

Does corruption affect the profitability of Islamic banks?

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Abstract. The impact of corruption on the profitability of Islamic banks is ambiguous. This study aims to clarify this relationship by using a global sample of 240 banks from 41 countries over the period 2012-2023. The study employs both dynamic and static panel data models, using the Corruption Perception Index as the key corruption measure, and includes various control variables. Our findings indicate that changes in corruption levels significantly affect the profitability of Islamic banks. Increased corruption is associated with a decrease in banks' ROAA and ROAE. This implies the necessity for policymakers to establish and enforce robust measures aimed at deterring Islamic banks from participating in corrupt practices. Additionally, we recommend that Islamic banks proactively develop a robust governance framework to prevent and combat corruption effectively. The findings remain consistent under various model specifications and highlight the importance of addressing corruption to enhance the financial performance of Islamic banks.

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1. INTRODUCTION

Corruption is attracting a lot of attention in all countries of the world. It is typically deemed inherently unethical, and its mere presence raises concern. It brings harm to society (Sartor & Beamish, 2020), organizations (Moore, 2008) and the state (Tanzi, 1998) and is generally acknowledged as a problem that must be solved (Yakubu, 2020; Lyeonov et al., 2023). Corruption is also commonly regarded as a significant impediment to both social and economic development (Abuzayed et al., 2024; Zhang et al., 2023; Yarovenko et al., 2024), potentially leading to a less efficient financial and banking system. The presence of corruption in the banking system adds to operational inefficiencies, attracts riskier borrowers, and can amplify systemic vulnerabilities - potentially escalating into severe banking crises if left unchecked (Akbar, Ur Rehman, Bouri et al., 2024). In environments marked by substantial corruption, there is an elevated risk of channeling funds into unproductive projects (Bougatef, 2017). This occurs because bank managers may authorize loans with adverse prospects solely to reap personal gains through bribery and corrupt practices, disregarding the inherent risks associated with these loans (Bolarinwa & Soetan, 2019). Furthermore, loans tainted by corruption typically represent lower-quality lending decisions that might not have been authorized under normal circumstances, thereby increasing the likelihood of them turning into non-performing assets (Akins et al., 2017). As a result, banks operating costs increase. However, some researchers argue that corruption does not throw sand on wheels of economic and financial system development, but quite in contrary grease it. They argue that corruption paradoxically impacts bank performance positively by enabling individuals to bypass misguided government policies and bureaucracy. It also fosters competition for scarce government resources (Aidt, 2003). This competition ultimately results in a more streamlined and effective delivery of financial services than would be achieved under normal circumstances (Abuzayed et al., 2024). Also, since corruption means higher risks for the banks, they can charge higher fees for their services, which can result in higher profitability (Yekini et al., 2019).

Our study is focused on Islamic banks. The financial world has long embraced conventional banking as a standard practice driven primarily by profit maximization (Ben Khediri & Ben-Khediri, 2009). However, since the 1970s, Islamic banks have emerged, aiming not only to replicate functions of conventional banks but also to contribute significantly to the socio-economic objectives of Islam. As an esteemed Muslim economist Muhammad Umer Chapra asserts, Islamic banks should proactively support objectives like economic prosperity, full employment, social and economic justice, fair wealth distribution, and maintaining monetary stability (Chapra, 1985). Thus, these banks are expected to operate ethically, prioritizing the welfare of society. To ensure ethical conduct, Islamic banks adhere to Sharia principles, the religious law of Muslims. Central to these principles is the prohibition of usury (*riba*), which is rooted in the Quran - the holy book of Muslims - and the hadiths, the recorded sayings and actions of Muhammad, the Messenger of Allah. Both those main sources of Sharia condemn *riba*, however do not define it. Nevertheless, unlike in contemporary Western civilization, where usury denotes excessive interest charges on loans, most Islamic economists define *riba* as any amount added beyond the original principal (Hasanuz Zaman, 2001). This prohibition fundamentally shapes Islamic banking operations, as they cannot rely on interest-based transactions. Furthermore, Islamic financial institutions must adhere to principles such as avoiding uncertainty (*gharar*), prohibiting speculation (*maysir*), refraining from trading in forbidden (*haram*) products like alcohol, pork, pornography, and tobacco. Moreover, banks should base their operations on a participation model, where all parties involved in a financial transaction share both the profits and losses arising from it (Sobol, 2015). These principles collectively guide Islamic banking practices toward ethical and socially responsible ends. The compliance of practices and activities - such as products, instruments, operations, and management - of each Islamic bank with Sharia principles is overseen by a specialized independent body known as the Sharia Supervisory Board (SSB) (Elamer et al., 2019).

Given that the Islamic banking system is intended to adhere to the principles of Sharia, which are overseen by SSB, it should ideally be free from corruption. And yet, as per the analysis of current literature, a perceived correlation emerges between corruption and Islamic bank profitability. Moreover, numerous Islamic countries are currently grappling with high levels of corruption. Thus, the aim of our article is to examine the relationship between changes in the level of corruption and Islamic bank profitability. Few papers study the effects of corruption on performance of Islamic banks. The results from these limited research papers are also various, mainly because the sample sizes are small, or the number of countries analyzed is limited. To the best of our knowledge, our study is the first to examine the impact of corruption on the profitability of Islamic banks worldwide. Furthermore, as research specifically focused on the correlation between corruption and Islamic bank profitability is still in its nascent stages, and the existing findings are inconclusive, we anticipate contributing additional evidence to further elucidate this issue. Our analysis aims to determine the impact of corruption on Islamic banks profitability, considering both micro-economic and macro-economic factors that influence their financial performance.

The rest of the paper is structured in the following order. We start with the literature review on the relationship of corruption and the profitability of both conventional and Islamic banks. The section then proceeds to the research methodology, then presents the data analysis, followed by the study's findings and discussion. The paper's conclusion highlights the implications and limitations, as well suggests a direction for further studies.

2. LITERATURE REVIEW

Empirical research examining the impact of corruption on bank profitability is still in its early stages and lacks an abundance of data. One of the earliest studies, which took corruption into account as one of the variables that may affect the profitability of banks, was the study by Demirgüç-Kunt & Huizinga (1999). They investigated the impact of a variety of determinants on the profitability of banks from 80 countries over the years 1988-1995. According to their findings, the lower the government corruption, the lower the interest margins and profitability, and this relationship is weaker in wealthier countries. Similarly, Mongid & Tahir (2011), who investigated the impact of corruption on the profitability of banks in six ASEAN (Association of Southeast Asian Nations) countries over the period of 2003-2008, found that corruption has a positive and significant effect on bank profitability. The same results were achieved by Aburime (2011), who investigated the impact of corruption on the profitability of 48 banks in Nigeria between 1996 and 2006, as well as by Bougatef (2017), who examined commercial banks in Tunisia for the period 2003–2014. Also, Yekini et al. (2019), found a positive relationship between the level of corruption and the profitability of 123 commercial banks operating in the fifteen banks from Economic Community of West African States (ECOWAS) in the years 2002-2016. However, contrary findings were obtained by Asteriou et al. (2021), who investigated 681 European banks between 2000 and 2012, and by Yakubu (2020), who focused on banks in Ghana in the years 2008-2017. They found that corruption affects the profitability of banks negatively. Bolarinwa & Soetan (2019) investigated the impact of corruption on profitability of 111 commercial banks from 33 highly corrupted countries in Africa and 56 commercial banks selected from five of 10 least corrupt countries of the world, which included Denmark, Canada, Sweden, New Zealand and Norway. The sample covered the years 2011-2017. The findings confirmed both views on the influence of corruption on bank profitability. Specifically, a positive effect was observed in the least corrupt countries, whereas both positions were validated in countries with high levels of corruption.

Even fewer studies have investigated the influence of corruption on the performance of Islamic banks. Their findings were also inconclusive. Ben Khediri & Ben-Khediri (2009) examined the determinants of profitability of 40 Islamic banks in the Middle East and North Africa (MENA) region over the years 1999–

2006. The determinants they studied included bank-specific and country-specific variables, including macroeconomic conditions, market structure and institutional development. According to their findings, corruption affects Islamic bank performance insignificantly. Arshad & Rizvi (2013), who investigated 30 Islamic banks from 10 highly corrupt countries, found that corruption has a significant positive impact on their performance. The R^2 of their model, however, is only 2.2%, which is very low. Therefore, their model does not explain the relationship well enough. Yunan (2021), who investigated 61 Islamic banks from 12 Organization of Islamic Cooperation (OIC) countries, found that corruption has a significant and negative influence on the performance of Islamic banks. While the number of banks they analyzed was relatively big compared to other studies, their study spanned only three years. Similar results were achieved by Akbar, Ur Rehman, & Ijaz (2024), who investigated how corruption impacts the profitability of 70 Islamic and 66 conventional banks across nine countries during 2015-2021. Their findings indicate that corruption significantly reduces bank profitability, although Islamic banks are less negatively impacted than their conventional counterparts. Aish et al. (2022) explored the relationship between corruption and profitability across 19 Islamic and 53 conventional banks situated in Malaysia and Pakistan. Their results indicate that Islamic banks gain from corruption in a less corrupt country (Malaysia) and suffer from it in a more corrupt country (Pakistan). The primary limitation of this study is its restriction to only two countries, which constrains the generalizability of its conclusions.

In summary, only a few studies have examined the impact of corruption on the profitability of Islamic banks. These studies yield varied and sometimes contradictory findings. Additionally, it is uncertain whether their results can be generalized to the global Islamic banking sector, as they are based on limited samples.

3. DATA AND METHODS

We consider return on average assets (*ROAA*) and return on average equity (*ROAE*) as our dependent variables to assess profitability. *ROAA* is derived by dividing net income by average total assets, whereas *ROAE* is computed as net income over average shareholders' equity. Both indicators quantify the managerial effectiveness in converting financial resources into net returns (Sobol et al., 2023). Following Huang (2020), we utilize *ROAA* in primary analyses and *ROAE* as a robustness check. As an independent variable, an annual change in the Corruption Perception Index (CPI) of Transparency International (variable *CORR*) has been utilized. The CPI systematically ranks countries worldwide by the extent to which public sector corruption is believed to exist, employing a 0-100 scale, where 0 reflects a perception of widespread corruption and 100 indicates a perception of a corruption-free environment (Transparency International, 2023). The CPI is widely recognized and utilized in academic research and policy analysis as a comprehensive measure of perceived levels of public sector corruption across different countries (Afonso & de Sá Fortes Leitão Rodrigues, 2022; Mamo et al., 2024; Osman, 2019). The CPI aggregates data from a variety of reputable sources, reflecting expert assessments and opinion surveys to provide a nuanced picture of corruption levels. This makes it a suitable and reliable indicator for cross-country comparisons. Given that our study spans multiple countries, the CPI's standardization allows for consistent and comparable measurements of corruption across different national contexts, facilitating robust panel data analysis.

We further incorporated a range of control variables into the analytical model, encompassing both bank-specific factors and macroeconomic factors. The decimal logarithm of total assets was used as a measure of the size of a bank (*LogTA*) (Athanasoglou et al., 2008). Equity to total assets (*ETA*) represents the proxy of capital adequacy ratio (Yunan, 2021). As a proxy for asset quality, the ratio of non-performing loans to gross loans (*NPL*) was used (Ally, 2014). As a ratio measuring efficiency, we employed the non-interest expenses to average assets ratio (*NIE*) (Mehzabin et al., 2023), and net loans to deposits and short-term funding (*NLDF*) was used as a liquidity ratio (Abduh & Idrees, 2013). Changes in gross domestic

product in the bank's country compared to the previous year (*GDP*) and the annual consumer price index in the bank's country (*INF*) were used as proxies of the economic cycle (Yunan, 2021).

Our analysis is based on an initial sample of 240 Islamic banks from 41 countries over the period 2012–2023. The bank-level data were retrieved from Orbis database maintained by Bureau Van Dijk. Macroeconomic data were obtained from the World Bank database. Descriptive statistics of the entire research sample are presented in Table 1. The dataset was unbalanced, so in the case of missing data, observations were excluded from the final analysis.

Table 1

Variable	Obs.	Mean	Std. Dev.	Min	Max
<i>ROAA</i>	2,128	0.812	6.234	-53.166	68.868
<i>ROAE</i>	2,052	9.161	22.673	-209.178	217.487
<i>CORR</i>	2,496	-0.048	2.427	-10.000	36.000
<i>LogTA</i>	2,127	6.227	0.949	2.769	8.613
<i>ETA</i>	2,126	20.013	30.851	-311.936	99.970
<i>NPL</i>	1,315	10.289	26.206	0.000	538.436
<i>NIE</i>	2,128	5.520	7.162	-9.291	104.503
<i>NLDF</i>	1,932	84.097	90.373	-50.278	975.765
<i>GDP</i>	2,701	2.457	5.555	-33.492	86.826
<i>INF</i>	2,614	14.673	37.645	-3.749	359.100

Source: Authors' own calculations.

Initially, a multicollinearity assessment was conducted, revealing no evidence of multicollinearity among the variables (max VIF < 1.39, mean VIF = 1.17). Table 2 displays the outcomes of the pairwise correlation and multicollinearity analyses. We did not test the data for stationarity as the dataset was based on a relatively short, twelve-year time series. The large cross-section and relatively short time series preclude the necessity for stationarity testing (Wooldridge, 2010).

Table 2

Panel A: pairwise correlation										
Variable	1	2	3	4	5	6	7	8	9	10
<i>ROAA</i> (1)	1.000									
<i>ROAE</i> (2)	0.554*	1.000								
<i>CORR</i> (3)	0.012	-0.011	1.000							
<i>LogTA</i> (4)	-0.055*	0.200*	-0.060*	1.000						
<i>ETA</i> (5)	0.274*	-0.147*	0.038	-0.439*	1.000					
<i>NPL</i> (6)	-0.209*	-0.132*	0.011	-0.316*	0.033	1.000				
<i>NIE</i> (7)	-0.114*	-0.110*	0.028	-0.219*	0.029	0.209*	1.000			
<i>NLDF</i> (8)	0.034	-0.084*	0.026	-0.147*	0.258*	-0.099*	0.120*	1.000		
<i>GDP</i> (9)	-0.040	-0.056*	0.040*	0.030	-0.056*	-0.095*	0.003	0.068*	1.000	
<i>INF</i> (10)	0.130*	0.338*	0.099*	-0.012	-0.114*	-0.029	0.078*	-0.102*	-0.207*	1.000
Panel B: diagnostics of multicollinearity										
VIF		1.01	1.39	1.10	1.37	1.25	1.16	1.04	1.04	

Note: * denotes statistical significance at the 5% level.

Source: Authors' own calculations.

The analysis commenced with the application of the following specification of the dynamic model:

$$Y_{i,t} = \beta_0 + \delta Y_{i,t-1} + \beta_1 CORR_{it} + \beta_k X_{k,it} + \alpha_i + \varepsilon_{i,t},$$

where $Y_{i,t}$ denotes the dependent variable for bank i at time t , β_0 is the intercept term, $Y_{i,t-1}$ captures the one-period lagged dependent variable for bank i , δ reflects the persistence of performance over time, $X_{k,it}$ is the set of k control variables for bank i in period t , β_k represents the parameter for k -th control variables, and α_i is an individual-specific effect for bank i that does not vary across time. The two-step system GMM estimator, introduced by Blundell & Bond (1998), was utilized for estimation.

The dynamic effect was found to be statistically significant only in the case of modeling the *ROAA* variable, whereas the *ROAE* model did not exhibit statistical significance for the dynamic effect. Moreover, the AR(1) test indicated no presence of first-order autocorrelation in the *ROAE* model. Given that our panel spans 11 time periods, the application of GMM may result in weak instrument issues, thereby reducing estimation efficiency. Consequently, to ensure consistency in subsequent analyses, we opt for the fixed-effects (FE) models and random-effects (RE) models, which yield more robust results for panels with a relatively short time dimension. For each dependent variable, we use the Hausman test to select the appropriate estimation method (Hausman, 1978). Robust standard errors were utilized due to the presence of heteroskedasticity. The applied static model has the following form:

$$Y_{i,t} = \beta_0 + \beta_1 CORR_{it} + \beta_k X_{k,it} + \alpha_i + \varepsilon_{i,t} .$$

The subsequent section outlines the findings derived from the analysis.

4. EMPIRICAL RESULTS AND DISCUSSION

First, we analyzed the impact of changes in corruption on *ROAA*. The outcomes derived from the estimation procedure are shown in Table 3. The dynamic model meets the required assumptions. We did not observe any problems with first-order autocorrelation. Moreover, the results of the Hansen test did not indicate any issues or violations of the instrumental variable assumptions (Hansen, 1982). The dynamic approach indicates that there is a slight positive relationship between corruption reduction and the *ROAA* of Islamic banks.

Table 3

Impact of changes in corruption on *ROAA*

Variable	Dynamic	FE	RE
<i>ROAA</i> (Lagged)	0.266** (0.121)		
<i>CORR</i>	0.021** (0.010)	0.044*** (0.012)	0.039*** (0.012)
<i>LogTA</i>	0.223 (0.158)	0.467 (0.543)	0.408 (0.281)
<i>ETA</i>	0.007 (0.006)	0.063** (0.027)	0.025* (0.013)
<i>NPL</i>	-0.033** (0.015)	-0.048** (0.022)	-0.049** (0.021)
<i>NIE</i>	-0.155*** (0.055)	-0.240*** (0.077)	-0.201*** (0.065)
<i>NLDF</i>	-0.002 (0.002)	0.000 (0.001)	0.001 (0.001)
<i>GDP</i>	0.020* (0.010)	0.040*** (0.014)	0.040*** (0.015)
<i>INF</i>	0.048*** (0.013)	0.055*** (0.008)	0.058*** (0.006)
<i>Constant</i>	-0.819 (1.153)	-2.301 (3.703)	-1.810 (2.092)
Observations	1099	1144	1144
Number of banks	141	150	150
Number of instruments	74		
Within R ²		0.38	0.37
Between R ²		0.15	0.26
Overall R ²		0.27	0.34
AR(1)	$\hat{\rho} = -2.39$ $p\text{-value} = 0.01$		
AR(2)	$\hat{\rho} = -0.53$ $p\text{-value} = 0.59$		
Hansen test	$\chi^2(34) = 80,13$ $p\text{-value} = 0.08$		
Hausman-test		$\chi^2(8) = 45.08$ $p\text{-value} = 0.00$	

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors for static models are presented in parentheses.

Source: Authors' own calculations.

The FE and RE models indicate a positive relationship between *ROAA* and *CORR*. For both models, the *CORR* variable was statistically significant at the 1% level. The estimated value of the parameter in both models differs only by 0.005. Both models fit the empirical data relatively well, but the Hausman test indicates that the FE model is more appropriate. The results indicate that reducing the level of corruption in a country improves the profitability of Islamic banks, measured as *ROAA*. The data fit to the model can be considered satisfactory because our study is more exploratory than predictive in nature.

Additionally, both models demonstrated a positive impact of capital adequacy and economic conditions (measured by GDP change and inflation) on the profitability of Islamic banks, measured by *ROAA*. On the other hand, the variables *NPL* and *NIE* had a negative and statistically significant effect on profitability in both models. It should be noted that the variable *LogTA* was insignificant.

In Table 4, we present an analysis of *ROAE*. The obtained results confirm the relationships observed for *ROAA*. The values of the *CORR* parameter are positive and statistically significant. The Hausman test shows that the FE model is more appropriate; however, both the FE and RE models indicate that reducing corruption has a positive impact on bank profitability, measured as *ROAE*. The fit of both models to the empirical data is satisfactory.

Table 4

Impact of changes in corruption on *ROAE*

Variable	Dynamic	FE	RE
<i>ROAE</i> (Lagged)	0.066 (0.109)		
<i>CORR</i>	0.180** (0.088)	0.201** (0.084)	0.014* (0.085)
<i>LogTA</i>	4.954*** (1.411)	13.207*** (3.998)	7.102*** (1.723)
<i>ETA</i>	0.114 (0.079)	0.589** (0.266)	0.197* (0.116)
<i>NPL</i>	-0.202*** (0.074)	-0.211*** (0.072)	-0.270*** (0.072)
<i>NIE</i>	-1.003*** (0.293)	-1.399*** (0.418)	-1.051*** (0.287)
<i>NLDF</i>	-0.015 (0.015)	0.013 (0.014)	0.016 (0.012)
<i>GDP</i>	0.147** (0.072)	0.212** (0.106)	0.203* (0.106)
<i>INF</i>	0.590*** (0.132)	0.388*** (0.046)	0.421*** (0.064)
<i>Constant</i>	-26.458*** (9.638)	-83.536*** (28.149)	-39.759*** (12.451)
Observations	1072	1118	1118
Number of banks	139	148	148
Number of instruments	74		
Within R ²		0.25	0.24
Between R ²		0.22	0.36
Overall R ²		0.20	0.28
AR(1)	$\hat{\zeta}=-1.43$ $p\text{-value}=0.15$		
AR(2)	$\hat{\zeta}=-0.69$ $p\text{-value}=0.48$		
Hansen test	$\chi^2(34)= 86,94$ $p\text{-value}=0.03$		
Hausman-test		$\chi^2(8)=38.45$ $p\text{-value}=0.00$	

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors for static models are presented in parentheses.

Source: Authors' own calculations.

Taking into account the control variables, it should be noted that both the FE and RE models indicated a statistically significant positive relationship between the profitability of Islamic banks, measured by *ROAE*, and asset size, capital adequacy, GDP changes, and inflation. Both models also indicated a significant negative relationship between profitability and non-interest expenses to average assets. Additionally, both models indicated a significant negative impact of the *NPL* variable. However, the impact of the *NLDF* variable on *ROAE* was not statistically significant in either model.

Comparing the findings of our research with those of other studies focused on Islamic banks, our study contradicts the findings of research on Islamic banks' profitability conducted by Arshad & Rizvi (2013), which suggested that reducing corruption leads to a decline in profitability for Islamic banks. It also does not support the findings of Ben Khediri & Ben-Khediri (2009), which indicated that the impact of corruption on the profitability of Islamic banks is insignificant. However, our results align with the findings of Yunan (2021), who found that corruption negatively affects profitability of Islamic banks in GCC countries, as well as Akbar, Ur Rehman, & Ijaz (2024), who also reached a similar conclusion. They also partially align with the results of Aish et al. (2022), who found a similar relationship in Pakistan.

It should be emphasized that most of the control variables used in the model exert the expected and theoretically consistent impact on the profitability of Islamic banks, which confirms the results' reliability. The positive relationship between bank size, measured by the decimal logarithm of total assets, and the profitability of Islamic banks indicates that these banks benefit from economies of scale. Our findings are consistent with many previous studies of Islamic banks (Abduh & Idrees, 2013; Akbar, Ur Rehman, & Ijaz, 2024; Al-Qudah & Jaradat, 2013; Arshad & Rizvi, 2013; Yunan, 2021). The negative influence of asset quality on the profitability of Islamic banks compels them to allocate a significant portion of their profits to provisions for covering expected credit losses. Consequently, this reduces overall profitability (Sobol et al., 2023). This result confirms the research of Wasiuzzaman & Ahmad Tarmizi (2010). Our study reveals a positive and significant relationship between capital adequacy, measured by the equity to assets ratio, and the performance of Islamic banks. Banks with strong capital bases can better pursue business opportunities and manage expenses, leading to higher profitability. They borrow less and secure external financing at lower costs. Additionally, a higher capital adequacy ratio signifies a bank's creditworthiness and stability (Sun et al., 2017). Our findings align with those of Zarrouk et al. (2016). The non-interest expenses to average assets ratio, which is a measure of efficiency, negatively and significantly impacts the performance of Islamic banks. Such a relationship between the efficiency ratio and the profitability of Islamic banks is expected and consistent with previous studies (Ben Khediri & Ben-Khediri, 2009; Sun et al., 2017; Yunan, 2021). Additionally, our study reveals that two macroeconomic variables, *GDP* and *INF*, have a significant and positive impact on the profitability of Islamic banks, measured by both *ROAA* and *ROAE*. This finding is expected and in line with some other studies (Ben Khediri & Ben-Khediri, 2009; Wasiuzzaman & Ahmad Tarmizi, 2010). Higher GDP growth drives increased demand for bank financing. Furthermore, when economic conditions improve, the quality of financing portfolios tends to improve, resulting in decreased credit losses and lower provisions that banks must set aside. This ultimately enhances bank profitability. Inflation can positively impact the profitability of Islamic banks by increasing returns on their asset-backed financing and profit-sharing contracts. Islamic banks primarily engage in asset-backed financing, such as *murabaha* (cost-plus financing) and *ijara* (leasing). These contracts often include fixed markups that can be adjusted to reflect inflation, ensuring that the bank's earnings keep pace with rising prices. Moreover, in transactions involving the sale of goods with fixed markups, an increase in inflation raises the price of these goods, leading to higher financing amounts and, consequently, greater returns for the bank. This effect also applies to Islamic banks' profit-sharing contracts, such as *mudaraba* and *musharaka*. When inflation drives up business revenues, banks earn higher returns from their profit-sharing agreements.

The results of previous research on the impact of corruption on the profitability of Islamic banks are ambiguous and largely dependent on the countries covered by the study. Thus, we decided to analyze subsamples differentiated by the level of corruption in the countries. Following Transparency International (2023), we divided countries into three groups: Low Corruption Countries ($CPI \geq 60$), Moderate Corruption Countries ($30 < CPI < 60$), and High Corruption Countries ($CPI \leq 30$). As a result of this division, the Low, Moderate, and High Corruption Countries groups consisted of 7, 20, and 14 countries, respectively. In Table 5, we present the estimation results of only the FE models, as they are preferred for each subgroup. The results suggest that the impact of changes in the level of corruption on the profitability of Islamic banks varies across countries. It occurs mainly in Moderate Corruption Countries. In Low Corruption Countries, we did not observe a statistically significant effect of *CORR* on either *ROAA* or *ROAE*. In the case of High Corruption Countries, the impact of *CORR* on *ROAA* is marginally significant, and for *ROAE*, it is not significant at all.

However, it should be emphasized that for both countries with high levels of corruption and countries with low levels of corruption, the sample size was smaller, which may make it difficult to detect the statistical significance of the parameters of the independent variables. Moreover, in the case of countries with high corruption, the robust standard errors for the *CORR* variable were relatively high, suggesting that the estimation of the variable is less precise. Nonetheless, the parameter for the *CORR* variable was statistically significant for these countries at the 10% significance level (taking into account *ROAA* estimation).

Table 5

Impact of changes in corruption on *ROAA* and *ROAE*: Subsample analysis

Variable	Low Corruption Countries		Moderate Corruption Countries		High Corruption Countries	
	<i>ROAA</i>	<i>ROAE</i>	<i>ROAA</i>	<i>ROAE</i>	<i>ROAA</i>	<i>ROAE</i>
<i>CORR</i>	0.000 (0.031)	-0.032 (0.225)	0.037*** (0.013)	0.180*** (0.051)	0.195* (0.109)	0.672 (1.500)
<i>LogTA</i>	2.140* (1.104)	4.561 (10.432)	0.554* (0.305)	10.528*** (3.766)	0.085 (1.156)	18.552** (8.267)
<i>ETA</i>	0.222*** (0.046)	0.800** (0.302)	0.034 (0.024)	0.554 (0.390)	0.065 (0.045)	0.142 (0.267)
<i>NPL</i>	-0.080** (0.037)	0.376** (0.156)	-0.052** (0.022)	-0.257*** (0.094)	-0.001 (0.011)	-0.084 (0.118)
<i>NIE</i>	-0.395** (0.139)	-3.840*** (1.102)	-0.415*** (0.074)	-1.703*** (0.593)	-0.099 (0.071)	-0.796* (0.442)
<i>NLDF</i>	0.007*** (0.002)	0.068*** (0.015)	-0.000 (0.000)	0.000 (0.005)	0.009 (0.007)	-0.010 (0.046)
<i>GDP</i>	0.012 (0.026)	0.122 (0.133)	0.023** (0.010)	0.120* (0.063)	0.051** (0.023)	0.265 (0.329)
<i>INF</i>	0.065* (0.035)	0.049 (0.541)	0.039*** (0.006)	0.481*** (0.099)	0.061*** (0.002)	0.362*** (0.042)
<i>Constant</i>	-16.514* (7.966)	-32.532 (70.515)	-1.707 (2.160)	-62.807** (28.045)	-0.290 (7.627)	-106.699* (53.615)
Observations	188	188	754	746	202	144
Number of banks	20	20	88	87	42	35
Within R ²	0.64	0.58	0.55	0.37	0.41	0.23
Between R ²	0.21	0.41	0.17	0.42	0.23	0.17
Overall R ²	0.41	0.53	0.27	0.33	0.41	0.05

Note: This table displays the estimates derived from fixed effects models. ***, **, and * denote significance at the 1%, 5%, and 10% thresholds, respectively. Values in parentheses represent robust standard errors.

Source: Authors' own calculations.

Because the *CORR* variable indicates changes in the Corruption Perception Index, in countries with low levels of corruption, its impact on bank profitability may be less noticeable, as there is limited scope for reducing corruption. These are countries with the highest standards of public governance. On the other hand, countries with the highest levels of corruption often face difficult political and economic situations (e.g., an ongoing war), which may strongly hinder anti-corruption efforts. Conversely, countries with average

levels of corruption are often emerging economies actively fighting against corruption. Therefore, the effect of corruption change on the profitability of Islamic banks in these countries may be most pronounced.

Our findings diverge from those reported by Bolarinwa & Soetan (2019), who, in their analysis of 167 conventional banks spanning the period from 2011 to 2017, concluded that corruption significantly influences the profitability of such banks in both high- and low-corruption countries.

It is also worth emphasizing that the impact of control variables differed across the subsamples of banks. Bank size, measured by the logarithm of total assets, had the strongest effect on the *ROAE* of Islamic banks in the High Corruption Countries and Moderate Corruption Countries groups. In contrast, capital adequacy and liquidity exhibited the most significant positive influence on the profitability of banks located in Low Corruption Countries. On the other hand, the *NPL* and *NIE* variables did not have a statistically significant effect on bank profitability in High-Corruption Countries, while they were associated with lower profitability in both the High Corruption Countries and Moderate Corruption Countries groups. A heterogeneous impact of macroeconomic factors across the subsamples was also observed. Both *GDP* and *INF* variables were either statistically insignificant or only marginally significant in Low Corruption Countries. However, in countries with moderate and high levels of corruption, these variables had a statistically significant impact on the dependent variables.

To further assess the robustness and stability of the results, we analyzed two distinct subperiods. The first subperiod, spanning the years 2012-2019, corresponds to a phase of stable economic growth following the global financial crisis. The second subperiod, covering the years 2020-2023, is marked by the COVID-19 crisis and the war in Ukraine. The results of these analyses are presented in Table 6.

Table 6

Impact of changes in corruption on *ROAA* and *ROAE*: Analysis by subperiods

Variable	2012-2019		2020-2023	
	<i>ROAA</i>	<i>ROAE</i>	<i>ROAA</i>	<i>ROAE</i>
<i>CORR</i>	0.039** (0.015)	0.278** (0.107)	0.036* (0.020)	0.290 (0.180)
<i>LogTA</i>	2.678** (1.015)	32.422*** (10.286)	0.399 (1.070)	-9.519 (9.210)
<i>ETA</i>	0.101** (0.048)	0.566*** (0.208)	0.120*** (0.045)	0.625** (0.314)
<i>NPL</i>	-0.044*** (0.016)	-0.136* (0.075)	-0.035** (0.014)	0.113 (0.121)
<i>NIE</i>	-0.214** (0.083)	-1.302** (0.581)	-0.302** (0.136)	-2.179*** (0.570)
<i>NLDF</i>	0.001 (0.002)	0.025 (0.020)	0.003 (0.002)	-0.010** (0.004)
<i>GDP</i>	0.131*** (0.039)	0.860 (0.533)	0.016* (0.009)	0.137** (0.065)
<i>INF</i>	0.064* (0.035)	0.886*** (0.290)	0.053*** (0.011)	0.362*** (0.041)
<i>Constant</i>	-17.611** (6.928)	-212.688*** (71.120)	-2.541 (7.380)	69.719 (60.604)
Observations	765	751	379	367
Number of banks	143	142	122	119
Within R ²	0.32	0.20	0.55	0.47
Between R ²	0.24	0.24	0.03	0.00
Overall R ²	0.21	0.14	0.16	0.01

Note: This table displays the estimates derived from fixed effects models. ***, **, and * denote significance at the 1%, 5%, and 10% thresholds, respectively. Values in parentheses represent robust standard errors.

Source: Authors' own calculations.

The estimated models indicate a heterogeneous impact of corruption dynamics on *ROAA* and *ROAE* across both subperiods. In the 2012-2019 period, the effect of the *CORR* variable on bank profitability is positive and statistically significant at the 5% significance level in both models. Conversely, in the 2020-

2023 period, the impact of corruption changes on profitability was marginal in the case of *ROAA*. This suggests that the effect of corruption dynamics on bank profitability may be contingent on the geopolitical context or the phase of the business cycle.

5. CONCLUSION

Empirical studies on the relationship between corruption and the profitability of Islamic banking are nascent and are based on limited samples. Moreover, they draw conflicting conclusions. In this paper, we find robust evidence that the reduction of corruption levels positively and significantly impacts the profitability of Islamic banks worldwide, as measured by *ROAA* and *ROAE*. This relationship occurs especially in countries with an average level of corruption and is not characteristic of countries with low levels of corruption.

The results of our research are of significant importance to Islamic banks as well as regulators and policy makers. To increase profitability, banks are advised to develop a strong governance framework to effectively prevent and combat corruption. A profitable banking sector enhances resource allocation and economic growth, acts as a buffer against economic shocks, helps stabilize and support the resilience of the financial system, and reduces the likelihood of bank failures. Therefore, regulators and policy makers should establish and enforce robust measures to deter Islamic banks from engaging in corrupt practices, leading to better performance.

We are aware of certain limitations associated with our study. The first is the relatively short time span of the analyzed data. This is due to the availability of data in the ORBIS database. However, it is worth noting that our study still covers a significantly longer period than previous studies on the impact of corruption on Islamic banks. Nevertheless, further analyses that extend the time range of the sample could shed additional light on the phenomenon being studied.

Another limitation is the availability of variables, both dependent and independent. It may be valuable to use alternative measures of Islamic banks' performance in the analyses, as well as other control variables specific to both banks and the countries in which they operate. In future research, it is also worth considering additional control variables that could capture other aspects of the business environment, such as political stability, regulatory quality, and economic freedom. Taking these considerations into account in future research on the impact of corruption on the operations of Islamic banks could certainly provide new and interesting insights into this phenomenon.

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