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By *Pejman Abedifar, Kais Bouslah, Shatha Qamhieh Hashem, and Liang Song*

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How Informative Are Stock Prices of Islamic Banks?

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JEL Classifications: G12, G14, G21, G30, M41

Keywords: Stock Return Non-Synchronicity; Stock Illiquidity; Future Earnings Prediction Ability; Islamic Banking

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1. Introduction

Financial systems play a pivotal role in the economy. A well-functioning financial system facilitates mobilization of resources, collection and process of information, allocation of resources to the most promising projects and helping exert of corporate control (Levine 1997). The literature underscores the fact that financial systems with different structures can have different impacts on the economy (Levine et al. 2000; Beck and Levine 2004 among others). In several Muslim countries, banking system has been transformed following the introduction of Islamic banking. Extant literature has shown differences between Islamic and conventional banks in various aspects such as credit risk (Abedifar et al. 2013; Baele et al. 2014), efficiency (Al-Jarrah and Molyneux 2005), insolvency risk (Cihak and Hesse 2010), market power (Weill 2011) and systemic risk (Abedifar et al. 2017). One key question is whether stock prices of this novel financial engineering are less informative than those of conventional banks. This is worthwhile to explore, because it can contribute to an understanding of how to effectively supervise the banking industry in countries with dual banking systems, where Islamic and conventional banks operate alongside each other. Specifically, if Islamic banks have less information content in stock prices than conventional banks, market forces may not be an effective way to discipline Islamic banks and more direct supervision is needed.

The extant literature shows that financial market can influence the real side of economy through the information channel, because securities prices can convey aggregate information possessed by outsiders, and corporate management can use such information to make more informed decisions (Dow and Gorton 1997; Subrahmanyam and Titman 1999). One can argue that since Islamic banking is more connected to the real economy, we expect that their market prices can transmit the information to the management more effectively. However, Islamic banks use

rather complex lending technologies and financial instruments that can exacerbate asymmetric information problem, which can slow down incorporation of information into the market prices.

Firstly, Islamic banks provide credit to their clients through trade contracts in lieu of loan agreements. For instance, for a simple debt-based finance contract such as *Murabaha*, an Islamic bank purchases the product and then resells it to the client on credit. For purchasing the product in the market, the Islamic bank appoints the client as her agent in order to avoid a real trade transaction. Since ownership of the product bears some risk for the owner, the client must take necessary steps in order to keep the Islamic bank in the safe side. Secondly, Islamic financial products have dual characteristics, because they should comply with both *Sharia* (Islamic law) and local laws and legislation. The chief executive of CIMB Islamic bank, Badlisyah A. Ghani, argues that the complexity and opaqueness of Islamic instruments can be intensified when *Sharia* and local laws are not sufficiently compatible[2].

Thirdly, Islamic finance jurisprudence follows pre-modern jurisprudence, and hence it is not perfectly compatible with today's financial engineering (El-Gamal 2008). Moreover, El-Gamal (2005) warns that Islamic finance can be subject to abuse by money launderers, because of some special features of asset-based Islamic financial products. He argues that in order to make the product permissible, Islamic banks should separate their clients from the underlying conventional products, for instance by creating a special purpose vehicle (SPV) to convince their clients that they provide Islamic financial services from a separate source of funds than conventional sources, or by signing two separate sale contracts in order to convince Islamic jurists that the product is in compliance with *Sharia*. Such mechanisms and isolations can be attractive to money launderers and criminal financiers.

[2] http://online.thomsonreuters.com/assets/downloads/islamicRep_A4_brochure.pdf

Finally, stocks of Islamic banks are classified as Sharia-compliant securities, and hence traded mostly by religiously conscious investors who are not authorized by Sharia to do speculative trading due to Sharia restrictions against uncertainty (*Gharar*). As such, trading and speculative transactions on stocks of Islamic banks are likely to be less than those of conventional banks. On the one hand, fewer transactions can lower down the information content of the stocks; on the other hand, fewer speculative trading may mitigate conveying misleading signals and creation of bubbles.

We attempt to achieve our objective by taking the following steps. First, we compare stock returns non-synchronicity of Islamic vis-a-vis conventional banks. This measure was proposed by Roll (1988). A large body of empirical studies show that stocks with greater comovements with the market and industry returns convey less idiosyncratic information, and hence a higher return non-synchronicity represents a higher price informativeness (see e.g., Morck et al. 2000; Wurgler 2000; Durnev et al. 2003; Durnev et al. 2004; Hasan et al. 2014; and Francis et al. 2015).

Second, we use the illiquidity ratio to compare stock returns informativeness of Islamic vis-à-vis conventional banks. This measure was introduced by Amihud (2002), and is used by several studies as a proxy of price informativeness (see e.g. Ferreira et al. 2011 and Fresard 2012). The illiquidity ratio captures the price impact of trades, which is considered as a proxy for the amount of private information impounded in stock price (Kyle 1985; Fresard 2012). The price impact of trades is positively related to the amount of informed trading on a stock. The higher the illiquidity ratio, the higher the stock price informativeness, i.e., the stock price is tracking more closely its fundamental value.

Third, we compare the strength of current stock returns-future earnings relation for Islamic vis-a-vis conventional banks. This measure was introduced by Collins et al. (1994), and further

developed by Lundholm and Myers (2002). Specifically, stock price informativeness is proxied by the extent to which current stock prices incorporate information about future earnings (Fernandes and Ferreira 2008) or how much information about future earnings is embedded in stock prices (Durnev et al 2003). If the coefficient of future earnings in a regression of current returns on past, current and future earnings is positive and significant, then the stock price incorporates more information about future earnings, i.e., higher price informativeness.

In this paper, we study a sample of 2,210 observations for 170 banks operating in 12 countries with dual banking systems - wherein Islamic and conventional banks operate - over 2006–2017 timespan. The results show that Islamic banks have a lower stock price non-synchronicity, have lower illiquidity ratio, and their current returns have less predictive power for future earnings. Overall, the findings suggest that Islamic banks have less information content in stock prices than conventional banks.

This paper contributes to several bodies of literature. First it adds to the large literature on opacity of banks. For instance Morgan (2002) claims that banks are more opaque than other industries. We extend this literature by showing that Islamic banks are more opaque than conventional banks. Second, it contributes to the literature on the influence of religion on economic activities. For example, Hilary and Hui (2009) demonstrate that Christian religiosity may influence investment decision-making. Dyreng et al. (2012) and McGuire et al. (2012) show that Christian religiosity also has a significant impact on financial reporting decisions. Our paper extends this stream of literature by investigating the effect of a specific religion (i.e., Islam) on firms' stock price informativeness. Third, this paper is related to the literature on Islamic banking. Previous studies claim that the heterogeneities between Islamic and conventional banks improve the overall performance of dual banking systems (Gheeraert 2014; Gheeraert and Weill 2015; Abedifar et al.

2016). Our results suggest that introduction of Islamic banking can also incur some supervision cost because Islamic banks are less transparent than conventional banks.

The remainder of the paper is organized as follows: Section 2 presents our methodology and econometric specifications. Section 3 describes our sample. Section 4 discusses our empirical results and section 5 provides concluding remarks.

2. Methodology and Econometric Specifications

2.1 Banks Stock Return Non-Synchronicity and Price Informativeness

Stock return non-synchronicity refers to the variation in the stock return that is idiosyncratic, i.e. not explained by market and industry returns. This unexplained firm specific return variation may convey private information revealed by speculative traders (see e.g., Grossman and Stiglitz 1980; Glosten and Milgrom 1985; and Kyle 1985). The stock return non-synchronicity as a measure for capturing firm private information was firstly introduced by Roll (1988), and later on was improved by Morck et al. (2000), Durnev et al. (2003), and Durnev et al. (2004). The main idea is that firm's idiosyncratic return variation is correlated with the private information of traders, who have no communication with the firm other than their trades in the financial market. A large body of literature shows that stock return non-synchronicity is positively related to price informativeness (see e.g. Morck et al. 2000; Durnev et al. 2003; Wurgler 2000; and Durnev et al. 2004; Hasan et al. 2014; Francis et al. 2015) and represents higher transparency (Li and Myers 2006).

Stock return non-synchronicity is commonly measured using R-squared of a standard regression model. The bank specific return variation is calculated as $Non\_SYNCHRO_i = Ln((1 - R^2) / R^2)$, where R^2 is estimated from the following regression:

$$r_{it} = a_i + b_{iB}\, r_{Bt} + b_{im}\, r_{mt} + \varepsilon_{it} \quad (1)$$

where r_{it} is the return of bank i at time t, r_{Bt} is the return of the banking industry at time t, and r_{mt} is the return of the market m at time t. The return of banking industry is calculated without including bank i.

We use the following multivariate regression equation in order to compare stock price non-synchronicity of Islamic banks vis-à-vis conventional banks.

$$Non\_SYNCHRO_{it} = b_0 + b_1\, Islamic\_D_{it} + \delta X_{it} + \alpha yearFE + \gamma countryFE + \varepsilon_{it} \quad (2)$$

In Equation (2), we regress price informativeness proxy ($Non\_SYNCHRO_{it}$) obtained from Equation (1) on Islamic banks' dummy ($Islamic\_D_{it}$) and a set of control variables. We consider conventional banks as the base group. We include a vector (X_{it}) for bank specific and country specific variables. Bank specific factors include logarithm of total assets ($size$), financial leverage ($leverage$), growth rate of total assets ($asset\_growth$), ratio of non-interest expense to net operating income ($inefficiency$), the ratio of non-performing loans to net loans ($nploans$), ownership structure (captured by two dummy variables for foreign and state-ownership, where domestic private ownership is set as the control group) and a dummy variable to represent cross-listing. Country specific factors include growth of GDP per capita (GDP_growth) and domestic interest rate ($interest\_rate$). $yearFE$ and $countryFE$ represent year fixed effects and country fixed effects, respectively.

2.2. Illiquidity Measure and Stock Price Informativeness

In this sub-section, we gauge stock price informativeness of Islamic banks vis-à-vis conventional banks by using the illiquidity ratio ($illiq$). This measure was introduced by Amihud (2002), and is used as a proxy of stock price informativeness in several studies (see e.g. Ferreira et al. 2011 and Fresard 2012). It is computed as the annual average of the weekly ratio between the stock return

absolute value and the stock trading volume in dollars (multiplied by 10^6). It measures the stock absolute return per dollar of weekly trading volume. The illiquidity ratio is considered as an approximation for the price impact of trades, which is positively related to the amount of informed trading on a stock (Kyle 1985; Fresard 2012). The illiquidity ratio is expected to be positively associated with private information impounded in stock prices (Fresard 2012; Fernandes and Ferreira 2008). In other words, higher illiquidity ratio implies higher stock price informativeness. The illiquidity ratio ($illiq$) is calculated as:

$$illiq_t = \frac{1}{D_i} \sum_{t=1}^{D_i} \frac{|r_{it}|}{dtVol_{it}} \varepsilon_{it} \quad (3)$$

where D_i is the number of weeks for bank i with valid observations during the given period, $|r_{it}|$ is firm i stock return absolute value at time t, and $dtVol_{it}$ is the dollar trading volume of bank i at time t.

We use the following multiple regression equation in order to compare the illiquidity ratio of Islamic banks vis-à-vis their conventional counterparts.

$$illiq_{it} = b_0 + b_1\, Islamic\_D_{it} + \delta X_{it} + \alpha\, yearFE + \gamma\, countryFE + \varepsilon_{it} \quad (4)$$

In Equation (4), we regress the illiquidity measure ($illiq_{it}$) obtained from Equation (3) on Islamic banks' dummy (*Islamic_D*), a set of control variables X_{it}, *yearFE* and *countryFE* as outlined in Equation (2) above.

2.3. Banks' future earnings level and Stock Price Informativeness

In this sub-section, we compare the strength of current stock returns-future earnings nexus for Islamic vis-a-vis conventional banks. The accounting literature suggests an alternative measure of stock price informativeness based on the relationship between current stock returns and future earnings (Collins et al. 1994; Lundholm and Myers 2002; Durnev et al 2003). More specifically,

the ability of current stock returns in tracking future earnings is a measure of stock price informativeness (Durnev et al 2003). In other words, stock price informativeness is proxied by the extent to which stock price incorporates information about future earnings (Fernandes and Ferreira 2008) or how much information about future earnings is embedded in stock prices (Durnev et al 2003). The basic idea is that current stock return is determined by or can be decomposed into three components: unexpected current earnings, changes in expected future earnings and a random noise not related to the first two components (Lundholm and Myers 2002). This return decomposition can be represented by a regression equation where current stock returns are regressed on unexpected current earnings, changes in expected future earnings and a random error. Since the independent variables of this regression are not observable, different proxies have been used in the literature. In this paper, we follow the regression model suggested by Lundholm and Myers (2002) to examine the relation between current stock returns and future earnings:

$$R_{it} = b_0 + b_1 E3_{it} + b_2 E_{it-1} + b_3 E_{it} + b_4 R3_{it} + \delta X_{it} + \alpha\, yearFE + \gamma\, countryFE + \varepsilon_{it} \quad (5)$$

wherein R_{it} represents the return for bank i at year t, $E3_{it}$ is the future earnings, equals the sum of earnings of years: $t+1, t+2, t+3$, that are scaled by equity market value at the beginning of year t. E_{it-1} is earnings of year $t-1$ scaled by equity market value at the beginning of year $t-1$. E_{it} is the current earnings in year t, that are scaled by equity market value at the beginning of year t. $R3_{it}$ is the future return, which are the buy and hold returns over the three-year period that follow the current year. X_{it} is a vector of control variables for bank specific and country specific variables as outlined in Equation (2) above. $yearFE$ and $countryFE$ represent year fixed effects and country fixed effects, respectively. On the basis of the work of Lundholm and Myers (2002), the coefficient of interest is b_1 which is expected to be positive, the past earnings coefficient b_2 is

expected to be negative, the current earnings coefficient b_3 is expected to be positive, and the future returns coefficient b_4 is expected to be negative.

3. Data and Descriptive Statistics

Our sample consists of listed banks in 12 countries with dual banking systems, where both Islamic and Conventional banking are operating[3]. We collect financial data from Datastream and macroeconomic data from the World Bank and central banks websites. The sample covers 2,210 observations for 170 banks across 12 countries over the period 2006–2017. Table AI in the appendix defines the variables used in this study.

Based on the information collected from Datastream and the websites of individual banks we classify banks into two categories: IB (Islamic Bank) and CB (Conventional Bank). Panel A of Table AII in appendix presents the sample distribution by country and bank type. Our sample includes 44 Islamic banks and 126 conventional banks. Bangladesh has the highest number of Islamic banks (8), followed by UAE (7) and Bahrain (6). Indonesia and Bangladesh have the highest number of Conventional banks with 35 and 25 banks, respectively.

Panel B of Table AII illustrates ownership structure and cross-listing status of banks in our sample. Banks are classified into three categories: domestic privately owned banks (*Domestic*), state-owned banks (*State*), and foreign-owned banks (*Foreign*). The proportion of Islamic banks with foreign-owners is higher than that for conventional banks. About 68% (74%) of Islamic (Conventional) banks are domestic privately owned banks. Foreigners own 30% of Islamic banks and 17% of conventional banks. 16% of Islamic banks and 23% of conventional banks are cross-listed. Finally, Table AIII in the appendix shows macroeconomic indicators of the countries in our

[3] We have 12 countries in our sample: Bahrain, Bangladesh, Egypt, Indonesia, Jordan, Kuwait, Malaysia, Pakistan, Qatar, Saudi Arabia, Turkey, and UAE.

sample. The average *GDP_growth* over the study period ranges between 3.17 and 10.38. The former belongs to Kuwait and the latter is the growth rate of Qatar. Bahrain has the minimum average *interest_rate*, which is equal to 1.30%, whereas Turkey has the highest *interest_rate* in our sample.

Table I presents descriptive statistics of our variables. It also shows p-value for mean equality test between Islamic and conventional banks. The descriptive statistics of our informativeness measures show that Islamic banks have relatively lower levels of informativeness compared to conventional banks. For instance, the mean value of firm specific return variation, e.g. $Non\_SYNCHRO$, is 0.75 for Islamic banks and 0.98 for conventional banks. The mean difference is statistically significant at the 1% level. Note that a lower firm specific return variation ($Non\_SYNCHRO$) implies a lower level of price informativeness. Moreover, the mean value of the illiquidity ratio ($illiq$) is 1.28 for Islamic banks and 14.73 for conventional banks. Again this difference is significant at the 1% level, confirming that Islamic banks have lower level of price informativeness. The mean equality test results show that current return (R_{it}) and future return ($R3_{it}$) of Islamic banks are not significantly different from those of conventional banks. However, the mean equality test results for current earnings (E_t) and lagged earnings (E_{t-1}) are statistically significant at the 1% level, with both measures being lower for Islamic banks.

[Insert Table I here]

In terms of bank characteristics, the mean equality test results show that leverage and cost inefficiency of Islamic banks are not significantly different from those of conventional banks. However, Islamic banks are, on average, larger and have higher asset growth and non-performing loans compared to conventional banks.

Table AIV in the appendix presents the pair-wise correlation between the variables used in our analysis. It shows no major collinearity problems among our independent variables. All variables used in the analysis are winsorized at the 1 and 99 percentiles to exclude possible outliers, and all regression specifications include dummies for year and country fixed effects that are not reported in the Tables. Moreover, all variables are expressed in US dollars to control for any effects of exchange rates.

4. Empirical Results

4.1 Stock Return Non-Synchronicity of Islamic and Conventional Banks

In this sub-section we examine whether stock prices of Islamic banks are less informative than those of their conventional counterparts using firm specific return variation ($Non\_SYNCHRO$) measure. We estimate Equation (2) using random effects technique. Table II presents the results.

[Insert Table II here]

In the first column of Table II, we regress the non-synchronicity measure ($Non\_SYNCHRO$) on Islamic bank dummy, a set of bank characteristics, country characteristics, as well as year and country fixed effects. The coefficient associated with the Islamic bank dummy is negative and statistically significant at the 1% level. This finding suggests that Islamic banks have, on average, lower price informativeness compared to conventional banks.

As shown in Panel B of Table AII, banks in our sample have different ownership structure, where banks are owned by domestic private sector, Governments or foreigners. We argue that ownership structure affects stock price informativeness. In particular, we expect foreign-owned banks to exhibit higher transparency and consequently higher price informativeness. In the second column of Table II, we augment the regression shown in the first column by adding two dummies representing foreign-owned banks (*Foreign_D*) and state-owned banks (*State_D*), the domestic

privately owned banks is the base group. As expected, the coefficient of the variable *Foreign_D* is positive and highly significant, indicating that foreign owned banks have higher price informativeness. Our main variable of interest, Islamic bank dummy, continues to be negative and statistically significant. Moreover, the magnitude of its coefficient increases from -0.63 to -0.74 after adding the ownership structure to the regression.

Panel B of Table AII also shows that some banks in our sample are cross-listed. It is also intuitive to expect that the stock prices of cross-listed banks to be more informative due to the disclosure requirements of several listing exchanges, in particular those located in developed countries. In the third column of Table II, we augment further the regression by adding a dummy variable for cross-listed banks (*cross_listed_D*). Although the coefficient of the cross-listed dummy is not significant, our main variable of interest, Islamic bank dummy, continues to be negative and statistically significant.

The economic magnitude is substantial. Holding all other factors constant, the stock price non-synchronicity is, on average, 0.72 lower for Islamic banks as compared to their conventional counterparts, which equals 73% of the average $Non\_SYNCHRO$ of conventional banks. This implies that the idiosyncratic variation in the stock return, i.e. not explained by market and industry returns, is lower for Islamic banks by about 33%. In other words, stock returns of Islamic banks convey less private information. In sum, the findings of Table II suggest that Islamic banks have, on average, lower level of price informativeness compared to conventional banks.

In terms of bank characteristics, the results show that bank size has a significantly negative association with stock price non-synchronicity, indicating that smaller banks in our sample have higher price informativeness. The stock prices of small banks impound more information about the bank fundamentals. This could be explained by the fact that larger banks are associated with

higher information asymmetry, as perceived by market participants, due to the complexity of their operations and organization structure. Banks asset growth rate and non-performing loans have a significantly positive association with stock price non-synchronicity, implying that banks with a larger asset growth and non-performing loans rates have higher stock price informativeness. In terms of country specific factors, the results show that GDP per capita growth rate has a significantly negative relationship with stock return non-synchronicity.

4.2. Stock price illiquidity ratio of Islamic and Conventional Banks

In this sub-section, we examine whether stock prices of Islamic banks are less informative than those of their conventional counterparts using the illiquidity ratio ($illiq$) that is introduced by Amihud (2002). Illiquidity ratio is the annual average of the weekly ratio between the stock return absolute value and the stock trading volume in dollars (multiplied by 10^6). It measures the impact of trades on the stock price, which is positively related to the amount of informed trading on a stock (Kyle 1985; Fresard 2012). The higher the illiquidity ratio, the higher the stock price informativeness, i.e., the stock price is tracking its fundamental value more closely.

Table III reports estimation of Equation (4) using random effects technique. In the first column of Table III, we regress the $illiq$ measure on the Islamic bank dummy, a set of bank characteristics, country characteristics, as well as year and country fixed effects. The coefficient associated with the Islamic bank dummy is negative and statistically significant at the 1% level. This finding suggests that Islamic banks have, on average, lower price informativeness compared to conventional banks. In the second and the third columns of Table III, we add the ownership structure (*Foreign_D* and *State_D*) and the cross-listing (*cross_listed_D*) variables, respectively. Although none of the coefficients associated with the latter variables are significant, our main variable of interest, Islamic bank dummy, continues to be negatively and statistically significant.

Holding all other factors constant, the magnitude of the stock price illiquidity ratio is, on average, 9.37 lower for Islamic banks as compared to their conventional counterparts. This value represents around 63% of the average illiquidity ratio for conventional banks.

[Insert Table III here]

Overall, the findings reported in Table II and III are consistent and suggest that Islamic banks have, on average, lower price informativeness compared to conventional banks.

4.3. Current Return- Future Earnings Nexus for Islamic and Conventional Banks

In this sub-section, we consider the strength of the relationship between current stock return and future earnings for Islamic vis-a-vis conventional banks. For this purpose, we use the current return-future earnings regression model proposed by Lundholm and Myers (2002). The coefficient associated with future earnings ($E3_{it}$) is the coefficient of interest. If this coefficient is positive and significant, then stock price incorporates more information about future earnings, i.e., stock price is tracking its fundamental value more closely. If this coefficient is not significant, then stock price incorporates no or little information about future earnings, i.e., stock price deviates from its fundamental value.

In Table IV, we estimate Equation (5) by regressing the current return (R_{it}) on future earnings ($E3_{it}$), lagged earnings (E_{t-1}), current earnings (E_t), a set of bank characteristics, country characteristics, as well as year and country fixed effects. We estimate the model by using random effects technique. Column (1) reports the ability of current stock return for Islamic banks (IB) to predict its future earnings. In a similar vein, column (2), presents the informativeness ability for conventional banks (CB). The future earnings ($E3_{it}$) coefficient (b_1) is positive as expected, however, it is only marginally significant (at 10% level) for Islamic banks. In contrast, the future earnings ($E3_{it}$) coefficient (b_1) is positive and highly significant (at 1% level) for conventional

banks. This implies that current returns (R_{it}) of conventional banks have higher future earnings ($E3_{it}$) prediction ability in comparison with Islamic banks. Moreover, for conventional banks, the coefficient of current earnings (future returns), b_3 and b_4, respectively, is significantly positive (negative), which is in line with the literature.

[Insert Table IV here]

Furthermore, column (1) shows that Islamic banks current return (R_{it}) is significantly positively associated with asset growth, and has a significantly negative correlation with the cross listing dummy (*cross_listed_D*). In column (2) we find that current return (R_{it}) of conventional banks has a significant negative relationship with state ownership (*State_D*). The results also show that current return (R_{it}) of both Islamic and conventional banks is negatively related to interest rate. Overall, the findings in this sub-section are consistent with those reported in Tables II and III, and suggest that Islamic banks generally have a lower price informativeness in comparison with conventional banks.

5. Concluding Remarks

This paper investigates the informativeness of stock prices of Islamic banks. To achieve our objective, we use three price informativeness proxies: first we compare stock returns non-synchronicity of Islamic vis-a-vis conventional banks. Second, we compare the stocks illiquidity ratio of Islamic banks with their conventional counterparts. Third, we examine the future earnings prediction ability of current returns of Islamic and conventional banks.

We study a sample of 2,210 observations for 170 banks across 12 countries over the 2006–2017 period. We find that Islamic banks have lower stock return non-synchronicity, lower illiquidity ratio, and their current returns have lower future earnings prediction ability in comparison with conventional banks. Our findings suggest that stock prices of Islamic banks have

lower level of informativeness compared to conventional banks. This could be due to the fact that Islamic banking is more complex and opaque than conventional finance.

In summary, the results show that stock returns of Islamic banks convey less firm-specific information, which can be due to their lower degree of transparency mandated by their financial paradigm. This suggests that for Islamic banks, market discipline may not be as effective as it is for conventional banks and hence they require more direct supervision. Our findings have important implications for policy-makers and investors.

Table I. Descriptive statistics

This table presents the descriptive statistics of variables used in the regression specifications for Islamic and conventional banks. The last column in the table reports the p-value for mean equality test between the two banks types. The sample covers 2,210 observations for 170 banks across 12 countries over the period 2006–2017. The informativeness measures are included in *Informativeness proxies*: $Non\_SYNCHRO$ is the measure of stock return non-synchronicity, and $illiq$ is the average weekly ratio of a stock's absolute return by the dollar volume. Return measures are included in *Return proxies*: R_t is Current return, and $R3_t$ is Future return. Earnings measures are included in *Earnings proxies*: $E3_t$ is Future earnings, E_t is current earnings, and E_{t-1} is lagged earnings. Bank specific factors are included in *Bank characteristics*: logarithm of total assets ($size$), financial leverage ($leverage$), growth rate of total assets ($asset\_growth$), ratio of noninterest expense to net income ($inefficiency$), and the ratio of non-performing loans to net loans ($nploans$).

	Islamic banks					Conventional banks					
Variables	N	Mean	SD	Min	Max	N	Mean	SD	Min	Max	***P-value of t-test**
Informativeness proxies											
$Non\_SYNCHRO$	484	0.75	1.48	-1.93	5.47	1199	0.98	1.73	-2.11	5.47	0.01
$illiq$	453	1.28	9.13	0	147.42	1244	14.73	68.4	0	479.29	0.00
Return proxies											
R_t	447	0.02	0.44	-1.35	1.25	1,221	0.04	0.44	-1.35	1.25	0.54
$R3_t$	365	0.02	0.67	-1.8	2.08	1,006	0.06	0.65	-1.8	2.08	0.39
Earnings proxies											
$E3_t$	383	0.2	0.31	-0.8	1.29	1,146	0.23	0.29	-0.8	1.29	0.10
E_t	373	0.06	0.14	-0.53	0.39	1,087	0.09	0.1	-0.53	0.39	0.00
E_{t-1}	344	0.06	0.14	-0.53	0.35	1,030	0.09	0.1	-0.53	0.35	0.00
Bank characteristics											
$size$	451	15.34	1.25	11.03	18.33	1,296	15.11	1.76	11.03	18.43	0.01
$leverage$	451	0.14	0.17	0	0.77	1,296	0.13	0.13	0	0.77	0.34
$asset\_growth$	409	0.2	0.23	-0.29	1.2	1,178	0.15	0.2	-0.29	1.2	0.00
$inefficiency$	381	2.94	6.99	-4.75	54.87	1,084	3.43	7.43	-4.75	54.87	0.26
$nploans$	302	0.08	0.1	0	0.64	950	0.06	0.08	0	0.64	0.01

*The p-value of mean equality test between Islamic and conventional banks. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively. See Table AI for variable definitions.

Table II. Banks' stock return non_synchronicity and price informativeness.

This table presents the estimation results of Equation (2) using random effects technique, in which we regress stock return non_synchronicity ($Non\_SYNCHRO_{it}$), obtained from Equation (1), on a set of control variables. We consider conventional banks as the base group. In the first column, we regress the informativeness measure $Non\_SYNCHRO_{it}$ on Islamic bank dummy $Islamic\_D$, the set of bank and country characteristics including $size,\ leverage,\ asset\_growth,\ inefficiency,\ nploans,\ GDB\_growth,\ and\ interest\_rate$. In the second column, we add to the regression two dummies representing bank ownership structure; state-owned banks $state\_D$, and foreign-owned banks $foreign\_D$. In the third column, we add to the regression a dummy for cross-listed banks $cross\_Listed$. Year and country fixed effect dummies are included in the regressions, but are not reported in the table.

MODEL No.	(1)	(2)	(3)
VARIABLES	$Non\_SYNCHRO$	$Non\_SYNCHRO$	$Non\_SYNCHRO$
$Islamic\_D$	-0.6369***	-0.7428***	-0.7282***
	(-3.34)	(-3.90)	(-3.80)
$size$	-0.4587***	-0.4650***	-0.4241***
	(-6.89)	(-7.27)	(-5.81)
$leverage$	-0.3596	-0.4322	-0.4658
	(-0.60)	(-0.73)	(-0.77)
$asset\_growth$	0.5883**	0.5891**	0.5868**
	(2.40)	(2.42)	(2.40)
$inefficiency$	0.0058	0.0056	0.0060
	(1.09)	(1.05)	(1.14)
$nploans$	1.2211**	1.1907**	1.2108**
	(2.25)	(2.20)	(2.24)
GDP_growth	-0.0306***	-0.0306***	-0.0301***
	(-3.39)	(-3.39)	(-3.34)
$Interest\_Rate$	-0.0189	-0.0190	-0.0184
	(-1.18)	(-1.19)	(-1.16)
$foreign\_D$		0.4712***	0.5436***
		(2.73)	(3.09)
$state\_D$		-0.1228	-0.0894
		(-0.45)	(-0.33)
$cross\_listed\_D$			-0.3158
			(-1.36)
Constant	10.0904***	10.1339***	9.6372***
	(8.77)	(9.15)	(7.99)
$Observations$	1,031	1,031	1,031
$Number\ of\ banks$	108	108	108
$R-Squared$	0.579	0.594	0.596

Robust z-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table III. Banks' illiquidity ratio and stock price informativeness.

This table presents the estimation results of Equation (4) using random effects technique, in which we regress illiquidity measure ($illiq$), obtained from Equation (3), on a set of control variables. We consider conventional banks as the base group. In the first column, we regress the informativeness measure $illiq$ on Islamic bank dummy $Islamic\_D$, the set of bank and country characteristics including $size,\ leverage,\ asset\_growth,\ inefficiency,\ nploans,\ GDB\_growth,\ and\ interest\_rate$. In the second column, we add to the regression two dummies representing bank ownership structure; state-owned banks $state\_D$, and foreign-owned banks $foreign\_D$. In the third column, we add to the regression a dummy for cross-listed banks $cross\_Listed$. Year and country fixed effect dummies are included in the regressions, but are not reported in the table.

MODEL No.	(1)	(2)	(3)
VARIABLES	$illiq$	$illiq$	$illiq$
$Islamic\_D$	-8.2131*	-10.1362**	-9.3744**
	(-1.87)	(-2.21)	(-2.02)
$size$	-5.0153	-4.9138	-2.9197
	(-1.20)	(-1.18)	(-0.62)
$leverage$	20.3233	19.6337	18.4841
	(0.85)	(0.82)	(0.80)
$asset\_growth$	1.0902	0.9814	0.8476
	(0.04)	(0.03)	(0.03)
$inefficiency$	0.3087	0.3078	0.3214
	(0.82)	(0.81)	(0.86)
$nploans$	18.8346	19.1457	20.1947
	(0.79)	(0.80)	(0.85)
GDP_growth	0.3590	0.3629	0.3905
	(1.16)	(1.17)	(1.24)
$interest\_rate$	1.2880	1.2778	1.3096
	(1.28)	(1.27)	(1.28)
$foreign\_D$		8.8367	12.7327
		(1.07)	(1.53)
$state\_D$		-3.4721	-1.7344
		(-0.39)	(-0.19)
$cross\_listed\_D$			-14.2105
			(-0.89)
Constant	79.4659	76.3998	51.2691
	(1.08)	(1.05)	(0.64)
$Observations$	1,050	1,050	1,050
$Number\ of\ banks$	113	113	113
$R-Squared$	0.180	0.181	0.183

Robust z-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table IV. Banks' future earnings level and stock price informativeness.

This table presents the estimation results of Equation (5) using random effects technique. In column (1), we regress current return level of Islamic banks ($R_t\ of\ IB$), and in column (2) we regress current return level of conventional banks ($R_t\ of\ CB$). We regress each bank type current return level at year t (R_{it}) on each of the following: $E3_{it}$ the future earnings calculated as the sum of earnings for the year t+1, t+2, t+3 and scaled by equity market value at the beginning of year t, E_{it-1} is earnings of year $t-1$ scaled by equity market value at the beginning of year $t-1$, E_{it} is the current earnings in year t that are scaled by equity market value at the beginning of year t, $R3_{it}$ is the future returns which are the buy and hold returns over the three-year period that follow the current year and start after three months from the current year end. We also use a set of bank and country characteristics including $size,\ leverage,\ asset\_growth,\ inefficiency,\ nploans,\ GDB\_growth,\ and\ interest\_rate$, we add to the regression two dummies representing bank ownership structure; state-owned banks $state\_D$, and foreign-owned banks $foreign\_D$, and a third dummy for cross-listed banks $cross\_Listed$. Year and country fixed effect dummies are included in the regressions, but are not reported in the table.

MODEL No.	(1)	(2)
VARIABLES	$R_t\ of\ IB$	$R_t\ of\ CB$
$E3_w$	0.4139*	0.4169***
	(1.92)	(3.71)
E_{w-1}	-0.1555	-0.4749
	(-0.78)	(-1.56)
E_w	0.0627	1.3137**
	(0.19)	(2.54)
$R3_w$	-0.1058	-0.2131***
	(-1.51)	(-4.95)
$size$	-0.0087	-0.0086
	(-0.40)	(-0.53)
$leverage$	-0.2621	-0.3169*
	(-0.88)	(-1.78)
$asset\_growth$	0.5984**	0.1452
	(2.31)	(1.27)
$inefficiency$	-0.0063	0.0049*
	(-1.31)	(1.86)
$nploans$	-0.4096	-0.1633
	(-1.37)	(-0.87)
GDP_growth	-0.0106	-0.0036
	(-1.24)	(-0.86)
$interest\_rate$	-0.0701***	-0.0555***
	(-3.49)	(-5.83)
$foreign\_D$	0.0109	0.0322
	(0.09)	(1.00)
$state\_D$	-0.0329	-0.0942**
	(-0.73)	(-2.23)
$cross\_listed\_D$	-0.2013**	0.0071
	(-2.43)	(0.18)
Constant	0.1919	0.2037
	(0.55)	(0.81)
$Observations$	169	499
$Number\ of\ banks$	28	74
$R-Squared$	0.639	0.582

Robust z-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

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Table AI. Variable description

Variables	Description
IB	A dummy variable for Islamic bank.
CB	A dummy variable for traditional conventional bank.
Informativeness proxies	
$Non\_SYNCHRO$	Stock return non-synchronicity is computed as $Non\_SYNCHRO_i = Ln\,[(1 - R^2)\,/\,R^2]$, where R^2 is from a regression of bank's weekly return on industry and market returns.
$illiq$	Average of the weekly ratio between the stock return absolute value and the stock dollar trading volume (multiplied by 10^6).
Return proxies	
R_{it}	Current return calculated as bank i annual return for year t.
$R3_{it}$	Future return calculated as bank i buy and hold return over the three-year period following the year t.
Earnings proxies	
$E3_{it}$	Future earnings calculated as the sum of earnings for the year $t+1$, $t+2$, $t+3$, scaled by equity market value at the beginning of year t.
E_{it}	Current earnings calculated as earnings for year t, scaled by equity market value at the beginning of year t.
E_{it-1}	Lagged earnings calculated as earnings for year $t-1$, scaled by equity market value at the beginning of year $t-1$.

Variables	Description
Bank characteristics	
$size$	Logarithm of total asset
$leverage$	(Long term debt + Short term debt & Current portion) / total assets.
$asset\_growth$	(Total assets at t minus Total assets at t-1) / Total assets at t-1.
$inefficiency$	Noninterest Expense / Net Income
$nploans$	Non-Performing Loans / Net Loans

Table AII. Sample distribution

Panel A. Number of Islamic and conventional banks across 12 countries over 2006–2017 timespan.

	Islamic bank		Conventional bank	
Country	Banks	Observations	Banks	Observations
Bahrain	6	78	3	39
Bangladesh	8	104	25	325
Egypt	3	39	6	78
Indonesia	1	13	35	455
Jordan	1	13	11	143
Kuwait	4	52	5	65
Malaysia	1	13	0	0
Pakistan	4	52	11	143
Qatar	3	39	4	52
Saudi Arabia	4	52	0	0
Turkey	2	26	15	195
UAE	7	91	11	143
Total	44	572	126	1,638

Panel B. Ownership structure and cross-listing status of banks

	Islamic bank		Conventional bank	
Country	Banks	Observations	Banks	Observations
State-owned banks	1	13	12	156
Foreign-owned banks	13	169	21	273
Domestic-owned banks	30	390	93	1,209
Total	44	572	126	1,638
Cross-listed banks	7	91	29	377

Table AIII. Macroeconomic indicators across countries

This panel shows the mean value of macroeconomic indicators across 12 countries, over the 2006–2017 period.

Country	GDP_Per_Capita_Growth (%)	Domestic_Interest_Rate (%)
Bahrain	4.62	1.30
Bangladesh	6.36	5.00
Egypt	4.50	10.63
Indonesia	5.56	7.40
Jordan	4.38	6.33
Kuwait	3.17	2.12
Malaysia	4.98	3.04
Pakistan	4.31	9.88
Qatar	10.38	4.94
Saudi Arabia	3.59	2.34
Turkey	5.82	12.18
UAE	3.55	2.55

Table AIV. Correlation matrix

This table presents the pair-wise correlation between the variables used in our analysis.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
$Non\_SYNCHRO$	(1)	1													
$illiq$	(2)	0.2817*	1												
R_t	(3)	0.1812*	0.0096	1											
$R3_t$	(4)	0.0009	0.0058	-0.0906	1										
$E3_t$	(5)	-0.1193*	-0.1275*	0.2400*	0.3947*	1									
E_t	(6)	-0.0976	-0.0703	0.3306*	0.1534*	0.5115*	1								
E_{t-1}	(7)	-0.1517*	-0.0816	0.1140*	0.0756	0.2817*	0.5681*	1							
$size$	(8)	-0.3244*	-0.1743*	0.0087	0.0189	0.1307*	0.1852*	0.1853*	1						
$leverage$	(9)	-0.1280*	-0.0968	-0.0646	-0.0753	-0.0222	-0.0163	-0.0065	0.2091*	1					
$asset\_growth$	(10)	0.0689	-0.0258	0.2428*	-0.1402*	0.0684	0.0985	-0.018	-0.1710*	-0.0195	1				
$inefficieny$	(11)	0.1033	0.1666*	-0.0419	0.0049	-0.082	-0.0484	-0.1272*	-0.2236*	-0.0131	0.0275	1			
$nploans$	(12)	0.1114	-0.0235	-0.1134	-0.0582	-0.1439*	-0.3888*	-0.4556*	-0.1825*	0.0433	-0.1881*	0.0137	1		
GDP_growth	(13)	-0.1370*	-0.0134	-0.0338	-0.0153	-0.0369	0.024	0.1295*	-0.0817	-0.0122	0.2019*	0.0016	-0.1541*	1	
$interest\_rate$	(14)	-0.2437*	0.016	-0.1114*	-0.0063	0.0934	0.0459	0.0505	-0.1311*	0.0208	-0.0055	0.0613	0.0276	0.0952*	1

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