of Islamic banks.

Focusing on the industry-specific variables, results indicate that the concentration (CONC) impact negatively on Islamic banks' profitability. The negative statistical significance of CONC is consistent with the findings of studies by Berger, 1995 and Naceur and Omran (2011) and underscore that the higher CONC leads to lower Islamic banks' profitability. As argued by Boone and Weigand (2000), the negative nexus between market concentration and banks' profitability would be explained since a higher bank concentration might be the outcome of tougher competition in the banking industry. Moreover, in line with prior studies (e.g., Athari, 2020a), our results show that domestic credit (DC) has a statistically significant negative effect on Islamic banks' profitability. As Mirzaei et al. (2013) discussed, banks operating in emerging countries, banks may be obliged by government policies to provide credit even for unprofitable investment projects.

Furthermore, results show that the coefficient of external governance (CG) is significant and positive. This finding is consistent with the results of prior studies (e.g., Ben Naceur & Goaid, 2008; Ben Zeineb & Mensi, 2018; Grassa & Matoussi, 2014; Kusuma & Ayumardani, 2016; Mollah et al., 2017), which showed that governance plays an important role in the performance of Islamic banks. Caprio et al. (2007) pointed out that governance systems would be able to promote bank efficiency by reducing the expropriation of bank resources. Table 5 also shows that investor protection (IP) impacts Islamic banks' profitability negatively, which the sign is in line with our expectation. Results suggest that the quality of institutional settings matters and has an important role in determining banks' profitability. Likewise, Table 5 reveals that the coefficient of GDP growth (GDPD) is statistically significant and impact Islamic banks' profitability positively.

Focusing on the global-level factor, findings provide evidence that GEPU has a significant negative effect on Islamic banks' profitability, which supports the study by Athari (2020a). Following Gilchrist et al. (2014) and Brogaard and Detzel (2015) argument, a higher GEPU may lead to increase future cash flow volatility and raise the costs of external financing, which eventually reduce the assets' return and profitability. The findings of Khediri et al. (2015) also stressed that the profitability of Islamic banks operating in GCC countries negatively impacted by the global subprime mortgage crisis.

Table 6 presents the estimation results of Equations (2) and (3) by using the pooled (OLS) regression for the entire countries. Panel (A and B) of Table 6 shows specifically the effects of external governance (CG) dimensions and investor protection (IP) sub-indices on Islamic banks' profitability, respectively. Panel (A) reveals that the coefficients of political stability (PS), regulatory quality (RQ), rule of law (RL), and control of corruption (CC) are positive and significant. However, results do not provide evidence for the voice and accountability (VA) and government effectiveness (GE) dimensions though the coefficients' signs are in line with our expectations. Panel (A) also shows that among CG dimensions, CC and RQ have an outstanding positive effect on Islamic banks' profitability. Findings suggest that banks' profitability is higher in countries where having better ability in controlling corruption and better regulatory systems. As Looney (2005) explained, MENA countries are impartially making decent progress across six main governance measures particularly CC, RQ, and RL. Our findings also are consistent and support the study by Ben Khediri and Ben-Khedhiri (2009), which findings revealed that bank profitability is higher in countries with better legal systems. Also, it supports the findings of Naceur and Omran (2011), which showed that improvement of corruption and law impact banks' performance positively.

Moreover, Panel (B) shows that the coefficients of the extent of the disclosure (DISC) and ease of shareholder suits (SUIT) indices are negative and significant; however, the results do not provide significant evidence for the extent of director liability index (LIAB). Our findings support the study by Musleh Alsartawi and Reyad (2019), which showed a negative but insignificant association between financial disclosure and profitability of Islamic banks. Musleh Alsartawi and Reyad (2019) also suggested that regulatory bodies should develop suitable policies for disclosing information to improve the transparency and performance of Islamic banks. Remarkably, results show that SUIT has an outstanding negative impact on the profitability of Islamic banks relative to sub-indices. This finding is consistent with our expectations as the median score of SUIT is relatively lower than other IP sub-indices in the investigated countries as shown in Table 3.

**TABLE 6** The effect of country-level governance dimensions and investor protection sub-indices on Islamic banks' profitability (2003–2017)

<b>Dependent variable: Return on assets (ROA)</b>						
<b>Panel (A): Country-level governance (CG) dimensions scores</b>						
<b>Independent variables</b>	<b>Voice and accountability (VA)</b>	<b>Political stability and absence of violence/terrorism (PS)</b>	<b>Government effectiveness (GE)</b>	<b>Regulatory quality (RQ)</b>	<b>Rule of law (RL)</b>	<b>Control of corruption (CC)</b>
CG score	−1.116 (−1.02)	1.729*** (1.69)	2.137 (1.35)	2.543** (2.58)	1.105* (3.75)	2.741* (3.89)
IP score	−1.692* (−2.20)	−1.723*** (−1.69)	−1.475 (−0.77)	−1.646 (−0.88)	−1.129* (−3.57)	−1.624** (−1.89)
Bank-specific	Yes	Yes	Yes	Yes	Yes	Yes
Industry-specific	Yes	Yes	Yes	Yes	Yes	Yes
Country and global-level	Yes	Yes	Yes	Yes	Yes	Yes
Adj. $R^2$	0.521	0.521	78.26*	0.520	0.540	0.538
<b>Panel (B): Protecting minority investors (IP) sub-indices scores</b>						
	<b>Extent of disclosure index (DISC)</b>	<b>Extent of director liability index (LIAB)</b>	<b>Extent of ease of shareholder suits index (SUIT)</b>			
CG score	1.780* (3.11)	1.763* (3.27)	1.187* (3.15)			
IP score	−1.608* (−2.54)	−0.93 (−0.37)	−2.879*** (−1.88)			
Bank-specific	Yes	Yes	Yes			
Industry-specific	Yes	Yes	Yes			
Country and global-level	Yes	Yes	Yes			
Adj. $R^2$	0.534	0.531	0.535			

Note: This table shows the pooled estimation results of Islamic banks' profitability under the effect of country-level governance dimensions (Panel A) and protecting minority investor sub-indices (Panel B), respectively. Standard errors are asymptotically robust to heteroscedasticity. Z-value reports in parenthesis.

\*Indicates statistical significance at the 1% level.

\*\*Indicates statistical significance at the 5% level.

\*\*\*Indicates statistical significance at the 10% level.

## 6 | ROBUSTNESS ANALYSIS

This study conducts several robustness tests to check the consistency in the results. First, this study re-estimated all equations by employing an alternative dependent variable of return on equity (ROE) as used in the previous studies (e.g., Aebi et al., 2012; Athanasoglou et al., 2008; Athari, 2020a; Bucevska & Hadzi Misheva, 2017; Dietrich & Wanzenried, 2014). Tables 7 and 8 show the estimation results. The robustness tests estimation results in Tables 7 and 8 underscores that the bank-specific and industry-specific variables impact Islamic banks' profitability. Results are in line with the findings shown in Table 5 and show that the effect of BRISK is more pronounced on Islamic banks' profitability. Consistently, Table 7 also highlighted that CG and IP impact Islamic

banks' profitability positively and negatively, respectively. Moreover, the robustness results support the previous studies (e.g., Athanasoglou et al., 2008; Demirgüç-Kunt & Huizinga, 1999; Trujillo-Ponce, 2013) and reveal that the macroeconomic variable of inflation (INF) impact Islamic banks' profitability positively. Findings also show that GEPU has a negative spillover effect on Islamic banks' profitability in the investigated countries.

Furthermore, the robustness results in Panel (A) of Table 8 confirm that the dimensions of CG namely PS, RQ, RL, and CC have a statistically significant positive effect on the profitability of Islamic banks though the magnitude of the effect of CC is relatively higher. As explained by Looney (2005), MENA countries are increasingly making progress in country-level governance measures especially CC. Consistently, Naceur and



TABLE 7 Robustness checks I

Dependent variable: Return on equity (ROE)													
Independent variables		Pooled (OLS)			Fixed effects (FE)			Random effects (RE)			Panel-corrected standard errors (PCSE)		
		Coefficient	Z	Prob.	Coefficient	t	Prob.	Coefficient	Z	Prob.	Coefficient	Z	Prob.
Bank-specific variables													
SIZE	−0.018	−0.14	0.889	−0.151	−0.69	0.490	−0.017	−0.14	0.889	−0.125	1.44	0.166	
CAD	1.534***	1.84	0.066	0.754***	1.67	0.073	1.339***	1.84	0.066	1.203***	1.81	0.070	
AQ	0.142**	2.11	0.034	0.164**	2.32	0.022	0.133**	2.11	0.034	0.147**	2.16	0.031	
DQ	0.072	0.14	0.890	0.089	0.17	0.867	0.054	0.13	0.890	0.010	0.18	0.859	
BRISK	2.333**	1.99	0.032	2.126***	1.89	0.065	2.224***	1.69	0.073	1.780*	2.51	0.001	
Industry-specific variables													
CONC	−1.098***	−1.76	0.075	−1.954*	−3.03	0.003	−1.099**	−2.04	0.034	−1.173***	1.68	0.063	
OWN	−0.862	−0.96	0.336	−0.344	−0.03	0.975	−0.629	−1.09	0.232	−0.473	−0.88	−0.153	
DC	−1.945*	−4.73	0.000	−1.886*	−4.15	0.000	−1.946*	−4.73	0.000	−1.558*	−4.27	0.000	
Country and global-level variables													
CG score	2.887***	1.68	0.092	1.932*	2.31	0.000	2.812*	2.58	0.001	2.215*	2.45	0.001	
IP score	−1.759*	−2.91	0.000	−0.855***	−1.83	0.069	−1.642***	−1.91	0.066	−1.424***	−1.94	0.052	
GDPG	0.643	0.89	0.374	0.405	0.55	0.581	0.611	0.89	0.374	0.628**	2.10	0.035	
INF	0.583***	1.75	0.080	0.254	1.10	0.272	0.581***	1.75	0.080	0.793***	1.81	0.071	
GEPU	−0.551*	−4.34	0.000	−0.505*	−3.71	0.000	−0.550*	−4.11	0.000	−0.777*	−5.66	0.000	
Constant	1.311*	2.35	0.000	2.781*	3.11	0.000	2.403**	2.10	0.023	2.566	1.46	0.154	
Adj. R <sup>2</sup>	0.498			0.518			0.497						
Hausman test				33.28*									

Note: This table shows the robustness test estimation results of Islamic banks' profitability over the period of 2003–2017 using the pooled (OLS), fixed effects, random effects, and panel-corrected standard errors regressions. Descriptions of the variables are shown in Table 1. Standard errors are asymptotically robust to heteroscedasticity. ROE is the net income to total shareholder's equity ratio; SIZE is the natural logarithm of total assets; CAD is the shareholder's equity to total assets ratio; AQ is the total profit-loss sharing and mark-up-based financing to the total assets ratio; DQ is the annual growth of deposits; BRISK is the natural logarithm of ratio between a bank's (ROA) plus CAD over the standard deviation of the ROA; concentration (CONC) is the assets of three largest commercial banks as a share of total commercial banking assets; bank ownership (OWN) is the dummy variable equals to one if state ownership is above 5% and zero otherwise; domestic credit (DC) is the domestic credit provided by banking sector to GDP; CG is the Worldwide Governance Indicators (WGI) score; IP is the protecting minority investor index score. GDPG is the annual GDP growth; INF is the annual inflation rate; GEPU is the annual global economic policy uncertainty index.

\*Indicates statistical significance at the 1% level.

\*\*Indicates statistical significance at the 5% level.

\*\*\*Indicates statistical significance at the 10% level.

TABLE 8 Robustness checks II

Dependent variable: Return on equity (ROE)						
Panel (A): Country-level governance (CG) dimensions scores						
Independent variables	Voice and accountability (VA)	Political stability and absence of violence/terrorism (PS)	Government effectiveness (GE)	Regulatory quality (RQ)	Rule of law (RL)	Control of corruption (CC)
CG score	−1.744** (−2.24)	1.442*** (1.84)	2.628 (0.25)	2.289** (1.69)	2.186** (2.33)	2.471*** (1.67)
IP score	−1.833* (−2.96)	−1.935* (−2.20)	−2.016** (−1.83)	−1.916 (−0.99)	−1.674 (−0.87)	−1.871*** (−1.78)
Bank-specific	Yes	Yes	Yes	Yes	Yes	Yes
Industry-specific	Yes	Yes	Yes	Yes	Yes	Yes
Country and global-level	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R <sup>2</sup>	0.511	0.497	0.498	0.493	0.498	0.498
Panel (B): Protecting minority investors (IP) sub-indices scores						
	Extent of disclosure index (DISC)	Extent of director liability index (LIAB)	Extent of ease of shareholder suits index (SUIT)			
CG score	1.895*** (1.67)	1.472*** (1.66)	2.085** (2.05)			
IP score	−1.429* (−2.14)	−0.441 (−0.17)	−2.209* (−2.65)			
Bank-specific	Yes	Yes	Yes			
Industry-specific	Yes	Yes	Yes			
Country and global-level	Yes	Yes	Yes			
Adj. R <sup>2</sup>	0.495	0.494	0.497			

Note: This table shows the robustness test pooled estimation results of Islamic banks' profitability under the effect of country-level governance dimensions (Panel A) and protecting minority investor sub-indices (Panel B), respectively. Standard errors are asymptotically robust to heteroscedasticity. Z-value reports in parenthesis.

\*Indicates statistical significance at the 1% level.

\*\*Indicates statistical significance at the 5% level.

\*\*\*Indicates statistical significance at the 10% level.

Omran (2011) showed that improvement of the CG dimensions especially CC and RL has a positive effect on the profitability of banks. Likewise, the robustness results show that VA in addition to the afore-mentioned CG dimensions impacts Islamic banks' profitability negatively. This is not surprising since the VA is the least improved factor among external or country-level governance measures in MENA countries (Kandil, 2009). However, results do not provide evidence for the PS and GE dimensions though the signs are in line with our expectations. Moreover, the results in Panel (B) suggest that DISC and SUIT impact Islamic banks' profitability negatively. Similar to the results shown in Table 6, results do not provide significant evidence for LIAB. Overall, the robustness results in Tables 7 and 8 show that CG and its

dimensions with the positive signs and IP and its sub-indices with the negative signs impact Islamic banks' profitability.

Second, this study re-estimated Equation (1) by performing the dynamic panel data estimator method (System-GMM) (Arellano & Bover, 1995; Blundell & Bond, 1998), as in (Athari, 2020a; Athari et al., 2016), to control the endogeneity problem of dependent variables. Table 9 (column 1) shows the estimation results for both ROA and ROE dependent variables. Also, Equation (1) is re-estimated by using (System-GMM) as the bank-specific control variables are improbable to be strictly exogenous (Athari, 2020a). Table 9 (column 2) shows the estimation results for both ROA and ROE dependent variables. Results are similar and consistent as shown in previous

TABLE 9 Robustness checks III

Independent variables	Panel (A): ROA		Panel (B): ROE	
	(1)	(2)	(1)	(2)
Bank-specific variables				
Lagged of dependent variable	0.168 (0.62)	0.187 (0.56)	0.096 (0.83)	0.088 (0.77)
SIZE	−0.136 (−0.73)	−0.141 (−0.68)	−0.122 (1.25)	−0.135 (0.94)
CAD	0.544* (4.70)	0.525* (3.68)	0.894* (4.37)	0.915* (4.55)
AQ	0.226* (3.78)	0.247* (4.55)	0.211* (3.58)	0.232* (3.89)
DQ	0.012 (0.46)	0.016 (0.44)	0.014 (1.24)	0.013 (1.02)
BRISK	1.978** (2.02)	2.105* (4.10)	1.882** (2.09)	1.757*** (1.71)
Industry-specific variables				
CONC	−1.748* (−5.10)	−1.426* (−4.66)	−1.155** (2.02)	−1.124* (4.40)
OWN	−0.306 (−0.88)	−0.341 (−0.67)	−0.457 (−1.02)	−0.335 (−1.42)
DC	−1.216** (−1.98)	−1.153*** (−1.71)	−1.233* (−5.10)	−1.142* (−4.42)
Country and global-level variables				
CG score	2.247* (4.46)	2.336* (5.17)	2.195* (3.87)	2.234* (2.86)
IP score	−1.157* (−3.60)	−1.134* (−4.43)	−1.533** (−2.15)	−1.442** (−2.02)
GDPG	0.902* (3.63)	0.818* (3.54)	0.733* (4.66)	0.8148** (1.96)
INF	0.768 (1.34)	0.655 (0.88)	0.725* (4.12)	0.694* (3.66)
GEPU	−0.825* (−4.02)	−0.748* (−3.57)	−0.756* (−4.25)	−0.735** (−2.15)
Constant	1.416** (2.09)	0.873 (1.27)	1.421*** (1.68)	0.877 (0.85)
Hansen-test	(0.465)	(0.448)	(0.453)	(0.458)
M <sub>2</sub> -test	(0.366)	(0.355)	(0.373)	(0.375)

Note: This table shows the robustness estimation results using the dynamic panel data method (System-GMM). The Hansen and M<sub>2</sub> tests conducted to test the validity of instruments and serial correlation, respectively.

\*Indicates statistical significance at the 1% level.

\*\*Indicates statistical significance at the 5% level.

\*\*\*Indicates statistical significance at the 10% level.

tables and indicate that the profitability of Islamic banks operating in the Arabic countries is shaped by the bank-

specific, industry-specific, and country and global level determinants.

## 7 | CONCLUSION

Although numerous studies have examined the traditional determinants of banks' profitability in developed and developing countries, the effects of external governance mechanisms and regulatory settings have not been examined specifically on interest-free or Islamic banks. Therefore, the present study specified an empirical framework to investigate empirically the effects of external governance mechanisms and regulatory settings in addition to the traditional bank-specific, industry-specific, and country and global determinants on the profitability of Islamic banks operating in Arab countries from 2003 to 2017. Focusing on the bank-level determinates, the empirical results reveal that that Islamic banks with higher levels of CAD are more profitable. Also, the results provide significant evidence that Islamic banks with better assets quality and more stability have higher profitability. For the industry-specific variables, the estimation results indicate that the concentration and domestic credit impact Islamic banks' profitability negatively.

Furthermore, results underscore that the external governance mechanism and regulatory settings impact the profitability of Islamic banks positively and negatively, respectively. Especially, results indicate that the improvement of external governance dimensions particularly political stability, regulatory quality, rule of law, and control of corruption increase the profitability of Islamic banks. However, the lower quality of regulatory settings particularly the extent of disclosure index and extent of ease of shareholder suits index correspond with decreasing the profitability of Islamic banks. Moreover, results provide significant evidence for the positive and negative effects of GDP growth and GEPU on the profitability of Islamic banks. Overall, the results indicate that the profitability of Islamic banks operating in the Arabic countries is shaped by the bank-specific, industry-specific, and country and global level determinants. Specifically, the empirical results outlined in this article provide some evidence that the external governance mechanism and regulatory settings have a significant effect on the profitability of Islamic banks. The results are robust and consistent when alternative model specifications are conducted and also provide significant evidence for the negative and positive effects of voice and accountability external governance's dimension and inflation, respectively.

The results of the present study have significant implications for policymakers, bankers, regulators, and analysts. Regulators and policymakers should improve more external governance dimensions and implement more effective regulatory reforms to enhance the profitability of Islamic banks. Policymakers and bankers should focus on the bank and industry-specific

determinants that play an essential role in the profitability of Islamic banks. Also, they should give more attention to the macroeconomic factors particularly GDP growth and inflation, which have a significant effect on the profitability of Islamic banks. Lastly, banks' managers and policymakers should be diversified their Sharia-compliant investment and financing activities and also using hedging assets to improve the profitability of the Islamic banks to control the severe effect of global uncertainty on banks' profitability.

Although this article provides strong empirical findings for modelling the impact of external governance mechanism and regulatory settings on the profitability of Islamic banks, further empirical research should be investigated individually or regionally for other Muslim and non-Muslim countries which provide interest-free banks and offer Sharia-compliant products to provide a comprehensive picture. Besides, further studies may also be considered at bank-level corporate governance to test whether both bank and country-level governance serve as complements or substitutes. The study by Love and Rachinsky (2015) demonstrated that incorporating voluntary corporate governance mechanisms by banks is only effective if countries have a strong institutional environment. Especially, findings of Safiullah and Shamsuddin (2019) highlighted that the Shariah supervisory board has a significant role in improving the efficiency of Islamic banks.

## ENDNOTES

<sup>1</sup> <https://databank.worldbank.org/source/worldwide-governance-indicators>

<sup>2</sup> <https://www.doingbusiness.org/>

<sup>3</sup> Findings of several studies (e.g., Athari, 2020b; Athari et al., 2016; Huang, Wu, Yu, & Zhang, 2015; Jabbouri, 2016; Kaźmierska-Józwiak, 2015; Yusof & Ismail, 2016) showed that the factors of investor protection, asset compositions, leverage, liquidity, profitability, earnings, investment, growth, size, and risks impact firms' dividend payouts decisions.

<sup>4</sup> Over the last three decades, several studies confirmed that the quality of investor protection matters and impact companies' financial decisions (e.g., Goyal & Muckley, 2013; Huang, Elkinawy, & Jain, 2013; Jiraporn, Kim, & Kim, 2011; Kusnadi, 2011; Seifert & Gonenc, 2018).

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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