

# Organizational Form and Expense Preference Behavior: Evidence from Islamic Banks

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## Abstract

This paper examines the organizational forms of Islamic banks, corporate governance mechanism, and their effects on organizational behavior, specifically relating to managerial expense preferences. Findings of this study indicate that organizational forms of Islamic banks influence managerial expense preferences. A stochastic frontier approach test supports the initial findings and reveals that the average noninterest cost inefficiency of Islamic banks without Shari'ah Boards is 23% compared to commercial banks. Islamic banks with Shari'ah Boards are, on average, 28% less noninterest cost inefficient compared to Islamic banks without Shari'ah Boards, and are on average, 16% less noninterest cost inefficient compared to commercial banks.

## Introduction

Both the traditional theory of the firm and neoclassical microeconomic theory assume that managerial behavior and goals are primarily driven by an output that maximizes profits in the short or long run. This assumption, developed by Williamson (1963) and modified by Rees (1974), offers a different opinion regarding managerial behavior (agency costs and transaction costs). Maximizing shareholders' value is an exclusive objective of a well-managed company that is driven by an environment in which a firm's owners are not its managers, markets are inefficient and less competitive, and a high degree of regulatory structure exists (Friedman, 1990). However, prior studies (e.g., Leibenstein, 1966; Leibenstein 1975; Williamson, 1963) provide a contrary view of ownership structure (hereinafter, *organizational form*) and demonstrate the tendency for managers to pursue policies that do not maximize profits (that is, *expense-preference behavior*) (e.g., Rhodes, 1980).

The remainder of the paper proceeds as follows. Section II presents a brief review of the relevant literature. Section III provides a conceptual framework. Section IV presents the research design and methodology. Section V presents the empirical results, robustness checks, and discussion. Section VI provides the concluding remarks.

## Literature Review

The primary difference between stock-form and mutual-form banks is who controls the bank and receives the profits. In stock-form banks, stakeholders elect managers, distribute profits, and can sell their privileges. In a mutual-form bank, depositors are the owners but not the managers of the organization.

Mester (1989)<sup>1</sup> and Stansell and Hollas (1990) argue that earlier studies implement inappropriate estimation techniques when providing evidence of expense-preference behavior among U.S. banks and saving and loans. The problem is the input demand functions, which are expenditure-share equations for the inputs as well as indicator variables that specify whether a firm exhibits expense-preference behavior. A positive, significant coefficient of the indicator variable indicates that the expense-preference behavior is prevalent and documented.

There are two components of economic or productive efficiency (Farrel, 1957). First is the firm's ability to produce as much output as a given input would permit, or the firm's ability to use as little input as possible, relative to output. Thus, the focus is on technical efficiency or waste avoidance; it essentially augments the orientation of output. The second component is the price element, which is the amount of output a firm must produce with minimum input expense. Therefore, selecting the least expensive combination of inputs to produce technically efficient output is the way to achieve efficient resource allocation (Lovell & Tatje, 1997).

Čihák and Hesse (2008) empirically investigate IB stability (riskiness) and compare it to commercial banks that operate within the same countries. The Z-score method is popular due to its uniqueness; it "is inversely related to the probability of a bank's insolvency, i.e., the probability that the value of its assets becomes lower than the value of the debt" (Čihák & Hesse, 2008, p. 7). Their empirical study uses the Z-score to investigate IBs because of their risk sharing and profit sharing arrangements, which provide protective buffers for deposit liabilities. In turn, the "book values of capital and reserves may underestimate the financial strength of these banks" (Čihák & Hesse, 2008, p. 7).

Hasan and Bashir (2003) empirically examine the financial and policy indicators that influence the overall performance of IBs and commercial banks. Their empirical investigation uses parametric and nonparametric methods to examine the relationship between profitability and banking characteristics. The study focuses on the connections among IBs' efficiency indicators by examining bank size, leverage, loans, short-term funding, overhead, net margins, and profitability. Those characteristics, specifically overhead, may indicate whether expense-preference behavior is prevalent in Islamic and/or commercial banks. They implement four measures of performance: net noninterest margin, profit margin, return on assets, and return on equity.

## **Conceptual Framework**

The first paradigm investigates stockholders who invest in banks, insurance companies, and other commercial organizations that are not Shari'ah compliant but invest in IBs as a partial fulfillment of their spiritual duties toward their beliefs. This path (paradigm) is prevalent in the Middle East and the Far East, especially in the Gulf Cooperation Council (GCC) countries and Malaysia. These investors focus on the contemporary side of their business activities, which opens a window for managers to become less efficient in maximizing profits and provide depositors with higher returns.

The second paradigm deals with the quasi-governmental IBs. The sample in this study includes publicly traded IBs, quasi-governmental IBs, and government-owned IBs. Owners of the quasi-government banks include the government, institutional investors, and high-net-worth individuals, including minority shareholders.

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<sup>1</sup>Mester (1989) assumed that expense-preference behavior does not apply to all firms and concentrated her test on the suspected individuals who demonstrate expense-preference behavior (mutual savings and loans).

## Research Design and Hypotheses

According to agency theory; specifically agency cost exhibits two types of conflicts: conflicts between shareholders and debt holders, and conflicts between shareholders and managers (Jensen & Meckling, 1976), unethical behavior declines when managers own a larger fraction of a firm's equity. Despite this, the absence of direct control and monitoring suggests a moral nature that is not readily reconciled with moral business conduct or the teachings of Shari'ah. In other words, IBs are similar to mutual-form banks. This increases managements' power and decreases the threat of concentrated ownership, which in turn encourages managers to misappropriate organizational resources and results in prevalent expense-preference behavior. This leads to the first hypothesis:

*Hypothesis 1: Managers of Islamic banks that do not integrate Shari'ah Supervisory Boards within their governance structure are less efficient and do exhibit greater expense-preference behavior agency costs than managers of Islamic banks that embed Shari'ah Supervisory Boards and managers of commercial banks, ceteris paribus.*

Agency theory recommends tight and direct control over managers' behavior. The controlling function is of importance because it reduces the agency problem, and more specifically, the agency cost and transaction costs. However, diversified entrepreneurs who placate their spiritual consciences by investing in IBs but fail to oversee, control, or monitor managers' activities actually increase managerial inefficiency and decrease the efficient utilization of resources. Nevertheless, if the IBs integrate the SSBs, managerial inefficiency decreases due to the overseeing, controlling, or monitoring of managers' activities. Accordingly, the second hypothesis is:

*Hypothesis 2: Managers of Islamic banks that are owned by multifaceted entrepreneurs and that do not integrate Shari'ah Supervisory Board are less efficient and have higher agency costs specifically related to expense-preference behavior as compared to Islamic banks that embed Shari'ah Supervisory Board, ceteris paribus.*

Stronger government controls should therefore offset this moral hazard. In addition, governments can implement more risk-management regulation. However, this involves a commitment to huge reforms, which are generally costly and time-consuming (Crivelli & Staal, 2010). Generally, governments are preoccupied with other political agendas, thus leading to the third hypothesis:

*Hypothesis 3: Management decisions in quasi-government Islamic banks that do not integrate Shari'ah Supervisory Board are less efficient and coincide with occurrences of agency problems specifically related to expense-preference behavior as compared to managers of Islamic Banks that embed the Shari'ah Supervisory Board in their governance structure, ceteris paribus.*

The profit-sharing concept, especially in *mudarabah* accounts, is sensitive because the expense-preference behavior does not prevail in the relationship between IBs and IAH depositors. *Mudarabah* accounts rely on profit sharing, but they can also lose money. In order to incentivize the IAH to keep its invested funds with IBs, managers may opt to return the initial amounts invested in the IAH without charging the losses to the IAH. Alternatively, managers

may decide (after BoDs' approval) to share losses with the owners and shareholders in order to encourage depositors and the UIAH to maintain their deposits and investments with IBs. This leads to the fourth hypothesis:

*Hypothesis 4: Managers of Islamic banks that do not embed Shari'ah Supervisory Boards and maintain Investment Account Holders and Unrestricted Investment Account Holders under the mudarabah concept exhibit more agency costs precisely relating to expense-preference behavior in comparison with the managers of Islamic banks that integrate Shari'ah Supervisory Boards, ceteris paribus.*

## **Data and Sample Construction**

Information on all available Islamic banks and commercial banks in the *BankScope* database was retrieved between 1993 and 2010. To make a fair comparison, a balanced panel sample is constructed and banks that did not have full 18-year (1993 to 2010) bank information were excluded. In addition, new Islamic Banks that were established and incorporated after 1993 were excluded from the sample. The sample includes Islamic banks in 15 countries: Bahrain, Bangladesh, Egypt, Indonesia, Iran, Jordan, Kuwait, Lebanon, Malaysia, Pakistan, Qatar, Saudi Arabia, Sudan, Turkey, and United Arab Emirates. The sample includes 82 IBs and 82 commercial banks, consisting of 2,950 bank-year observations. Information on *mudarabah* accounts and institutional owners of IBs is manually collected. The ownership structure and majority-shareholder information for the IBs is from relevant IB websites.<sup>2</sup> Bank specialization, assets, liabilities, earnings, expenses, ratings, and country- and risk-rating statistics are mainly from the *BankScope* database, supplemented with information from several country- and bank-level websites.

## **Variables and Methodology**

The purpose of this study is to relate measures of IBs' organizational form (diversified stockholders, quasi-government status, contractual agreements among IBs, the type of investment-account holders, and the impact of the organizational behavior) on the noninterest expense and noninterest cost inefficiency in an ordinary least squares cluster robust standard-error estimation.

The noninterest expense (*NIExp*) is a proxy for expense-preference behavior. To obtain noninterest expense, the noninterest expense ratio is employed and is determined by first adding all noninterest expense, such as salaries, wages, office, and other related expenses, and then obtaining the total noninterest expense to the total assets by lagged assets in the sample (Srinivasan, 1992; Johnson, 1993). *IBis* is a dummy variable that equals 1 if the bank is an IB; it equals 0 otherwise. *M\_Entreis* is a dummy variable that equals 1 if the shareholders are diversified; it equals 0 otherwise. *S\_Ownedis* is a dummy variable that equals 1 if the IB is a quasi-government bank; it equals 0 otherwise. *Mudarabahis* is a dummy variable that equals 1 if the IB offers a *mudarabah* account; it equals 0 otherwise.

Linear regression models require: linear relationships between dependent and explanatory variables; no serial correlation independence of the errors; constant variance (homoskedasticity) of errors; that time and any explanatory variables not be included; and normal error distribution.

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<sup>2</sup>BankScope does not offer information on the *mudarabah* accounts or the Islamic bank owners.

Pooled OLS requires the errors in each time period to be uncorrelated with the explanatory variables in the same time period in order for the estimator to be consistent and unbiased (Wooldridge, 2002). Correcting for heteroskedasticity, robust variance estimates was obtained.

Year dummies control for time fixed effects, which exploit within-group variation over time. In addition, country dummies are included to control for the average differences across countries for any observable or unobservable predictors that enhance the reliability of the coefficient estimates (Wooldridge, 2002). Control is used for country heterogeneity, by GDP growth and inflation as proxies for economic development and stability, respectively (Berger & Mester, 1997; Kosak & Zorik, 2010).

The first measure relates to the noninterest cost inefficiency and uses stochastic frontier analysis. X-inefficiency includes inefficiencies that are due to organizational factors rather than technological causes. It is possible to test for expense-preference behavior in banks even if they have different organizational forms (stock-form and mutual-form) by controlling for the X-inefficiency levels. Cost X-inefficiency measures the input efficiency of managers within an organization compared to others within the same industry using the same technology. In other words, it approximates banks' costs to those of the "best practice," thereby producing an identical output with the same conditions.

The bank-specific estimates of X-inefficiency,  $\mu_i$ , are obtained by using the distribution of the X-inefficiency term conditional on the estimate of the entire composite error term, as proposed by Jondrow, Knox, Lovell, Materov, and Schmidt (1982). Using a translog functional form, the (noninterest) cost inefficiency model is as follows:

$$\begin{aligned} \ln\left(\frac{C}{z * w_2}\right) = & \alpha_0 + \alpha_1 \ln(w_1 / w_2) + \frac{1}{2} \alpha_2 \ln(w_1 / w_2) \ln(w_1 / w_2) + \sum_{k=1}^3 \beta_k \ln(y_k) \\ & + \frac{1}{2} \sum_{k=1}^3 \sum_{k^*=1}^3 \beta_{kk^*} * \ln(y_k) \ln(y_{k^*}) + \frac{1}{2} \sum_{k=1}^3 \gamma_k \ln(\gamma_k) \ln(w_1 / w_2) \\ & + \frac{1}{2} \sum_{k=1}^3 \delta_{kl} \ln(\gamma_k) \ln(z_1) + \frac{1}{2} \ln(w_1 / w_2) \ln(z_1) + \text{year\_Dummies} \\ & + \text{region\_dummy} + \text{GDP\_growth} + v + \mu \end{aligned}$$

According to Berger (1993), Esho (2001), Humphrey (1992), and Peristiani (1997), there are two different approaches to measuring banks' flows of services. In this study, the intermediation technique is used to specify the input prices and outputs. The input prices equal: (1) the price of borrowed funds ( $w_1$ =interest expense divided by total borrowed funds); and (2) the price of labor ( $w_2$ =personnel expense divided by full-time equivalent workers). The three outputs are total loans ( $y_1$ ), liquid assets ( $y_2$ ), and other earning assets ( $y_3$ ). Total equity ( $z_1$ ) is used as a fixed input in the estimation to account for banks' endogenous choices of risk. In the estimation, the equation is normalized by one input price ( $w_2$ ) to impose linear homogeneity (Kuenzle, 2005). Finally,  $v$  represents the random noise, which incorporates both measurement error and luck, and  $\mu$  is the inefficiency term that increases bank costs and is assumed to have a half-normal distribution with positive value.

The second measure is to use the personnel expense as a proxy for expense-preference behavior. Total assets normalize the measure, and then the regression output of the initial

regression-estimation technique and the stochastic frontier techniques are compared with the personnel-expense dependent-variable outcome.

## Results and Discussion

Table 1 presents the descriptive statistics for panels 1, 2, 3, and 4. Panel 1 shows that the noninterest expense (*NINTEXP*), which is a proxy for expense-preference behavior, has an average of 0.03, a minimum of 0.00, and a maximum of 0.10. *Islamic* is a dummy variable that measures management inefficiency in allocating resources for IBs. The explanatory variable is approximately 50% (mean=0.50). *SSB* is a dummy variable that measures the controlling and monitoring functions of the integrated SSBs. The average *SSB* is about 20% (mean=0.20) and a maximum of 1.00. The average *EIUCR* is about 2.08 with a minimum of 1 and a maximum of 5. The average *Assets (log)* is about 7.00, with a minimum of 2.60 and a maximum of 17.58.

*A Semi\_State Owned* is a dummy variable that measures the effects of ownership structure (organizational form) when governments are partial owners of IBs. *A Semi\_State Owned* explanatory variable is approximately 30% (mean=0.30).

*Mudarabah* is a dummy variable. Because this type of account does not give depositors voting rights or board representation, it extends to the conceptual framework that with the absence of necessary observation, managers are not in positions for questioning. In addition, this specific account only shares profits with the depositors; it does not share the losses. In case of a loss, depositors bear the burden. Thus, approximately 24% (mean=0.24) of the IBs in the sample engage heavily in *mudarabah* accounts.

Table 2 depicts the results of the OLS cluster robust standard error estimation, assesses, and compares the impact of noninterest expense (expense preference) for Islamic and commercial banks. Models 1 and 2 investigate managerial behavior and expense-preference measures (noninterest expense). Model 1 investigates the effects on expense preference without control variables. Model 2 provides the same regression model with control variables. Model 3 investigates IBs' organizational forms and the effects of contractual agreements between IBs and investment accountholders on expense-preference behavior without control variables. Model 4 presents the same regression techniques with control variables.

Hypothesis 2 predicts that managers of IBs that are owned by multifaceted entrepreneurs and do not integrate SSBs are less efficient and have higher agency costs specifically relating to expense-preference behavior as compared to IBs that embed SSBs. Model 5 presents different organizational forms on expense preference without any control variables. The coefficient of *Multi\_Entre* is positive and statistically significant ( $\beta = 0.045$ ;  $p < 0.001$ ). Model 6 presents the same results as model 5, including controls for SSBs, year, and country effects. The coefficient on *Multi\_Entre* is positive and statistically significant ( $\beta = 0.046$ ;  $p < 0.001$ ). Nevertheless, the coefficient on *SSB* is negative and significant ( $\beta = -0.016$ ;  $p < 0.001$ ). This indicates that IBs without Shari'ah Boards that are owned by multifaceted entrepreneurs who know nothing about IBs and who have no interest in monitoring activities effectively encourage managers to misappropriate the resources of the IBs. Nonetheless, when IBs have integrated SSBs within their governance structures, the presence of this second layer reduces managerial propensity to engage in self-serving behavior. Thus, Hypothesis 2 is supported.

Hypothesis 3 predicts that management decisions in quasi-government IBs that do not integrate SSBs are less efficient and coincide with occurrences of agency problems specifically related to expense-preference behavior as compared to managers of IBs that embed the SSBs in their governance structure. The coefficient of *A Semi\_State Owned* is statistically significant and

positive ( $\beta = 0.018$ ;  $p < 0.001$ ). In the sixth model, the coefficient of *A Semi-State* is significant and positive ( $\beta = 0.014$ ;  $p < 0.001$ ).

This result supports Zif's (1983) findings that overstaffing quasi-government enterprises inversely affects managerial efficiency and encourages managers to avoid profit-maximizing policies. The coefficient of the *A Semi-State Owned* dummy variable could imply that quasi-government ownership indicates inefficiencies, either in managing expenses or in low employee productivity as compared to IBs with private ownership structure. This interpretation provides another avenue regarding quasi-government IBs and overstaffing issues. Although it may solve some persistent unemployment issues, overstaffing may hinder future economic development.

Hypothesis 4 predicts that managers of IBs that do not embed SSBs and maintain Investment Account Holders and Unrestricted Investment Account Holders under the *mudarabah* concept exhibit more agency costs precisely as they are related to expense-preference behavior in comparison with managers of IBs that integrate the SSBs. Model 6 depicts a coefficient of *mudarabah* that is positive and significant ( $\beta = 0.022$ ;  $p < 0.001$ ). The sixth model is identical to the fourth model and controls for SSBs, country, and year effects. The coefficient on *mudarabah* is positive and significant at ( $\beta = 0.014$ ;  $p < 0.001$ ).

Table 3 shows the estimated noninterest cost inefficiency scores of 15 countries that cover four regions (Far East, Middle East, Near East, and North Africa) in the banking sectors (Islamic and commercial) from 1993-2010 on the aggregate. The first row of table 3 depicts overall estimated noninterest cost inefficiency scores between IBs with SSBs and IBs without the SSBs of -27.50%. The second row of table 3 depicts overall estimated noninterest cost inefficiency scores between IBs with SSBs and commercial banks of -16.10%. However, when comparing the IBs that do not embed the SSBs with commercial banks, the overall noninterest cost inefficiency scores are, on average, 22.40% higher than commercial banks within the same regions. This supports the initial findings that IBs' organizational behavior (managements' behavior) exhibits more expense-preference than commercial banks.

Table 4 depicts results for the noninterest cost inefficiency regression by assuming identical production technology. The results are economically significant and support the initial findings. Furthermore, the regression results investigate the likely association between organizational form under different paradigms and the dependent variable of noninterest cost inefficiency scores by controlling for the integration of the SSBs. The OLS estimation regressions use estimated inefficiency scores assuming the same production technology for Islamic and commercial banks. Higher noninterest cost inefficiency in IBs is consistent with the expense-preference behavior scenario. The key is to understand whether the organizational form of an organization with and without the SSBs has negatively or positively influenced managerial behavior in terms of agency and transaction costs specifically relating to expense-preference behavior.

Inefficiencies of IBs with and without integrated SSBs are further investigated; the OLS cluster robust standard error estimation regressions use personnel expense as the dependent variable. Table 4 depicts regression results that investigate the likely association between organizational forms under different paradigms and noninterest cost inefficiency scores. Higher personnel expense in IBs is consistent with the expense-preference behavior scenario when SSBs are not integrated. Overall, there is a strong and negative association between IBs that embed the SSBs, noninterest cost inefficiency, personnel expense, and employee cost inefficiency, especially when estimates of efficiency scores are corrected for a different production technology, thereby indicating a lower degree of agency and transaction costs (and hence is the

expense-preference behavior). However, with IBs that do not integrate the Shari'ah Boards, findings indicate that managers have higher agency and transaction costs as compared to IBs with Shari'ah Boards and commercial banks.

Lower average noninterest cost inefficiency suggests that IBs with Shari'ah Boards do not engage in expense-preference behavior compared to IBs without Shari'ah Boards and commercial banks. The results from the robustness checks support the findings from the first estimation techniques and thus far support all three hypothetical paradigms of ownership structures, the Restricted Investment Account Holders, and the Unrestricted Investment Account Holders under the *mudarabah* concept. Despite that, IBs with Shari'ah Boards, on average, have lower noninterest cost inefficiency than those IBs without Shari'ah Boards and commercial banks, thus supporting the initial findings.

### **Conclusion**

Islamic and Commercial Banks operating in four different regions and organization forms was performed by employing a parametric approach and using a data set that spans the period 1993-2010. This is the first investigation that focuses on X-efficiency, which determines managerial efficiency or inefficiency from an economic perspective and more precisely relates to agency costs that stem from agency problems. The components of managerial efficiencies suggest that the source of X-inefficiency in IBs that do not integrate SSBs within their governance structure is minimized (in terms of average per unit production cost) as compared to managers of IBs that embed SSBs and managers of commercial banks that are not operating at optimal scale. In addition, managerial inefficiency is a proxy for agency costs, which is expense-preference behavior. It increases when: (i) the multifaceted owners of IBs without Shari'ah Boards increase; (ii) when the banks are quasi-government IBs and do not integrate the SSBs; and (iii) when the IB that does not embed the SSBs offers *mudarabah* investment accounts that do not give shareholders voting rights or board representation and thus exacerbates transaction cost problems.

Moreover, the results indicate that IBs without SSBs exhibit significant preference, including agency costs relating to personnel expenditures, which is consistent with earlier empirical studies. The findings are important for several reasons. First, although IBs that do not embed SSBs present themselves as Shari'ah compliant, being Shari'ah compliant is not a key determinant in eliminating agency problems or transaction costs. However, when the presence of SSBs is controlled for, IBs that integrate the SSBs eliminate the agency costs and transaction cost problems that stem from contractual issues due to the controlling, monitoring, and advising functions that the SSBs offer in terms of Shari'ah compliance. Managers of IBs without the integrated SSBs are cost inefficient and are more likely to have higher agency and transaction costs resulting from expense-preference behavior than commercial bank managers. However, Shari'ah corporate governance employs rigorous steps in issuing religious rulings for investments and business transactions, and by having the Shari'ah Boards integrated within the governance structure, agency cost and transaction cost problems become less prevalent. Second, the findings suggest that managers in regulated industries exhibit significant expense-preference behavior rather than profit-maximization behavior when the controlling and monitoring functions of the Shari'ah Boards are nonexistent.

Third, significant social costs, in the form of X-inefficiency, exist in stock-form IBs, especially those that do not integrate the Shari'ah Boards within the governance structure. The results also have at least one important policy implication: Islamic organizations with embedded

SSBs can improve a firm's efficiency by reducing managers' overindulgence and self-serving behavior.

This phenomenon validates the empirical findings of Berle and Means (1937) regarding the separation of ownership from control. They state that with such a separation, agency problems in terms of agency costs, transaction costs, and expense-preference behavior become more prevalent due to the fulfillment of the functions and roles of the corporate boards, and most importantly in the case of IBs, are due to the absence of the integrated SSBs within the governance of IBs.

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Table 1: Descriptive Statistics for Panels 1, 2, 3, and 4  
**Panel (1): All Sample Islamic and Commercial Banks**

| Variable             | Obs  | Mean | S.D. | Min  | 0.25 | Mdn  | 0.75 | Max   |
|----------------------|------|------|------|------|------|------|------|-------|
| NINTEXP              | 2950 | 0.03 | 0.02 | 0.00 | 0.02 | 0.03 | 0.05 | 0.10  |
| Islamic Bank (Dummy) | 2950 | 0.50 | 0.50 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00  |
| SSB                  | 2950 | 0.20 | 0.40 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00  |
| Middle East          | 2950 | 0.53 | 0.50 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00  |
| Assets (Log)         | 2950 | 7.00 | 2.33 | 2.89 | 5.29 | 6.15 | 7.72 | 15.50 |
| EIUCR                | 2950 | 2.08 | 1.30 | 1.00 | 1.00 | 1.00 | 3.00 | 5.00  |

**Panel (2): Islamic Banks**

| Variable           | Obs  | Mean | S.D. | Min  | 0.25 | Mdn  | 0.75 | Max   |
|--------------------|------|------|------|------|------|------|------|-------|
| NINTEXP            | 1476 | 0.05 | 0.02 | 0.03 | 0.04 | 0.05 | 0.07 | 0.10  |
| SSB                | 1476 | 0.41 | 0.49 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00  |
| Multifaceted       | 1476 | 0.05 | 0.21 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00  |
| A Semi_State Owned | 1476 | 0.30 | 0.46 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00  |
| Mudarabah          | 1476 | 0.24 | 0.43 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00  |
| Middle East        | 1476 | 0.04 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00  |
| Assets (Log)       | 1476 | 6.69 | 2.35 | 2.89 | 5.30 | 6.19 | 7.75 | 15.50 |
| EIUCR              | 1476 | 2.02 | 1.36 | 1.00 | 1.00 | 1.00 | 3.00 | 5.00  |

**Panel (3): Islamic Banks that embed Shari'ah Supervisory Board**

| Variable           | Obs | Mean | S.D. | Min  | 0.25 | Mdn  | 0.75 | Max   |
|--------------------|-----|------|------|------|------|------|------|-------|
| NINTEXP            | 605 | 0.02 | 0.01 | 0.00 | 0.01 | 0.02 | 0.02 | 0.03  |
| SSB                | 605 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| Multifaceted       | 605 | 0.02 | 0.15 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00  |
| A Semi_State Owned | 605 | 0.12 | 0.32 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00  |
| Mudarabah          | 605 | 0.09 | 0.29 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00  |
| Middle East        | 605 | 0.49 | 0.50 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00  |
| Assets (Log)       | 605 | 7.41 | 2.82 | 3.22 | 5.69 | 6.88 | 8.62 | 15.50 |
| EIUCR              | 605 | 2.14 | 1.24 | 1.00 | 1.00 | 2.00 | 3.00 | 5.00  |

**Panel (4): Commercial Banks**

| Variable           | Obs | Mean | S.D. | Min  | 0.25 | Mdn  | 0.75 | Max   |
|--------------------|-----|------|------|------|------|------|------|-------|
| NINTEXP            | 605 | 0.03 | 0.02 | 0.00 | 0.02 | 0.03 | 0.04 | 0.07  |
| SSB                | 605 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| Multifaceted       | 605 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| A Semi_State Owned | 605 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| Mudarabah          | 605 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| Middle East        | 605 | 0.49 | 0.50 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00  |
| Assets (Log)       | 605 | 7.08 | 2.68 | 3.00 | 5.45 | 6.40 | 8.14 | 15.50 |
| EIUCR              | 605 | 2.09 | 1.30 | 1.00 | 1.00 | 1.00 | 3.00 | 5.00  |

Table 2: Islamic Banks vs. Commercial Banks (Panels 1, 2, 3 and 4)

|                            | Model 1             | Model 2               | Model 3               | Model 4               | Model 5             | Model 6               | Model 7               |
|----------------------------|---------------------|-----------------------|-----------------------|-----------------------|---------------------|-----------------------|-----------------------|
| Islamic (Dummy)            | 0.035***<br>(65.96) | 0.034***<br>(68.55)   | 0.034***<br>(66.02)   | 0.033***<br>(67.56)   |                     |                       |                       |
| SSB                        |                     |                       | -0.018***<br>(-24.20) | -0.017***<br>(-21.01) |                     | -0.016***<br>(-12.28) | -0.010***<br>(-7.31)  |
| Multi_Entre                |                     |                       |                       |                       | 0.045***<br>(32.72) | 0.046***<br>(34.49)   | 0.017***<br>(16.35)   |
| A Semi_State               |                     |                       |                       |                       | 0.018***<br>(19.24) | 0.014***<br>(17.10)   | 0.014***<br>(18.21)   |
| Mudarabah                  |                     |                       |                       |                       | 0.022***<br>(28.70) | 0.022***<br>(28.85)   | 0.015***<br>(20.24)   |
| Multi_Entre* Mudarabah     |                     |                       |                       |                       |                     |                       | 0.025***<br>(4.18)    |
| Semi_State* Mudarabah      |                     |                       |                       |                       |                     |                       | 0.013***<br>(5.50)    |
| Assets (Log)               |                     | -0.001***<br>(-12.36) |                       | -0.008***<br>(-11.20) |                     | -0.003***<br>(-13.88) | -0.001***<br>(-12.79) |
| EIUCR                      |                     | 0.001<br>(1.54)       |                       | 0.005***<br>(3.88)    |                     | 0.002<br>(0.99)       | 0.002***<br>(8.22)    |
| Middle East                |                     | 0.005***<br>(10.33)   |                       | 0.004***<br>(4.56)    |                     | 0.004**<br>(2.27)     | 0.002*<br>(2.30)      |
| Year and Country           |                     | Yes                   |                       | Yes                   |                     | Yes                   | Yes                   |
| _cons                      | 0.018***<br>(83.45) | 0.019***<br>(15.20)   | 0.035***<br>(47.31)   | 0.038***<br>(25.25)   | 0.031***<br>(20.89) | 0.047***<br>(24.20)   | 0.041***<br>(19.47)   |
| <i>N</i>                   | 2950                | 2950                  | 2950                  | 2950                  | 2950                | 2950                  | 1474                  |
| <i>R</i> <sup>2</sup>      | 0.396               | 0.418                 | 0.446                 | 0.459                 | 0.470               | 0.487                 | 0.498                 |
| adj. <i>R</i> <sup>2</sup> |                     | 0.415                 | 0.445                 | 0.456                 | 0.465               | 0.479                 | 0.485                 |

This table presents OLS robust estimation models for comparing expense preferences in IBs and commercial banks. Column 1 examines expense-preference behavior between IBs and commercial banks. The dependent variable, the noninterest expense ratio, is a proxy for expense-preference behavior. Islamic is a dummy variable that equals 1 if the bank is an IB; it equals 0 otherwise. Column 2 depicts the first model with control variables. Column 3 represents IBs and SSBs on expense-preference behavior without control variables. Column 4 depicts model 3 control variables. Column 5 examines diversified shareholders, quasi-government IBs, and mudarabah accounts. Column 6 depicts model 5 and SSBs on expense-preference behavior. Column 7 depicts model 6 with interaction variables. Standard errors are in parentheses † p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001.

Table 3: Cost Inefficiency between Islamic and Commercial Banks

| Islamic Banks with SSBs versus Islamic Banks without SSBs |                  |        |
|---|------------------|--------|
| Islamic Banks with SSBs                                   | Islamic Banks    | Diff   |
| 0.207   | 0.464            | -0.275 |
| Islamic Banks with SSBs versus Commercial Banks           |                  |        |
| Islamic Banks with SSBs                                   | Commercial Banks | Diff   |
| 0.255   | 0.416            | -0.161 |
| Islamic Banks without SSBs versus Commercial Banks        |                  |        |
| Islamic Banks   | Commercial Banks | Diff   |
| 0.514   | 0.29             | 0.224  |

Table 4: Noninterest Cost Inefficiency: Islamic vs. Commercial

|                            | Model 1              | Model 2               | Model 3             | Model 4              | Model 5              | Model 6              |
|----------------------------|----------------------|-----------------------|---------------------|----------------------|----------------------|----------------------|
| Islamic (Dummy)            | 0.258***<br>(58.21)  | 0.253***<br>(55.44)   | 0.186***<br>(9.66)  | 0.183***<br>(9.83)   |                      |                      |
| SSB                        |                      |                       | -1.146***           | -1.147***<br>(-3.41) | -1.312***<br>(-3.47) | -1.270***<br>(-3.41) |
| Multi_Entre                |                      |                       |                     |                      | 0.183***<br>(25.75)  | 0.209***<br>(10.44)  |
| A Semi_State Owned         |                      |                       |                     |                      | 0.083***<br>(7.86)   | 0.173***<br>(7.06)   |
| Mudarabah                  |                      |                       |                     |                      | 0.093***<br>(5.76)   | 0.121***<br>(5.84)   |
| Multi_Entre* Mudarabah     |                      |                       |                     |                      |                      | 0.047*<br>(2.17)     |
| Semi_State* Mudarabah      |                      |                       |                     |                      |                      | 0.105***<br>(5.36)   |
| Assets (Log)               |                      | -0.004***<br>(-4.34)  |                     | -0.004***<br>(-4.91) | -0.003**<br>(-2.79)  | -0.003***<br>(3.33)  |
| EIUCR                      |                      | -0.0102***<br>(-5.05) |                     | -0.010***<br>(-4.64) | -0.017***<br>(-6.63) | -0.005<br>(-1.42)    |
| Middle East                |                      | -0.0158***<br>(-3.36) |                     | 0.00544<br>(1.53)    | -0.043<br>(-7.69)    | -0.011<br>(-1.09)    |
| Year                       |                      | Yes                   |                     | Yes                  | Yes                  | Yes                  |
| _cons                      | 0.486***<br>(125.56) | 0.540***<br>(41.49)   | 0.558***<br>(29.23) | 0.578***<br>(41.21)  | 0.601***<br>(39.03)  | 0.616***<br>(43.75)  |
| <i>N</i>                   | 2388                 | 2388                  | 2388                | 2388                 | 2388                 | 2388                 |
| <i>R</i> <sup>2</sup>      | 0.358                | 0.390                 | 0.429               | 0.463                | 0.473                | 0.500                |
| adj. <i>R</i> <sup>2</sup> |                      | 0.386                 | 0.405               | 0.457                | 0.466                | 0.489                |

This table presents OLS robust estimation models for comparing expense-preference behavior in IBs and commercial banks. Column 1 examines expense-preference behavior between IBs and commercial banks. The dependent variable, noninterest cost inefficiency, is a proxy for expense-preference behavior. *Islamic* is a dummy variable that equals 1 if the bank is an IB; it equals 0 otherwise. Column 2 depicts the first model with control variables. Column 3 examines expense-preference behavior between IBs without SSBs, IBs with SSBs, and commercial banks. Column 4 depicts model 3 with control variables. Column 5 examines the effects of diversified shareholders, quasi-government IBs, and *mudarabah* accounts on expense-preference behavior with control variables. Column 6 depicts model 5 with SSBs and control variables including interaction variables. Standard errors are in parentheses † p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001.