

Do principal-agent conflicts impact performance and risk-taking behavior of Islamic banks?

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Abstract

This paper presents empirical evidence on the different impacts of principal-agent relationships on risk-taking behavior and performance of Islamic banks, compared to conventional ones, for a sample of 105 banks in 8 Arab countries during the period (2005 – 2009). It distinguishes between two aspects of shareholder structure; namely, ownership concentration and shareholders rights. Empirical evidence showed that principal-agent conflicts were proved prominent in Islamic, as well as conventional banks due to the inverse and statistically significant effect of shareholder rights on risk-taking behavior. Moreover, it was found that principal-agent conflicts are more inherent in conventional banks, with regard to their impact on performance. The results were robust to including different bank specific and country specific variables.

Keywords: Islamic Banks, Conventional Banks, Shareholder Structure, Performance, Risk-Taking, Agency Theory

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1. Introduction

Agency problems take place when the incentives of the agent and the principal are not perfectly aligned and thus conflicts of interest occur. As a result, the agent may be tempted to act in his own interest rather than the principal. Conflicts of interest are almost unavoidable. This type of moral hazard is particularly relevant to the banking industry and arises because the agent's actions are not publicly clear.

According to the literature (John et al. 2008; Laeven and Levine 2009), there are two proxies for the degree to which management is controlled by shareholders, namely ownership concentration (a bank specific variable) and shareholder rights (a country specific variable). The effect of ownership structure and concentration on a bank's performance is an important issue in the literature of finance theory. Ownership concentration may improve performance by decreasing monitoring costs (Shleifer and Vishny 1986). However, it may also work in the opposite direction. There is a possibility that large shareholders use their control rights to achieve private benefits. Ownership structure and concentration are therefore considered important factors that affect bank's health, as well as, its risk-taking behavior. A point worth noting, here, is that shareholders' protection rights may condition the effect of ownership concentration. Better shareholder rights may enable even dispersed shareholders to control management, for example, through calling extraordinary meetings or through the ability to take legal actions against management (La Porta et al. 1998, 1999).

Most research, in this context, is done in the conventional banking setting. However, very little work is known in the context of shareholders conflicts within the scope of corporate governance in Islamic banking. Islamic banking has the same purpose as conventional banking except that it claims to operate in accordance with the rules of Shari'a, known as Fiqh al-Muamalat (Islamic rules on transactions)³. It is argued that agency problems at Islamic financial institutions deserve separate and particular examination for a number of reasons. The first is directly related to the nature of their operations, which distinguishes them from conventional corporations and widens the issue of separation of ownership and control underlying the agency theory (Safieddine 2009). The key sources of distinction arise from the fact that managers of Islamic banks are

³ The basic principle of Islamic banking is the sharing of profit and loss and the prohibition of ribá (interest). Amongst the common Islamic operations used in Islamic banking are profit sharing (Mudharabah), joint venture (Musharakah), cost plus (Murabahah) and leasing (Ijarah) (Zarrokh 2010).

entrusted by shareholders to maximize the value of their investments, under the duty to achieve these objectives in a Sharia-compliant manner (Archer, Ahmed. and Al-Deehani 1998). Furthermore, the contracts created between Islamic banks and investment account holders (IAHs) allow the banks to share in profits and not in risks or losses. It also prevents IAHs from intervening in the management of their funds. Thus, managers of Islamic banks face opportunities to extract personal benefits at the expense of IAHs' interests (Abdel Karim 2001; Abdel Karim and Archer 2002, 2006).

Second, the study of agency dynamics in Islamic financial institutions becomes of increasing importance in light of the high growth rates the industry is experiencing. Islamic banks are operating and providing Islamic banking services in more than 57 countries all over the world (Esam 2013). Furthermore, their assets are estimated to be more than 2 trillion US dollars by end-2014, with an annual growth rate of 17.5% on average, since the beginning of the global financial crisis of 2008 (Hussain et. al. 2015). This is considered among the highest industry growth rates in the world.

Third, efficient risk management in Islamic Banking assumes particular importance, as they try to cope with challenges of globalization. The Islamic financial system can be argued to be an ideal set up in its focus on turning money into real production through different types of contracts that influence the overall economy of any country.

Accordingly, this paper attempts to explore the agency issues in the special context of Islamic banks. This will be done in contrast with conventional banks. It also distinguishes between two aspects of shareholder structure; namely, ownership concentration and shareholders rights.

The paper is designed as follows. Section 2 introduces the theoretical background of the relationship between shareholder structure, on one hand, and risk-taking behavior and bank performance on the other. This is besides highlighting the empirical literature in this context. Section 3 is concerned with new insights for agency theory and governance in the context of Islamic banks, explaining the risks that Islamic banks face and show how they are different from those faced by conventional banks. The data and methodology are presented in section 4. Empirical results and analysis are reported in section 5. Finally, section 6 concludes and offers policy implications.

2. Review of Literature

Our aim in this section is to survey key studies related to the impact of shareholder structure on bank performance, as well as its risk-taking behavior. Two aspects of shareholder structure, namely ownership concentration and shareholder rights, will be considered. Furthermore, studies conducted on Islamic banks, in this context, will be highlighted, whenever available.

2.1 Shareholder Structure and Bank Risk-Taking Behavior

According to agency theory, risk taking behavior is influenced by conflicts between managers and shareholders (Jensen and Meckling 1976). The classical principal-agent theory assumes that managers pursue different objectives and show different risk-taking attitudes than firms' owners. According to Amihud and Levy (1981) or Hirshleifer and Thakor (1992), managers generally avoid risk-taking due to career concerns, because they are not able to diversify their unemployment risk. Unlike managers, dispersed shareholders have larger incentives to behave risk-neutral (Jensen and Meckling 1976; Demsetz and Lehn 1985; Esty 1998), because they manage to diversify their risk by engaging in a large number of projects. It is important, here, to take the difference between a non-financial firm and a banking firm into account. The difference is that banks have depositors, while non-financial firms do not. Consequently, bank shareholders may get together with managers against deposit holders to extend high-risk loans, which may result in a high level of impaired loans and inadequate bank capital (Boyd et al. 1998). Dispersed shareholders have lower incentives to control managers because they have to share the benefits of controlling activities with other shareholders irrespective of their capability to control. Large shareholders, on the other hand, are able to overcome this incentive problem, and therefore attain a higher chance to prevent low risk-taking by managers (Morck et al. 2005; Stultz 2005; Köhler 2012). However, it is more difficult for them to diversify their holdings. In addition, large shareholders may try to protect private benefits in the firms that they control (Morck et al. 2005; Stulz 2005). Hence, the effect of large shareholders on bank risk-taking is ambiguous ex ante.

Moreover, the effect of stronger shareholder rights on risk taking is ambiguous too. Stronger shareholder rights enable even dispersed small shareholders to exercise better control of management (Gropp and Köhler 2010). There are at least two other arguments in the literature that

could justify a positive association between investor protection and corporate risk-taking (John et al. 2008). First, in poor investor protection countries, corporations may have dominant insiders with considerable cash flow rights and large private benefits in the firms they control (e.g., Morck et al. 2005; Stulz 2005). Their high exposure may lead them to be conservative in directing corporate investment. Second, non-equity stakeholders like banks, which often prefer conservative corporate investment, may influence investment policy for their own benefits. Their influence is expectedly higher in low investor-protection countries (e.g., Tirole 2001; Roe 2003; Morck and Nakamura 1999). On the other hand, the literature offers justification for a negative association between investor protection and risk-taking too. First, when investor protection improves, there is less probability of expropriation by managers and consequently less need for concentrated ownership by dominant shareholders (Burkart et al. 2003). Dominant shareholders might have authority and incentives to reduce the discretion enjoyed by managers (Shleifer and Vishny 1986). The reduction in dominant shareholders' presence may result in greater managerial discretion to implement conservative investment policies. This justifies a possible negative relation between investor protection and risk-taking. Second, with poorer investor protection contexts, firms have dominant owners, who may control a pyramid of firms (Morck et al. 2005; Stulz 2005). The dominant owner may instruct lower layer units to take excess risks and pass gains to upper layer units leaving lower level units to bear any potential losses.

Empirically, the relationship between ownership concentration and risk is also ambiguous. Haw et al. (2010) used a broad sample of listed commercial banks in East Asia and Western Europe to investigate the relations among concentrated control, a set of bank operating characteristics, and legal and regulatory regimes. They found that banks with concentrated control exhibit poorer performance, lower cost efficiency, greater return volatility, and higher insolvency risk, relative to widely held ones.

Laeven and Levine (2008) reported that ownership concentration affects risk taking, conditional on shareholder protection rights and the supervisory environment. They compiled new data on individual banks from economies with different regulations, yielding a database of more than 250 privately owned banks across 48 countries. The key finding was that bank risk is generally higher in banks that have large owners with substantial cash flow rights. Consistent with the theory, greater cash flow rights by a large owner are associated with more risk. This finding holds when

conditioning on international differences in bank regulations or when including country fixed effects. Thus, ignoring ownership structure provides an incomplete analysis of bank risk taking.

Pilgorava (2010) used data from a large cross-country sample to examine the relationship between ownership and corporate risk-taking. Besides finding a positive relationship between ownership and risk-taking, it was proved that legal protection plays a role in risk-taking. Countries with better protection of shareholder rights seem to be associated with more risk-taking.

John et al. (2008) used a cross-country panel and a US-only sample to examine the relationship between investor protection and corporate risk-taking. They found that corporate risk-taking and firm growth rates are positively related to the quality of investor protection. Better investor protection lessens the taking of private benefits and consequently the degree of risk-avoidance.

In contrast, Shehzad et al. (2010) found that if ownership concentration increases, the credit risk decreases. They used balance sheet information for around 500 commercial banks from more than 50 countries averaged over 2005–2007. They found that concentrated ownership (proxied by different levels of shareholding) significantly reduces a bank's non-performing loans ratio, as an indicator of bank riskiness. This was conditional on supervisory control and shareholders protection rights. Furthermore, ownership concentration affects the capital adequacy ratio positively conditional on shareholder protection. At low levels of shareholder protection rights and supervisory control, ownership concentration reduces bank riskiness.

Gropp and Köhler (2010) used a large dataset of OECD banks, for which they collected information on ownership concentration. The sample consisted of more than 1,100 banks for 25 OECD countries. They found that shareholders prefer more risk relative to managers irrespective of whether owner control was measured using shareholder rights or ownership concentration. For large shareholders, the ability to control management seemed empirically more important than the risk reducing effect of lack of diversification. The results were consistent with Saunders et al. (1990) and Laeven and Levine (2009) for banks and John et al. (2008) for non-financial firms. The evidence showed that bank managers prefer less risk compared to owners, whether dispersed or concentrated. The results were robust to controlling for differences in regulation and supervision

across countries as suggested by Laeven and Levine (2009), a host of other legal variables as in Caprio et al. (2007) and differences in profits smoothing (Leuz et al. 2003).

Srairi (2013) investigated the impact of ownership structure, measured by two dimensions: nature of owners and ownership concentration, on bank risk, controlling for country and bank specific traits and other bank regulations. He compared risk-taking behavior of conventional and Islamic banks in 10 MENA countries under three types of bank ownership (family-owned, company-owned and state-owned banks) over the period 2005-2009. He found that changes in ownership structure are significant in explaining risk differences between banks. The result showed a negative association between ownership concentration and risk. There were no differences found related to ownership concentration when conventional banks and Islamic banks were analyzed separately. However, Islamic banks had a lower exposure to credit risk than conventional ones.

2.2 Shareholder Structure and Bank Performance

Looking only at risk taking behavior does not convey a clear picture in terms of bank efficiency. Therefore, it is also of interest to understand how banks' performance is related to ownership structure and legal investor protection. In theory, it is not clear how ownership concentration influences bank performance. Monitoring of managerial actions is difficult in a firm with dispersed ownership structure. On the contrary, a concentrated ownership structure, providing effective monitoring, is expected to enhance firm performance (Convergence of Interest Hypothesis). However, another potential conflict of interests arises in firms with concentrated ownership, as the controlling shareholders may engage in activities that expropriate minority shareholders (Shleifer and Vishny 1986; Faccio and Stolin 2006). This creates an agency conflict that results in poor bank performance (Entrenchment Hypothesis). Neutrality hypothesis, however, argues that concentrated ownership is neither associated with better operating performance nor higher firm valuation. According to the Neutrality Hypothesis, ownership structure is an endogenous variable, which determines the maximization of the value of a firm (concentrated/diffused structure), rather than the characteristics of its environment, its market and its own characteristics and operating conditions. So there is separation between ownership and decision. Accordingly, there is no reason to think that a concentrated firm is more efficient than a

firm having diffuse capital (Demsetz 1983; Demsetz and Lehn 1985; Holderness and Sheehan 1988; Himmelberg et al. 1999; Demestz and Villalonga 2001). According to them, each firm is able to define its own optimal ownership structure allowing it to reach its goals and optimal strategies while minimizing the costs of monitoring. Thus, these theoretical hypotheses of monitoring and expropriation have ambiguous predictions regarding the relationship between ownership concentration and performance. However, if shareholder rights are stronger, even dispersed shareholders are able to exercise better control over management. If this reduces the ability of management to extract private benefits, a positive relationship between shareholder rights and bank performance would be expected.

Gorton and Schmid (2000) found that ownership concentration has a positive effect on performance measures by market-to-book ratio and return on assets, in Germany. Claessens et al. (2002) confirmed this effect on market-to-book ratio in Asian firm's performance. Moreover, Zeitun and Tian (2007) found significant and positive effects of ownership concentration on return on assets and return on equity of 59 publicly listed firms in Jordan from 1989 to 2002.

By contrast, Leech and Leahy (1991) found a negative relationship between the ownership concentration and the firm's value and profitability, in the United Kingdom. Lin and Zhang (2009) used a panel of 60 Chinese banks over the 1997–2004. They reported that the “Big Four” commercial banks, which were the more concentrated, less profitable, less efficient, and had worse asset quality than other types of banks. Furthermore, Riewsathirathorn et al. (2011) used data of banks from five Asian countries across five years. Their empirical findings indicated that more concentrated ownership hurt bank performance, as well as increased the operating costs. The results were proved robust even after controlling for bank-specific and country-specific characteristics, such as bank size, loan loss provision, bank deposits, bank capital, country GDP. It was reported that an increase in ownership concentration by one standard deviation is associated with a reduction in ROA by 16.88%.

However, Demsetz and Lehn (1985) found no effect of concentration index on accounting profit rates of 511 American firms. Demestz and Villalonga (2001) confirmed this finding on Tobin's Q. Also, Holderness and Sheehan (1988) reported that accounting return and Tobin's Q are similar for majority owned (the largest shareholder holding more than 50%) and diffusely held firms (the largest shareholder holding less than 20%). They believe there is no correlation between

the company's ownership structure and American company's performance. Hovey et al. (2003) found no effect of concentration on performance of listed Chinese companies. Mc Mahon (2007) confirmed this finding on a sample of Australian firms. He reported that there is no statistically significant relationship between the proportions of equity held by small and medium-sized enterprises (SME) managers and financial performance. Finally, Zouari and Taktak (2012) empirically investigated the relation between ownership structure and performance in a panel data sample of 53 Islamic Banks scattered over 15 countries for a five-year period (2005 to 2009). Using return on assets (ROA) and return on equity (ROE) as performance measures, empirical evidence showed that there was no obvious correlation between ownership concentration and Islamic bank performance.

Burkart et al. (1997), however, described the trade-off between the benefits of monitoring and the ones of managerial discretion. In other words, too much monitoring reduces managers' initiative to seek firm-specific investments, which is unfavorable to firm performance. Their model for the role of large shareholders challenged the view that monitoring is purely beneficial. They proposed the ownership structure as a commitment device to delegate a certain degree of control to management.

The conflicting results of the effect of ownership structure on a bank's health might signal the possibility of existence of a non linear relation between them. In accordance with this view, Miguel et al (2004) predicted and found empirical evidence of a quadratic relationship, in which performance (firm value) increased at low levels of ownership concentration (due to the monitoring effect), and decreased at high levels (as a result of the expropriation effect). This result supports theories which suggest a non linear relationship between ownership concentration and firm performance.

However, relying also on the theoretical argument that expropriation in general is costly (Burkart et al. 1998), expropriation is expected to be less severe in a high concentrated ownership structure. This makes it possible a cubic relationship between ownership concentration and performance. This proposition was empirically verified in the study conducted by Magalhaes et al. (2010). The study empirically investigated the effect of ownership concentration on the risk and performance of commercial banks, controlling for shareholders protection laws, bank regulations, and other country and bank specific traits. They used a sample comprising 818 banks around 40

countries, for the period from 2000 to 2005. Their analyses showed that ownership concentration is more important to explain performance than risk taking. Their main finding was the first empirical evidence of a cubic relationship between ownership concentration and bank performance. Such evidence was supportive of the theoretical hypotheses of effective monitoring at low levels of ownership concentration, expropriation or loss of managerial discretion at moderate ownership concentration, and high costs of expropriation at high levels of ownership concentration.

Al-Baidhani (2013) conducted a study that investigated the relationship between, and consequently the effect of, internal corporate governance (categorized as ownership structure, board structure, audit function, and other respective variables such as bank size, age, and type) on bank's profitability, measured by ROE, ROA, and Profit Margin. The study was conducted on a sample of top fifty conventional and Islamic banks from Yemen and the GCC countries. These bank performance "profitability measures" were regressed on twenty two corporate governance predicting variables, classified into the aforementioned categories. It was found that there were three significant corporate governance independent variables, namely Ownership Concentration, Age, and Board Committees. Age and Board Committees had a positive and significant effect, while Ownership Concentration had a negative and significant effect on bank's profitability, measured by the dependent variable Profit Margin. No distinction, between the two types of banks, was made in the analysis.

Performance is also argued to increase in the presence of strong shareholder protection laws aimed to avoid expropriation by controlling owners. Therefore, the effectiveness of shareholder protection laws affects the relationship between ownership structure and performance. A point worth noting, here, is that the unique characteristics of banks may interfere in such relationship, as argued by Caprio et al. (2007). This could be attributed to several reasons. First, investor protection laws alone may not provide effective protection to small shareholders, in light of the higher opacity and complexity of banks (Morgan 2002). Second, heavy regulations imposed on banks may substitute for, or interfere with investor protection laws, or make these latter unnecessary. As a consequence, it is not clear whether we should expect a positive impact of investor protection laws on banks' performance and valuation or not, as in the case of non-financial firms. Third, the emergence of bank regulations targeting the reduction of expropriation by insiders

(Caprio and Levine 2002) should enhance bank performance and valuation. Fourth, the presence of deposit insurance aimed to protect depositors, through the reduction of excessive risk taking by banks, may cause inefficiencies, in terms of performance and valuation.

La Porta et al. (2002) presented a model of the effects of legal protection by a controlling shareholder on the firm performance. They tested this model using a sample of 539 large firms from 27 wealthy economies. Their results confirmed the general prediction of the theory, namely that poor shareholder protection is associated with lower performance. Also, higher cash-flow ownership by the controlling shareholder improves performance, especially in countries with poor investor-protection. The results were also consistent with the findings of Claessens et al. (2000) on a larger sample of companies from Asia. This evidence indirectly supported the importance of expropriation of minority shareholders by controlling shareholders in many countries and for the role of law in limiting such expropriation.

Li et al. (2012) empirically examined the impact of investor protection on financial performance of Islamic banks based on an unbalanced panel data collected from 91 Islamic banks and financial institutions worldwide across 1991-2010. Results showed that stronger investor protection results in better financial performance in the Islamic banking and financial institutions.

3. New Insights for Agency Theory and Governance in the Context of Islamic Banks

From an idealistic point of view, principal-agent problems suffered in the corporate world should not exist in an Islamic environment. In an Islamic economic system, human beings are argued to be trusted to manage available resources under adequate care, with full knowledge that all resources in the world belong to God. Human beings are required to follow two main aspects namely, “religious beliefs and means of sustenance or material resources” (Ayub 2007). However, in trying to maximize the value of shareholders' investment, Islamic financial institutions are exposed to risks. The difference between Islamic and conventional banks is more obvious in this area of risks and risk management. The different nature of the relationship with customers and dissimilar kinds of financing and investing activities entail unique risks, besides the generic ones, faced by the Islamic banks. The common risks faced both by Islamic and conventional banks are

credit risk, market risk, operational risk and liquidity risk. However, there are unique risks related to Islamic banks only, as depicted below (Helmy 2012).

- **Shariah non-compliance risk**, which is the risk arising from the failure to comply with the Shariah rules and principles.
- **Rate of return risk**, which is the potential impact on the returns caused by unexpected change in the rate of returns.
- **Displaced Commercial risk**, which is the risk of the bank facing commercial pressure to pay returns that exceed the rate that has been earned on its assets financed by IAHs. The bank foregoes part or its share of profit in order to save its fund providers and deter them from withdrawing their funds.
- **Equity Investment risk**, it is the risk arising from entering into a partnership for the purpose of undertaking or participating in a particular financing or general business activity as described in the contract, and in which the provider of finance shares in the business risk. This risk is relevant under Mudharabah and Musharakah contracts.
- **Inventory risk**, the risk arising from holding items in inventory either for resale under a Murabahah' contract, or for leasing under the ijarah contract.

In Islamic finance corporate governance, the agency problem is of primary concern. However, some twists to the regular agency problems could be signaled in their context. The theoretical structure of Islamic Financial Institutions (IFIs) necessitates sharing profits and losses on both their asset and liability sides. This poses a greater need for transparency to its IAHs (Iqbal et al. 2007)⁴. Another twist to this agency problem is attributed to the current practices of Islamic banks pertaining to rate of return smoothing. This smoothing creates another kind of agency problem for the equity holders of banks, and also leads to weakening of market discipline for the managers. A further problem, which is recently being underlined by critics, is the conflict of interest arising from relations of top management and Shariah boards. As in many IFIs, Shariah scholars are being appointed by shareholders. Accordingly, some Shariah scholars may feel

⁴ They further explain it as follows; “*This is due to the agency problem faced by the investment account holders when they share in profit and loss of the bank, which themselves are the consequence of trade and investment decisions of the managers and shareholders of the banking firm. Bank shareholders (or their appointed management), as agent for investment account holders, exercise control over investment decisions. Unless their interests and risk profile is aligned with that of the depositors, agency problem will remain*” p.7.

pressure and threat of losing their position in the board, and hence approve products as Shariah compliant while they are actually not. Consequently, this approval could lead to enormous costs including litigations, loss of revenue and, more importantly, decline in the IFI's reputational image. This particular problem is more highlighted by the fact that in majority of IFIs, Shariah boards are not subjected to disclosure rules. In order to cope with this problem there is a need for more transparency and disclosure in Shariah boards.

According to Iqbal and Mirakhor (2004), the governance model in the Islamic economic system is a stakeholder-oriented model whereby governance structure and process, at both the system and firm levels, protect the rights of all stakeholders who are exposed to any risk as a result of the firm's activities (Iqbal and Molyneux 2005). However, Islamic economists and scholars are divided into three groups concerned with which corporate governance approach is best for the future growth of IFIs. The first group is proponents of the European model. They argue that the essence of Islamic corporate governance has a wide commission, with obligations extending beyond shareholders and including financiers, employees and customers (Malekian and Daryaei 2010). The second group is proponents of the Anglo-Saxon approach arguing that the economic organization and business and commercial practices in the majority of Muslim countries are inherited western colonial powers practicing the Anglo-Saxon approach of corporate governance. This implies that in actual practice, many Islamic corporations adopt the Anglo-Saxon approach (Hasan 2008). They argue that it is for the best of IFIs to work on the adaptation of this approach which also makes it easier for them to enter the western financial world and compete with the existing conventional system. The third group is opponents of both approaches. They argue that the IFIs' structures are completely different from those in conventional corporations. The depositors in IFIs are also stakeholders. However, they do not generally get much attention in either the Anglo-Saxon or the European approach. Although in IFIs, it is the depositors rather than shareholders who provide a large proportion of funds (Chapra and Ahmed 2002). Therefore, the third group promotes the idea of a completely different approach which could be consistent with the IFIs' structure. Nonetheless, the problem with the third group is that they have not yet managed to create a solid model of corporate governance. In the context of Islamic corporate governance, a few studies have been carried out on particularly Islamic financial institutions to come up with alternative models of corporate governance. These studies seem to suggest that Islamic corporation

may adopt a totally different model of corporate governance or a modified version of the Stakeholder-oriented model as an alternative for its corporate governance framework (Hasan 2008).

4. Data and Methodology

4.1 Data

This paper examines whether different performance and risk-taking behaviors of Islamic banks compared to conventional ones can be explained by principal-agent relationships. We use a dataset on 105 banks (conventional and Islamic) in 8 Arab countries⁵ for the period from 2005 to 2009 to test our hypothesis⁶. We also differentiate between two aspects of shareholder structure - to proxy the principal-agent relationship- namely, ownership concentration and shareholders rights. The source of financial data is the “Directory of Arab Banks and Financial Institutions” (2010) issued by the Union of Arab Banks⁷. This directory incorporates comprehensive and accurate information cards for Arab banks and financial institutions. Each bank’s card contains information related to its fields of work, date of establishment, shareholders, services and products, number of domestic and foreign branches, names of the board of directors and senior executive management, subsidiaries and affiliate companies, capital, financial indicators for the previous five years and its various credit rankings and others, as well as any other related information. The data on the banks’ ownership concentration and its financial indicators were collected by hand from the banks’ cards in this directory. The exhausting task of collecting this data constitutes a large part of the research and thus considered an essential contribution of the study. Table 1 shows the regional distribution of banks, while Table 2 shows the distribution of banks by specialization.

⁵ The Arab countries included in this dataset are: Egypt, Jordan, Sudan, United Arab of Emirates, Bahrain, Saudi Arabia, Kuwait, and Qatar.

⁶ The reason behind the selection of these particular countries and period of time is data availability, as we strived to use the most recent data available and also we chose the countries and banks where number of missing observations is minimized.

⁷ Although there is a new version of this directory (2016), but we could not depend on it, as it didn’t include the data for all our variables of interest. That is why we relied on the older version of the directory (2010) where the most recent data included is for year 2009.

As for the country-specific variables, such as governance level, data were collected from the World Bank Governance indicators database, and data on shareholder rights were collected from Doing Business Data (2014) issued by International Financial Corporation (IFC) and World Bank.

4.2 Model Specifications and Main Variables

To investigate the relationship between shareholder structure, risk and performance, this study adopts the model of Gropp and Köhler (2010). The model consists of two equations, each will be estimated separately, one for bank risk and the other for bank performance as dependent variables, using the sample of 105 conventional and Islamic banks in the 8 selected Arab countries.

In the first equation bank riskiness (RISK) is measured by the average of capital adequacy ratio (CAR) during the period (2005 – 2009). The capital adequacy ratio is a measure of a bank's capital. It is measured as a percentage of a bank's risk weighted credit exposures. CAR also plays a key role in the international bank solvency standards of the Basel Committee of the Bank for International Settlements (BIS) (Shehzad et al. 2010). In the second equation bank performance is measured by the average return on equity (\overline{ROE}) of the bank during the period from 2005 to 2009⁸. It indicates how much profit has been generated by the bank management on the shareholders' funds invested in the company (Bashir and Hassan 2004). ROE also indicates how efficient the shareholders' investments are used by the bank management (Hassoune 2002).

The two equations contain a set of control variables which include, for example, a dummy variable to control for foreign ownership (FOREIGN), which takes the value 1 if foreign individuals or institutions own more than 50% of the bank shares and zero otherwise. In addition, dummy variables to account for bank type are included. For instance, a dummy variable (COMMERCIAL) is included, which takes the value of 1 if the bank is a commercial or universal one and zero otherwise. Moreover, in an attempt to minimize specification bias and to isolate the effects of bank characteristics on risk and performance, not captured by the ownership and bank type variables, it was necessary to include other variables to explain bank performance, which were commonly-used in the literature. We included the natural logarithm of average bank's total assets during the period (2005 – 2009) to measure its size (SIZE). Due to the loss of control by top

⁸ Return on Equity (ROE) is calculated by dividing the net income after tax by the shareholders' equity.

managers, larger firms are assumed to be less efficient (Himmelberg et al. 1999). In fact, it was stated by Lang and Stulz (1994) that the firm value decreases, as it becomes larger and more diversified. On the contrary, bank's size could affect performance positively; since large firms could be more efficient when they have the ability to diversify risk and when they exploit economies of scale (Ghosh 1998). Moreover, some other bank-specific variables can be used, such as average loan-deposit ratio for robustness check. In addition, country-specific variables, such as regulatory quality, rule of law, control of corruption, and degree of bank market power could be useful.

The two explanatory variables of interest that are included in both equations and reflect the shareholder structure are STAKE and RIGHTS. STAKE is defined as the percentage of shares held by the largest shareholder, as a measure of the level of ownership concentration in the bank in year 2009, since ownership patterns were stable over the time period of the study. RIGHTS measures the level of investor protection at the country level. We use average of the strength of investor protection index issued by the International Finance Corporation (IFC) of the World Bank during the period (2005 – 2009). This index is calculated as an average of three indices, namely the extent of disclosure index, the extent of director liability index and the ease of shareholder suits index. The index ranges from 0 to 10, with higher values indicating more investor protection. It measures the strength of minority shareholder protections in opposition to the misuse of corporate assets by directors for personal gain. Accordingly, it is considered a proxy for the degree to which managers act in the interest of bank owners. In addition, interaction terms between the dummy variable (ISLAMIC) - which takes the value of 1 for Islamic banks and zero otherwise - on one hand, and STAKE and RIGHTS, on the other, are also included in the model, to account for the distinction between Islamic and conventional banks concerning the effect of ownership structure on risk taking and performance .

According to theory, a positive correlation between shareholder concentration and risk is assumed to prevail for various reasons, including career concerns (Amihud and Lev 1981), private benefits of control (Demsetz and Lehn 1985; Kane, 1985) and non-diversifiable human capital risk (Jensen and Meckling 1976). On the contrary, the shareholders' ability to diversify risk could matter, which could make large shareholders not interested in more risk if they could not fully diversify (Stultz 2005). Eventually, which of these effects dominates is considered an empirical

issue (John et al. 2008). On the other hand, there is no clear a priori relationship between ownership concentration and bank performance. The relationship between STAKE and \overline{ROE} is expected to be positive, if large shareholders are more able and have larger incentives to control managers compared to scattered shareholders, since private benefits to management and agency costs are reduced in this case (Shleifer and Vishny 1986). Yet, large shareholders could as well have the incentive to extract benefits at the cost of other minority shareholders, which would negatively affect the long term performance of the bank (Shleifer and Vishny 1997).

Also, a positive relationship between RIGHTS, on one hand, and risk and bank performance (\overline{ROE}), on the other, is expected. If shareholders support more risk-taking to raise the return on their investment, a positive relationship between RIGHTS and RISK is expected to prevail. Specifically, minority shareholders could also have an incentive to follow a more risk-taking behavior, provided that they have the ability to fully diversify firm-specific risk (Shleifer and Vishny 1997). Likewise, if shareholder rights are stronger, even minority shareholders are able to exercise better control over management; this may reduce the ability of management to extract private benefits. Thus, a positive relationship between RIGHTS and \overline{ROE} is expected (Gropp and Köhler 2010).

Since management and ownership structures are highly stable over time and are not usually affected by annual changes of performance (Zhou 2001; Caprio et al. 2007), a panel estimator, with first differences or fixed effects, could result in spurious correlation between ownership structure and performance (Zhou 2001). Besides, assuming rational managers who maximize expected long-term self-interest, it is not apparent whether minor annual changes in ownership are reflecting the significant changes in managerial incentives that are expected to result in substantive annual changes in performance. Since managers stay usually in a bank for several years, their incentives hinge on the relation between their anticipated long-term self interest and the bank's expected long-term performance. Thus, the relation between ownership structure, risk and performance is likely to be a cross-sectional one. Hence, we estimate the two models of interest using ordinary least squares (OLS) method and cross sectional data as an average for the period (2005 – 2009). Descriptive statistics are reported in the appendix [Table 3].

On the other hand, according to some literature (John et al. 2008), it can also be argued that there is an indirect effect of RIGHTS on risk taking which works through ownership concentration.

As in countries with high protection of shareholders rights, there would be no benefits for having dominant shareholders, and thus managers would have more discretionary power and would follow a less risk-taking behavior. Accordingly, in all regressions we control for ownership concentration when examining the effect of shareholder rights on risk. Furthermore, we will test for the endogeneity of ownership concentration using Wu-Hausman F test, and Durbin-Wu-Hausman chi-sq test, to decide whether the estimates from ordinary least squares (OLS) and instrumental variable (IV) estimations are different.

5. Empirical Results and Analysis

5.1 Risk-Taking Behavior

Table 4 in the appendix displays six empirical models designed to test the impact of Principal-Agent relationships on risk-taking behavior of Islamic banks compared to conventional ones. RISK is proxied by the average capital adequacy ratio (CAR) during the period (2005 - 2009). Provided that, capital adequacy ratio is a key measure of “safety and soundness” for banks and depository institutions, since it serves as a buffer or cushion for absorbing losses. Higher values of CAR imply less risk-taking behavior by banks. We start with a baseline model (model 1) regressing RISK on STAKE and RIGHTS, as well as their interaction terms with the dummy variable, ISLAMIC, using OLS. No additional control variables are included in this model. The results of this simple model are reported in the first column of Table 4. We find that all explanatory variables turn to be insignificant except the constant term which is strongly significant and positive at all significant levels.

In model 2, bank type dummy variables are added. The variable FOREIGN accounts for foreign ownership and the variable COMMERCIAL distinguishes between commercial and investment banks. Similar to the baseline model, we find that all variables remain to be insignificant at all significance level, except the constant term as in model 1.

In model 3, another variable is added to control for bank’s characteristics, namely the natural logarithm of total bank assets as a proxy for bank size. The results show an insignificant association between ownership concentration (STAKE) and risk. But, RIGHTS shows a positive and significant impact on CAR, implying that banks situated in countries with a higher level of investor protection, tends to follow less risk-taking behavior. This supports the idea of a negative

association between investor protection and risk-taking. In addition, the model shows no difference between Islamic and conventional banks concerning the impact of STAKE and RIGHTS on risk-taking behavior. Also, bank's type variables remain to be insignificant at all significance levels. On the other hand, the model shows that bank risk increases with SIZE, since the coefficient of SIZE is negative and significant at 5% significance level. This means that as bank size increases, CAR decreases, implying more risk-taking behavior by banks. This is consistent with the notion of "Too-big-to-fail" (TBTF), which is a situation where governments have to assist a failing financial institution, since its failure may be so detrimental for the economy. When firms are perceived TBTF, they could have a tendency to follow an extreme risk-taking behavior to profit in the short term (Bhagat et al. 2012). Besides, large banks could be more inclined to engage in more risky transactions in the international financial market due to the large fixed costs required to work globally (Chen and Mazumdar 1997). Again, the constant term remains strongly significant in this model.

In models 4 to 6, and following Beltratti and Stulz (2009) and Caprio et al. (2007), we include three variables that account for the overall institutional environment, to test whether our shareholder rights variable proxies for some other country variables. The first variable is (RULE_OF_LAW) index, which measures to the extent of confidence that agents in a country have in property rights and contract enforcement. The second one (CORRUPTION_CONTROL) represents the perception of the degree to which public power is used for private gain, including both grand and petty forms of corruption. Furthermore, the REGULATORY_QUALITY index is used to proxy the overall quality of the regulatory environment. Given that these indices are highly correlated, each index is included separately to our model. In all these models, governance indicators do not have any significant impact on risk-taking behavior of banks. As for the rest of the results, the signs and magnitude of coefficients remain almost similar to that of model 3.

5.2 Bank Performance

Table 5 displays the results of another six empirical models with the same explanatory variables as models in Table 4, but designed to assess the impact of ownership concentration and shareholder rights on bank performance in Islamic and conventional banks. So, \overline{ROE} is used as the dependent variable in this case, In the baseline model (model 1), we find that STAKE and its

interaction term with ISLAMIC dummy variable are not significantly related to average ROE, while RIGHTS has a positive significant impact on bank performance at 10% significance level. The positive coefficient for RIGHTS indicates that bank performance is higher if banks are situated in countries with a higher level of investor protection. On the other hand, this positive effect of RIGHTS on bank performance does not differ among conventional and Islamic banks, since the interaction term of RIGHTS with ISLAMIC dummy is not statistically significant at all significance levels.

In model 2, after adding bank type variables, and similar to the baseline model, we find that ownership concentration has no significant effect on either Islamic or conventional banks' performance. Meanwhile, strength of protecting investor rights remains to have a positive significant impact on average bank performance at 10% significant level. A one point increase in the index of protecting investor rights increases \overline{ROE} by about 3.9 percentage points. This applies in both conventional and Islamic banks, as the interaction term of RIGHTS with ISLAMIC dummy remains also statistically insignificant. As for the two control variables added (FOREIGN, COMMERCIAL), they showed to be with no significant impact on bank performance.

Model 3 - which controls for bank's size – shows that SIZE has a significant and positive effect on \overline{ROE} at 5% significance level. This signifies that larger banks outperform smaller ones. It is expected that larger banks better perform than smaller ones due to greater market power or economies of scale and scope (Berger et al. 2000). Bank type variables remain to be insignificant in this model. In contrast to model 2, the variable RIGHTS turned to be insignificant. But the interaction term with (ISLAMIC) dummy remain insignificant as in previous estimated models. On the other hand, ownership concentration has a negative significant impact on conventional banks' performance (at 10% significance level). An increase in the amount of shares, held by largest shareholder, by one percentage point leads to a decline in average ROE of a conventional bank by about 0.09 percentage point. While in Islamic banks, there is a significant positive relationship between ownership concentration and bank performance, as the coefficient of interaction term of STAKE with ISLAMIC dummy is positive and statistically significant at 10% significance level, with a higher value than the coefficient of STAKE variable. Hence, it can be concluded that principal-agent problems are less evident in Islamic banks, where large shareholders have greater ability to control managers than minority shareholders. This results in

less agency costs and less private benefits to management, which in turn leads to better performance.

Furthermore, in models 4 to 6, in Table 5, we control for the overall institutional environment in the country, by incorporating three governance indicators (rule of law, corruption control, and regulatory quality), one at a time as an explanatory variable. The results of all these models resemble that of model 3, where bank type variables are insignificant; bank size affects performance positively; protecting investor rights has no significant impact on performance; and ownership concentration affects performance negatively in conventional banks and affects it positively in Islamic ones.

5.3 Robustness Checks and Sensitivity Tests⁹

Several checks have been performed to examine the robustness of the major findings of the analysis. First, the average return-on-assets (ROA) is used instead of average ROE to see whether our results are robust to the use of the dependent variable. The results were the same as in the case of average ROE. STAKE had a negative significant impact on performance of conventional banks and a positive one on Islamic Banks performance. RIGHTS, on the other hand, had a positive significant impact on performance of both Islamic and conventional banks, in baseline model, as well as when controlling for bank type.

Second, we incorporated different bank-specific variables in all models of risk-taking behavior and bank performance. These variables include: the dummy variable (STATE) that takes the value 1 if 50% of the bank's shares or more is owned by the government or/and public institutions. Also, a dummy variable (INVESTMENT) was incorporated in the models. It takes the value of 1 if the bank is an investment or universal bank and zero otherwise. Additionally, loan-deposit ratio was used an explanatory variable to control for bank characteristics. Results remain unchanged, which prove the robustness of the results. Finally, we tested whether the results for STAKE and RIGHTS are robust to controlling for the banking market's structure in the country where the bank is situated. Thus, we used Lerner Index (MARKET_POWER) as a proxy for bank

⁹ All results of robustness checks and sensitivity tests were not reported for the sake of brevity, but the results are available from the authors upon request.

market power¹⁰, as an explanatory variable. The results stay similar to our initial results concerning signs and significance level.

Some studies (e.g., Demsetz and Lehn 1985; Gugler and Weigand 2003) had suggested that ownership concentration is endogenous as it is influenced by the bank's level of risk and performance. If this was true, reported coefficient estimates in Tables 4 and 5 might be biased, which violates the consistency of the OLS estimator. We control for this endogeneity problem, by using instrumental variables that are correlated with ownership structure and uncorrelated with risk-taking and performance. In this context, two instrumental variables for ownership concentration (STAKE) were employed. The first instrument is the bank age. According to Nguyen (2011), the ownership concentration changes as the bank evolves through its life cycle. The second instrument used is a dummy variable indicating whether a bank is located in a country that adopts only a few aspects of Sharia law or apply the entire code. This variable takes the value of 1 if the country formally equates national law with Sharia and zero if the Sharia is not the sole or dominating aspect of the justice system. It is supposed that if investor rights are better protected in countries applying the entire Sharia law, ownership should be more dispersed in those countries than in countries partially adopting Sharia law¹¹.

Wu-Hausman F test and Durbin-Wu-Hausman chi-sq test were performed for instrumental variable estimates using 2SLS regression against the corresponding OLS estimates to determine whether the ownership concentration variable (STAKE) is endogenous or not. Furthermore, since we have used two exogenous instruments for endogenous ownership variable, we used the Sargan

¹⁰ Lerner (1934) Index is the most commonly and well-known tool used for the estimation of bank market power. The main reasons for its popularity are its straightforward interpretation, its simplicity in calculation, and the fact that it does not impose strict data requirements. The Lerner index shows the ability of an individual bank to charge a price above marginal cost. It is defined as: $Lerner_i = \frac{P_i - mci}{P_i}$, where P_i and mci are firm i 's price and marginal cost respectively. The Lerner index ranges between 0 and 1, with zero corresponding to perfect competition and larger values reflecting greater market power (less competition) (Clerides et al. 2013).

¹¹ Following Gropp and Köhler (2010), we wanted to use a dummy variable indicating whether a bank is located in civil law or common law countries as an instrument for ownership concentration, because it proved to be a valid instrument. But we faced the problem that the legal systems of Arab countries, included in the sample, are classified into more complex categories than simply common or civil law (Muslim monotype system; mixed systems of Muslim law and civil law; mixed system of Muslim law and customary law; mixed systems of Muslim law and common law; mixed systems of Muslim law, civil law and customary law; and mixed systems of Muslim law, common law, civil law and customary law) (JuriGlobe 2014). However, due to limited number of observations, we couldn't use more than two instruments for ownership concentration, and we only used the variables of bank's age and Sharia law.

test and the Basman test (test of overidentifying restrictions) to ensure that our instrumental variables are exogenous and not redundant. Results of the over identification tests of excluded instruments (Sargan and Basman tests) do not reject the hypothesis that the excluded instruments are uncorrelated with the error term and support the assumption that the instruments are valid. The two Hausman tests of endogeneity confirmed that there is no systematic difference between IV and OLS estimates. This suggests that there is no endogeneity bias in the OLS estimates (i.e. STAKE is not endogenous), and hence no need to instrument. Accordingly, we stick to the OLS estimates, since they are more efficient compared to IV estimates.

6. Conclusion and Policy Implications

In light of the rapid growth of Islamic banks around the world, many issues were raised regarding the performance of these banks and their impact on financial and economic stability. This paper presents empirical evidence on the different effects of principal-agent relationships on risk-taking behavior and performance in Islamic banks compared to conventional ones in 8 Arab countries. We examine the effect of ownership structure, represented by ownership concentration and protection of investor rights in the country, on the bank's risk-taking behavior on one hand, and on its performance on the other, for a sample of 105 banks during the period (2005 – 2009). In general, we find that changes in shareholder structure are significant in explaining risk-taking behavior and performance of banks. Indeed, the results highlight the difference between conventional and Islamic banks with regard to the effect of ownership concentration on bank performance. Conventional banks with concentrated ownership have lower performance compared to a better performance in Islamic banks. Accordingly, Islamic banks follow the convergence of interest hypothesis, where effective monitoring of concentrated ownership structures result in enhancing firm performance. Conventional banks, on the other hand, follow the entrenchment hypothesis. Controlling shareholders engage in activities that expropriate minority shareholders, thus creating agency conflicts resulting in poor performance. Therefore, it could be concluded that principal-agent conflicts are more inherent in conventional banks, with regard to their impact on performance.

Our findings also reveal that banks situated in countries with stronger shareholder rights, are likely to adopt less-risk taking behavior, with no significant difference between Islamic and

conventional banks. This result could be attributed to the indirect effect of shareholder rights on risk taking that works through ownership concentration. In countries with strong shareholder's rights protection, there are fewer benefits to having dominant shareholders. This could have the consequence that management has more discretionary power and ultimately result in less risk taking. In this regard, principal-agent conflicts are prominent in Islamic, as well as conventional banks due to the inverse and statistically significant effect of shareholder rights on risk-taking behavior.

These results are robust to including different bank specific and country specific variables. Thus, it can be concluded that aspects of governance are important determinants of the performance of Islamic banks. In accordance to Chapra and Ahmed (2002), as well as, Safieddine (2009), it could be concluded that the governance mechanisms that aim at safeguarding the interests of shareholders in conventional corporate structures might not be sufficient in the setting of IFIs. The conventional governance practices that preserve both the foundations of Islamic finance and the rights of all investors, including investment account holders, need to be further developed by regulators and adopted by Islamic banks. Accordingly, this would result in favorable implications on the performance and development of this specific industry. It is worth mentioning that the relatively small sample size - due to limited data availability - could be affecting the findings of this study. Therefore, these results could change when using a larger dataset. However, it can still be considered a credible starting point for future research in this area.

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Appendix

Table (1): Regional Distribution of Banks used in the Sample

Country	Number of conventional banks	Number of Islamic banks	Total
Egypt	20	4	24
Sudan	6	13	19
Jordan	13	2	15
United Arab of Emirates	9	4	13
Bahrain	4	7	11
Saudi Arabia	5	3	8
Qatar	5	3	8
Kuwait	5	2	7
Total	67	38	105

Table (2): Distribution of Banks used in the Sample by Specialization

Country	Non-Islamic Bank	Islamic Bank	Total
Commercial Bank	37	9	46
Investment Bank	5	1	6
Universal Bank	20	2	22
Specialized Bank	5	-	5
Pure Islamic	-	26	26
Total	67	38	105

Table (3): Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
RISK	88	22.55898	14.20472	1.76	103.58
<u>ROE</u>	103	12.24126	16.56419	-98.92	42.89
STAKE	105	48.82276	29.37612	2	100
SIZE	103	7.875784	1.687252	4.312542	11.42038
LOAN_DEPOSIT	99	115.4425	190.5512	1.23	1705.31
ISLAMIC	105	0.3619048	0.4828563	0	1
STATE	105	0.1428571	0.3516054	0	1
FOREGIN	105	0.2857143	0.4539206	0	1
INVESTMENT	105	0.2666667	0.4443376	0	1
COMMERCIAL	105	0.647619	0.4800031	0	1
RIGHTS	103	3.914563	0.8575395	3	5.95
RULE_of_LAW	103	0.0046602	0.717356	-1.39	0.76
CORRUPTION_CONTROL	103	-0.0601942	0.816517	-1.33	1.04
REGULATORY_QUALITY	103	-0.0429126	0.696623	-1.32	0.74
MARKET_POWER	103	0.3001942	0.1162737	0.15	0.48

Note: all variables are measured as an average for the period (2005 – 2009), except STAKE and dummy variables as they didn't change over the time period of the study, so we use the data for year 2009.

Table (4): Estimation Results for OLS Models of Bank Risk-Taking

Dependent Variable: RISK						
<i>Explanatory Variables</i>	(1)	(2)	(3)	(4)	(5)	(6)
STAKE	-0.0140 (0.0631)	-0.0308 (0.0584)	-0.0207 (0.0620)	-0.0251 (0.0597)	-0.0244 (0.0643)	-0.0255 (0.0611)
ISLAMIC*STAKE	-0.0422 (0.0902)	-0.0264 (0.0828)	-0.0220 (0.0781)	-0.0153 (0.0777)	-0.0174 (0.0808)	-0.0115 (0.0796)
RIGHTS	-1.2237 (2.1015)	-0.5225 (1.8827)	4.9599** (2.4290)	5.4564** (2.5459)	5.1724** (2.4124)	5.4196** (2.5721)
ISLAMIC*RIGHTS	1.2407 (1.3158)	0.8310 (1.6237)	-0.0327 (1.3766)	-0.3157 (1.3430)	-0.1295 (1.3270)	-0.2614 (1.3448)
FOREGIN		3.4964 (3.8588)	4.6904 (3.5578)	4.5106 (3.4357)	4.4494 (3.4419)	4.5620 (3.4642)
COMMERCIAL		-2.0926 (4.8828)	1.2840 (4.3504)	0.9011 (4.1154)	1.2819 (4.3586)	1.1473 (4.2462)
SIZE			-4.5950** (1.7574)	-4.0130** (1.6576)	-4.4249** (1.8092)	-4.2000** (1.6560)
RULE_of_LAW				-2.5800 (2.9773)		
CORRUPTION_CONTROL					-0.8385 (2.1949)	
REGULATORY_QUALITY						-1.9414 (2.7779)
Constant	27.0716*** (6.5011)	25.8898*** (6.8191)	38.4021*** (8.5397)	32.7223*** (9.6447)	36.5027*** (9.8841)	33.9281*** (9.5516)
<i>Obs.</i>	88	88	88	88	88	88
<i>R</i> ²	0.0159	0.0306	0.2196	0.2299	0.2211	0.2250

Notes: All models are estimated using OLS. Robust standard errors in parentheses, and p* < 0.10, p** < 0.05, p*** < 0.01.

We have tested for multicollinearity using Variance Inflation Factor (VIF) in all models, and no multicollinearity was detected.

Table (5): Estimation Results for OLS Models of Bank Performance

Dependent Variable: \overline{ROE}						
<i>Explanatory Variables</i>	(1)	(2)	(3)	(4)	(5)	(6)
STAKE	-0.0643 (0.0524)	-0.0824 (0.0497)	-0.0876* (0.0490)	-0.0876* (0.0493)	-0.0859* (0.0499)	-0.0883* (0.0494)
ISLAMIC*STAKE	0.0842 (0.0669)	0.1125 (0.0696)	0.1186* (0.0649)	0.1192* (0.0651)	0.1171* (0.0637)	0.1227* (0.0638)
RIGHTS	2.9392* (1.5747)	3.8923* (2.0982)	1.4839 (1.8474)	1.6090 (1.7421)	1.4187 (1.7134)	1.7259 (1.6447)
ISLAMIC*RIGHTS	-1.4042 (1.0883)	-1.3436 (1.3721)	-0.9952 (1.2671)	-1.0421 (1.2225)	-0.9598 (1.2385)	-1.0728 (1.2140)
FOREGIN		4.4814 (4.1510)	4.1303 (4.1599)	3.9926 (4.3140)	4.3961 (4.8573)	3.8950 (4.3650)
COMMERCIAL		2.0449 (4.1246)	0.9306 (4.3822)	0.8224 (4.2641)	0.9709 (4.3244)	0.8116 (4.2781)
SIZE			2.1864** (0.8443)	2.3570** (0.7375)	2.0458** (0.8426)	2.4557*** (0.8426)
RULE_of_LAW				-0.8567 (2.3024)		
CORRUPTION_CONTROL					0.6510 (2.4169)	
REGULATORY_QUALITY						-1.4335 (2.3788)
Constant	4.4841 (7.6033)	-1.5359 (8.5434)	-8.8472 (9.7614)	-10.5116 (8.1185)	-7.6530 (7.1073)	-11.7510 (7.3064)
<i>Obs.</i>	103	103	103	103	103	103
<i>R</i> ²	0.0249	0.0388	0.0716	0.0724	0.0722	0.0739

Notes: All models are estimated using OLS. Robust standard errors in parentheses, and $p^* < 0.10$, $p^{**} < 0.05$, $p^{***} < 0.01$.

We have tested for multicollinearity using Variance Inflation Factor (VIF) in all models, and no multicollinearity was detected.

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