MANAGEMENT & ACCOUNTING REVIEW

C O N T E N T S

The Determinants of Islamic and Conventional Banking Profitability in Asian Countries

Nurhafiza Abdul Kader Malim[1♣] and Sarini Azizan
Universiti Sains Malaysia

ABSTRACT

This paper aims to examine the determinants of Islamic and conventional banking profitability in Asian countries. We estimated an econometric model using the Generalized Method of Moments (GMM) from 2009 to 2013 based on 162 conventional banks and 65 Islamic banks operating in a dual banking system. This paper extends prior literature by examining the profitability of Islamic banks and conventional banks using the more comprehensive determinants, especially in Asian countries where studies are observably limited. The results show that the factors influencing the profitability of Islamic and conventional banks are different. The profitability of Islamic banks is significantly affected by the size, management efficiency, inflation, market concentration, the rule of law and monetary freedom. For conventional banks, the key determinants include capital, size, credit risk, management efficiency, monetary freedom and economic growth. The findings provide policy implications for enhancing the profitability in a dual banking system.

KEYWORDS: Islamic banks; conventional banks; return on assets; Asian countries; GMM

[1♣] Corresponding Author: Nurhafiza Abdul Kader Malim, School of Management, Universiti Sains Malaysia, 11800 USM, Penang Malaysia; Email: fizanur@usm.my; Tel: 04-6535289

INTRODUCTION

The impact of the global financial crisis has emphasized the importance of maintaining the stability, profitability and sustainability of the banking system. A sound banking system plays an essential role for sustained growth (Olson and Zoubi, 2011). The banking sector is essential for economic development and a profitable banking system contributes significantly to economic growth (Dietrich and Wanzenried, 2014). Therefore, it is important to examine factors that drive the profitability of banking institutions. The banking sector in Asia provides a rich setting for investigation, as it operates using a dual banking system; conventional and Islamic system that transforms not only customers' experience but also the dynamics of the banking system in Asian countries.

Islamic banking institutions have demonstrated substantial growth in the global banking arena, with USD 1.5 trillion in 2016 mostly concentrated in the Middle East and Asian countries (IFSB, 2017). Given the rapid development of Islamic banks, its profitability is crucial to ensure financial sustainability. The rapid development of Islamic banking has attracted tremendous discussion and research from scholars, policymakers and practitioners to examine the behaviour of Islamic banks. Furthermore, there is an ongoing debate that Islamic banking mimics conventional banking systems in driving performance (Azmat, 2015). Therefore, it is crucial to examine the determinants that may have different impacts on profitability in Islamic and conventional banks.

The profitability issue has received considerable attention in the literature. Existing studies that have examined bank profitability are mostly focused on developed and emerging markets (Dietrich and Wanzenried, 2011; Tan 2016; Bouzgarrou, Jouida, and Louhichi, 2017; Arias, Maquieira, and Jara, 2019). Moreover, prior research is mainly based on conventional banks, and there is little attempt to consider Islamic banking perspectives. Yanikayya et al. (2018) found that the determinants of Islamic and conventional banks' profitability are different in the Organization of Islamic Cooperation Countries (OIC) and the United Kingdom, suggesting the limited evidence of Islamic banks in mimicking the practice of conventional banks. Azad et al. (2019) show the importance of fee-based income in determining the profitability of Islamic banks compared to

conventional banks in 20 Muslim majority countries. The Asian region has not accumulated adequate discussions, particularly in further understanding the key determinants of bank profitability, which operate in a dual banking setting. The scarce discussion concerning bank profitability in a dual banking system in the Asian region, raises the question of how internal and external determinants impact these banking systems.

This paper aims to examine the determinants of profitability between Islamic and conventional banks in Asian countries. This paper contributes to and extends prior literature by examining the profitability of Islamic banks and conventional banks using the more comprehensive determinants, especially in the context of Asian countries where studies are observably limited. Given the important role of Islamic banking in the global financial system, this paper provides insights on the differential for each potential profitability determinant of the dual baking system. This study differs from previous studies as it relies on a comparative analysis method, which uses a more robust method, the Generalized Method of Moments(GMM) to control the persistence of bank profitability, unobservable heterogeneity and endogeneity issues. The analysis of bank profitability determinants is essential to better understand the bank behaviour, operating in a dual banking system in Asian countries.

The remainder of this paper is organized as follows. Section 2 reviews the relevant literature. Section 3 describes the research methodology. Section 4 discusses the empirical results. Section 5 provides conclusion, discussion of policy implications and future research.

LITERATURE REVIEW

In the literature, research on the determinants of banking profitability is mainly based on the early study by Short (1979) showing that higher concentration contributes to higher profit rates. Bourke (1989) includes internal and external determinants of profitability such as overhead expenses, capital, liquidity, concentration, interest rates, ownership and inflation using return on asset (ROA) as one of the profitability measures. The empirical studies have focused on individual countries such as Athanasoglou, Brissimis and Delis, 2008; Sufian and Habibullah, 2010; Dietrich and Wanzenried,

2011; Tan, 2016) and cross-countries such as Molyneux and Thornton, 1992; Demirguc-Kunt and Huizinga, 1999; Dietrich & Wanzenried, 2014; Menicucci and Paolucci, 2016; Maudos, 2017; Djalilov and Piesse, 2016; Bouzgarrou et al., 2017; Arias et al., 2019).

The widely researched work on factors that influence bank profitability help establish key determinants in estimating banks' profitability. Prior literature provides evidence that both internal and external determinants to explain the variance in bank profitability. Internal determinants include size, capital, credit risk, market power and ownership structure. External determinants include economic growth rate, inflation rate, regulation and institutional qualities. The methods used in the previous studies vary from accounting ratios, data envelopment analysis (DEA), stochastic frontier analysis (SFA), fixed effects, random effects and GMM.

The findings by Athanasoglou et al. (2008) show that banks that have higher exposure to credit risk, tend to be associated with lower profitability. Further, the findings by Bouzgarrou et al. (2017) suggest that foreign banks are more profitable than domestic banks. Maudos (2017) examined the income structure of bank profitability from European countries and concludes that banks with a more diversified income structure are less profitable during a crisis. In a study on China banks, Tan (2016) found evidence indicating that competition has no significant impact on bank profitability. In another study, Arias et al. (2019) showed a positive association between higher quality of legal protection, law enforcement and regulations on profitability.

Profitability studies in Islamic banking such as Bashir (2003) and Sufian and Abdul Majid (2015), who focused their analyses on Islamic banking profitability in MENA banking sectors, found that capitalization has a positive impact on bank profitability levels. Results from these studies suggest that the higher the level of capitalization, the more likely it would lead to higher profitability. In more recent years, as the demand for Islamic banking products is growing specifically, post-financial crisis, the higher it is the motivation to do a comparative analysis on the two banking systems: conventional and Islamic banking. Among research work that compared bank profitability determinants for conventional and Islamic banks are, Khasawneh (2016) in MENA banking system, Sun, Mohamad and Ariff

(2017) and Yanikkaya, Gümüş, & Pabuçcu (2018) in the OIC countries. Sufian and Abdul Majid (2015) found that financial and economic freedom contribute positively to Islamic bank profitability, indicating that lower (government) intervention in the financial system leads to higher bank profitability. The findings by Khasawneh (2016) show that cost to income ratio, overhead ratio, crisis, economic growth are essential factors to Islamic bank's profitability in the MENA region. Findings by Yanikkaya et al. (2018) indicate that the financing structure based on risk sharing products increases the profitability of Islamic banks.

To summarize, evidence from various empirical studies related to bank profitability determinants provide mixed results and are inconclusive, which render further robust investigations.

METHODOLOGY

Sample Description

The sample comprised of 65 Islamic banks and 162 conventional banks from 10 Asian countries. We selected the sample based on several criteria. First, we included Asian countries with a dual banking system. Second, we included countries with shares of global Islamic banking assets of more than 1 percent. Based on IFSB (2017), the shares are as follows. Bangladesh(1.8%), Bahrain (1.7%), Indonesia (1.6%), Kuwait (6.1%), Malaysia (9.3%), Pakistan(1.1%), Qatar (5.8%), Saudi Arabia (20.6%), Turkey (2.9%), United Arab Emirates (9%). Third, we focus on the sample after the global financial crisis period(2007-2008) from 2009 to 2013. We obtained the required data for our analyses from Bankscope, World Development Indicators, World Governance Indicators and Heritage Foundation. Bankscope database provides the banks' financial information from across the globe. World Development Indicators provide macroeconomic data, whereas World Governance Indicators and the Heritage Foundation provide for the banks' institutional-governance data.

Empirical Model

The empirical specification is based on the following equation:

$$ROA_{it} = \alpha_i + \beta_1 ROA_{it\text{-}1} + \beta_2 B_{it} + \beta_3 M_{it} + \beta_4 I_{it} + \varepsilon_{it} \qquad (1)$$

Where ROA is the return on assets, i and t represent bank and time period, respectively. The determinants include bank-specific(B), macroeconomic and market-specific(M) and institutional-governance(I) factors. We included lagged levels of the dependent variable ($ROA_{it\text{-}1}$) to capture the persistency of the profits. Table 1 describes the variables used with the expected sign.

Table 1: Description of the Variables

Variables	Description	Source	Expected sign
Return on Assets (ROA) (Dependent Variable)	Net income over total assets	Bankscope	
Bank-Specific Determinants			
Management efficiency	Total cost over total income	Bankscope	-
Capital	Total equity over total assets	Bankscope	+
Bank size	Logarithm of total assets	Bankscope	-
Credit risk	Loans loss reserves over gross loans	Bankscope	+
Macroeconomic and Market-Specific Determinants			
GDP Growth	Annual GDP growth rate	World Development Indicators (WDI)	+
Inflation	Annual inflation rate	World Development Indicators (WDI)	+
Market concentration	Herfindahl–Hirschman Index (Sum of squared market shares in terms of total assets)	Bankscope	+
Institutional-governance Determinants			
Rule of law	Index reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	World Governance Indicators	+

Monetary Freedom	Monetary freedom combines a measure of price stability with an assessment of price controls. A higher score indicates greater price stability without microeconomic intervention	Heritage Foundation	+

Method of Estimation

For analysis, the empirical model was estimated using the System General Method of Moments (GMM) developed by Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998). The advantages of using the System GMM are it takes into account the time persistent cross-section information and controls for unobservable heterogeneity (such as managerial style, attitude towards risk and internal policies) and autocorrelation problems to produce consistent and efficient estimates. The System GMM also helps solve the endogeneity problem, particularly in bank-specific characteristics where unobserved heterogeneity evolves over time. We performed two diagnostic tests, namely the Sargan test for over-identifying restrictions and the autocorrelation test to determine the consistency and validity of the GMM estimator.

Determinants of Bank Profitability

Profitability was measured by return on assets (ROA). Previous studies that have used ROA to measure profitability, such as Olson & Zoubi (2011), Dietrich and Wanzenried (2014) and Yanikkaya et al. (2018). ROA reflects the ability of banks to manage their assets to generate profits.

Bank-specific Determinants

Size: To measure bank size, we used the logarithm of total assets. Larger bank size improves profitability due to economies of scale (Menicucci and Paolucci, 2016). We expect that size has a positive effect on profitability.

Management Efficiency: The cost-to-income ratio measures the impact of management efficiency on profitability. Dietrich and Wanzenried (2014) argued that the more efficient bank contributes to higher profitability. We expect a negative effect of management efficiency on profitability.

Capital: We used the ratio of equity over total assets as a measure of capital. Banks with higher capital tend to involve in prudent lending that enhances profitability (Tan, 2016). Thus, we expect a positive impact of capitalization on profitability

Credit risk: The ratio of loan loss reserves over gross loans was used as a proxy to measure credit risk. Banks with higher exposure to credit risk lead to lower profitability (Dietrich and Wanzenried (2011). We, therefore, expected that credit risk has a positive effect on profitability.

Macroeconomic and Market-specific Determinants

GDP Growth: The demand for loans tends to be higher during the economic boom, leading to higher profitability (Khasawneh, 2016). Thus, we expected economic growth to have a positive impact on profitability.

Inflation: We used the annual inflation rate in the analysis. During inflation, bank management adjusted the interest rate to achieve higher profits (Dietrich and Wanzenried, 2014). We expected a positive impact of inflation on profitability.

Market concentration: To measure market concentration, we used the Hirschman-Herfindahl index (HHI). HHI is the sum of squared market shares in terms of total assets. It reflects the degree of concentration where the higher the HHI, the greater shares own by a few banks in the market. The structure conduct performance (SCP) hypothesis argues that higher concentration leads to greater market power, leading to higher profits (Tan, 2016). Therefore, a positive impact of market concentration on profitability is expected.

Institutional-governance Determinants

Rule of law: We incorporated in our analysis the rule of law as the index reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. The rule of law reflects the degree of enforcement of laws and contracts where a greater degree of the rule of law leads to higher

profitability (Arias et al., 2019). Thus, we expected the rule of law to have a positive impact on profitability.

Monetary Freedom: We included monetary freedom as a higher score that dgreater price stability without microeconomic intervention (Sufian and Abdul Majid, 2015). We expected that higher monetary freedom would increase bank profitability.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 2 shows the descriptive statistics between Islamic and conventional banks. On average, conventional banks have a significantly larger ROA at 1.36, higher than Islamic banks, which is at 0.5. From Table 2, both conventional and Islamic banks are relatively similar in terms of size, measured by the total assets (Size). Therefore, it is self-explanatory that the wide dispersion in the ROA of conventional and Islamic banks is caused by the significant differences in their total income. Despite that, Islamic banks show relatively better performance than their counterparts in managing (1) the operational cost, as indicated by the higher management efficiency ratio (Management Efficiency) and (2) risk, as indicated by the lower credit risk ratio (Credit Risk) and the higher capital ratio (Capital).

Table 2: Descriptive Statistics

	Conventional Banks			Islamic Banks		
Variables	Obs.	Mean	Std. dev	Obs.	Mean	Std. dev
Return on Asset (ROA)	803	1.36	1.51	305	0.50	2.25
Capital	803	12.54	6.13	305	13.08	16.54
Management Efficiency	803	52.75	33.77	305	59.59	28.96
Credit Risk	803	4.29	4.36	305	3.94	4.81
Size	803	15.29	1.69	305	15.07	1.37
HHI	803	1085.83	435.07	305	1167.30	558.11
Inflation	803	5.36	3.51	305	4.01	3.48
GDP Growth	803	4.63	3.41	305	4.56	3.88
Monetary Freedom	803	72.18	4.99	305	73.67	5.80
Rule of Law	803	-0.17	0.59	305	0.14	0.58

Empirical Results

Table 3 and Table 4 present the results of the System GMM analyses for Islamic banks and conventional banks' profitability, respectively. The number of banks, observations, instruments and Sargan and autocorrelation tests for Islamic and conventional banks are provided at the end of the tables.

As shown in Tables 3 and 4, the lagged ROA indicating persistency of profitability is significant across Islamic and conventional banks. For Islamic banks specifically, the previous year's profitability explains close to 50 percent of the current profitability. Though for conventional banks, the coefficient of the lagged ROA is observed to be relatively weaker. These results are robust and consistent, based on autocorrelation (AR) and Sargan tests. Both tests on Islamic and conventional banks, showing insignificant results for AR (2), indicating no second-order autocorrelation. For the Sargan test, in which the test used to check for the misspecification of the instruments and we found insignificant results for both Islamic and conventional tests, suggesting the System GMM models used in the analyses of this study are correctly specified.

Table 3: Determinants of Profitability in Islamic Banks

VARIABLES	(1)	(2)	(3)	(4)
L.ROA	0.409***	0.401***	0.396***	0.434***
	(0.017)	(0.019)	(0.017)	(0.019)
Bank-specific determinants				
Capital	0.005	0.005	0.007	0.008
	(0.006)	(0.005)	(0.006)	(0.009)
Management Efficiency	-0.038***	-0.039***	-0.036***	-0.038***
	(0.002)	(0.002)	(0.002)	(0.002)
Credit risk	-0.026*	-0.019	-0.019	-0.012
	(0.015)	(0.016)	(0.016)	(0.016)
Size	-0.043	0.117	0.190*	0.377***
	(0.070)	(0.097)	(0.102)	(0.079)
Macroeconomic and Market-Specific determinants				
HHI	-0.002***	-0.001***	-0.002***	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)
Inflation		0.048***	0.049***	0.029***
		(0.012)	(0.012)	(0.011)

GDP growth		0.005	0.002	0.006
		(0.006)	(0.006)	(0.006)
Institutional-governance determinants				
Monetary freedom			-0.024***	
			(0.005)	
Rule of law				-2.352***
				(0.254)
Constant	5.246***	2.286	3.473**	-2.086*
	(1.112)	(1.610)	(1.617)	(1.258)
Number of observations	286	286	286	286
Number of banks	65	65	65	65
Number of instruments	36	38	39	39
Sargan test	0.182	0.247	0.139	0.606
AR(1) p-value	0.031	0.033	0.033	0.027
AR(2) p-value	0.552	0.481	0.460	0.449

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 4: Determinants of Profitability in Conventional Banks

VARIABLES	(1)	(2)	(3)	(4)
L.ROA	0.237***	0.207***	0.215***	0.209***
	(0.043)	(0.041)	(0.039)	(0.045)
Bank-specific determinants				
Capital	0.079***	0.082***	0.080***	0.072***
	(0.010)	(0.011)	(0.011)	(0.011)
Management efficiency	-0.026***	-0.026***	-0.025***	-0.026***
	(0.002)	(0.002)	(0.002)	(0.001)
Credit risk	-0.020	-0.024*	-0.029**	-0.022
	(0.015)	(0.014)	(0.014)	(0.015)
Size	-0.184***	-0.172**	-0.126	-0.150
	(0.067)	(0.073)	(0.079)	(0.092)
Macroeconomic and Market-Specific determinants				
HHI	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Inflation		0.011	0.013	0.009
		(0.008)	(0.008)	(0.008)
GDP growth		0.010*	0.005	0.010*
		(0.005)	(0.006)	(0.005)

Institutional-governance determinants			
Monetary freedom		-0.022***	
		(0.008)	
Rule of law			-0.248
			(0.209)
Constant	4.644***	4.510***	5.277***	4.149***
	(1.119)	(1.203)	(1.280)	(1.560)
Number of observations	796	796	796	796
Number of banks	162	162	162	162
Number of instruments	36	38	39	39
Sargan test	0.119	0.118	0.180	0.087
AR(1) p-value	0.005	0.007	0.007	0.006
AR(2) p-value	0.836	0.789	0.982	0.793

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Bank-specific Determinants

The results show that the capital has a positive and significant impact on conventional bank profitability; however, they show insignificant impact on Islamic banks. This result is similar to Tan's (2016) findings suggesting that higher levels of capital reduce borrowing cost, further increasing bank profitability. The findings suggest that better-capitalized banks tend to have higher profits.

Size has a significant and positive effect on Islamic bank profitability but has a negative effect on conventional bank profitability. The positive effect of size on bank profitability indicates that bigger Islamic banks have higher economies of scale and product diversification advantages that lead to higher profitability. For the negative effect of size on conventional banks, Djalilov and Piesse (2016) argue that larger a bank size tends to have higher operational costs, leading to lower profitability.

Management efficiency measured by the cost-to-income ratio shows a negative association with the profitability in both Islamic and conventional banks. These results suggest that the higher the operating costs, the lower the profitability of the banks. Weak management practices on cost control, may increase bank operating costs and, subsequently, reduce profits.

These results are in line with Dietrich and Wanzenried (2014), which had similar findings indicating that efficient cost management is necessary for increasing profits. Thus, the results highlight the importance of improving cost control and overall management practice to have a higher profitability ratio in these institutions.

Credit risk has a negatively significant impact on Islamic and conventional bank profitability though the relationship is weaker, less supported for Islamic banks. It is plausible that, on the average, banks have greater exposure to credit risk in the post-crisis period due to the economic downturn. As a consequence, this led to lower profitability, particularly in conventional banks.

Macroeconomic and Market-specific Determinants

We found that GDP growth has a positive and significant impact on profitability of conventional banks. High economic growth creates more investment opportunities and enables conventional banks to attract more deposits and financing and subsequently generate higher profits. The GDP growth shows an insignificant relationship with Islamic banks, which is inconsistent with the hypothesis. The plausible explanation for this is that conventional bank products may be easily accessible than Islamic banks when the economy is booming. The result is consistent with Khasawneh (2016), indicating that during an economic boom, the demand for credit is higher leading to higher loan levels, interest revenue and profitability.

The results of the inflation rate show a positive and significant relationship with the profitability of Islamic banks. In contrast, inflation rate appears to be an insignificant determinant of profitability in conventional banks. The higher inflationary environment is associated with a higher financing rate leading to higher Islamic bank profitability. The finding is consistent with Dietrich and Wanzenried (2014) and Djalilov and Piesse (2016), suggesting that where inflation is anticipated, banks can adjust the interest rates that lead to higher conventional bank profitability.

Market concentration, captured by Herfindahl Index (HHI) has a negative and significant impact on Islamic bank profitability. In contrast, market concentration has no significant impact on the profitability of

conventional banks. Greater bank concentration might result from the tougher competition in the banking industry, leading to lower profitability (Boone and Weigand, 2000).

Institutional-governance Determinants

For institutional-governance factors, the results show a significantly negative association between monetary freedom and profitability of both types of banks. The findings suggest that higher monetary freedom (less government intervention) tends to lead to lower profitability. The lower the government intervention in stabilizing the pricing in the market, the lower the probability for banks to earn higher profits. The negative impact of the monetary freedom documented in this study supports higher government intervention in the market on product pricing and exchange rate controls to promote a higher profitability rate for Islamic and conventional banks. The results are similar to Djalilov and Piesse (2016), indicating that government intervention is necessary for price control and monetary policy. However, the result is different from the findings by Sufian and Abdul Majid (2015), who found the insignificant effect of monetary freedom on Islamic banks' profitability in MENA region. The difference in the results probably based on the different samples used as our analysis focused on Asian countries.

Analyses on the rule of law indicate a negatively significant relation to Islamic bank profitability, which is against the prediction; however show an insignificant relationship to conventional banks. The complexity of the regulations and legal systems can increase the costs of doing business, which leads to a higher cost burden for Islamic banking institutions and lowering their profit margins. Furthermore, Islamic banking products are also generally more complicated, as it requires higher legal documentation than conventional banks, and their approval process often involves higher legal costs and sensitively linked to aspects of law and contracts.

CONCLUSION

This paper presents new evidence on the determinants for the profitability in the dual banking system in Asian countries. The findings suggest that higher capitalization levels and management efficiency lead to higher

profitability, and these results are robust to both types of the banking system: Islamic or conventional. We find evidence that certain determinants explain Islamic banks' profitability, but not in conventional banks and vice versa. Specifically, we find that size has a significant positive impact on Islamic banking profitability but has a significant negative impact on conventional banks. While higher credit risk is associated with lower profitability in conventional banks, higher market concentration leads to lower Islamic banks' profitability. Favourable economic growth seems only to improve conventional banks' profitability; however, it has no impact on Islamic banks' profitability. A higher inflation rate is also explanatory to the variance in Islamic banks' profitability, but not to conventional banks. For institutional-governance indicators, the effect of monetary freedom and the rule of law on both Islamic and conventional banks' profitability is negative, providing support to the importance of institutional-governance quality in the dual banking system.

This paper contributes to and extends prior literature by examining Islamic banks' profitability and conventional banks using the more comprehensive determinants, especially in Asian countries where studies are observably limited. It is pertinent to understand the relationship link between bank-specific, macroeconomic and institutional factors given the different nature of operations in the dual banking system. We utilized a different methodology compared to previous studies by using GMM to capture the time persistent cross-section information and controls for unobservable heterogeneity and endogeneity problems.

The findings highlight several policy implications. First, it is necessary for the Islamic and conventional banks to strengthen their managerial cost efficiency in increasing profitability. Second, better credit risk management practices are essential to improve conventional banks' profitability. Third, government intervention plays a critical role in promoting competition between both banking systems and, subsequently, profitability. Our findings suggest that in current policy settings and legal systems, Islamic banks are mainly negatively affected, and conventional banks tend to gain greater financial benefits due to having a higher competitive advantage. A stable monetary policy from the government helps to motivate firms and individuals to use more banking products, leading to higher banks' profitability. It is also crucial for both bank systems to continue to enhance

diversification in their bank products and financing portfolios to offer better quality financial services to customers to ensure financial sustainability for the institutions.

For future research, it will be interesting to investigate the effect of Covid-19 on the profitability of Islamic and conventional banks. This study has a limitation as it only focused on the dual banking system in Asian countries from 2009 to 2013. Future research can expand our study in the global context and over a wider period with other estimation techniques.

REFERENCES

Arellano, M., Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, *58*, 277–297.

Arellano, M., Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, *68*, 29–51.

Arias, J., Maquieira, C., & Jara, M. (2019). Do legal and institutional environments matter for banking system performance? *Economic Research-Ekonomska Istrazivanja*, *0*(0), 1–26. https://doi.org/10.108 0/1331677X.2019.1666023

Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, *18*(2), 121–136. https://doi.org/10.1016/j.intfin.2006.07.001

Azad, A.S.M.S, Azmat A., Hayat A. (2019). What determines the profitability of Islamic banks: Lending or fee? International Review of Economics and Finance, https://doi.org/10.1016/j.iref.2019.05.015

Azmat, S., Skully, M., Brown, K. (2015). Can Islamic banking ever become Islamic? Pacific-Basin Finance Journal, 34, 253-272. http://dx.doi. org/10.1016/j.pacfin.2015.03.001

Bashir, A. M. (2003). Determinants of profitability in Islamic banks: some evidence from the Middle East. *Islamic Economic Studies*, *11*(1), 31–57.

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, *87*, 115–143.

Boone, J., & Weigand, J. (2000). Measuring competition in the Dutch manufacturing sector: How are cost differentials mapped into profit differentials. CPB Working Paper No. 131, Den Haag.

Bourke, P. (1989). Concentration and other determinants of bank profitability in Europe, North America and Australia. *Journal of Banking & Finance*, *13*(1), 65–79. https://doi.org/10.1016/0378-4266(89)90020-4

Bouzgarrou, H., Jouida, S., & Louhichi, W. (2017). Bank profitability during and before the financial crisis: Domestic vs. foreign banks. *Research in International Business and Finance*. https://doi.org/10.1016/j.ribaf.2017.05.011

Demirguc-Kunt, a., & Huizinga, H. (1999). Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence. *The World Bank Economic Review*, *13*(2), 379–408. https://doi.org/10.1093/wber/13.2.379

Dietrich, A., & Wanzenried, G. (2011a). Determinants of bank profitability before and during the crisis: Evidence from Switzerland. *Journal of International Financial Markets, Institutions & Money*, *21*, 307–327.

Dietrich, A., & Wanzenried, G. (2011b). Determinants of bank profitability before and during the crisis: Evidence from Switzerland. *Journal of International Financial Markets, Institutions and Money*, *21*(3), 307–327. https://doi.org/10.1016/j.intfin.2010.11.002

Dietrich, A., & Wanzenried, G. (2014). The determinants of commercial banking profitability in low-, middle-, and high-income countries. *The Quarterly Review of Economics and Finance*, *54*(3), 337–354. https://doi.org/10.1016/j.qref.2014.03.001

Djalilov, K., & Piesse, J. (2016). Determinants of bank profitability in transition countries: What matters most? *Research in International Business and Finance*, *38*, 69–82. https://doi.org/10.1016/J.RIBAF.2016.03.015

IFSB. (2017). Islamic Financial Services Industry Stability Report.

Khasawneh, A. Y. (2016). Vulnerability and profitability of MENA banking system: Islamic versus commercial banks. *International Journal of Islamic and Middle Eastern Finance and Management*, *9*(4), 454–473. https://doi.org/10.1108/IMEFM-09-2015-0106

Maudos, J. (2017). Income structure, profitability and risk in the European banking sector: The impact of the crisis. *Research in International Business and Finance*, *39*, 85–101. https://doi.org/10.1016/j.ribaf.2016.07.034

Menicucci, E., & Paolucci, G. (2016). The determinants of bank profitability: empirical evidence from European banking sector. *Journal of Financial Reporting and Accounting*, *14*(1), 86–115. https://doi.org/10.1108/jfra-05-2015-0060

Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability: A note. Journal of Banking and Finance, 16(6): *Journal of Banking & Finance*, *16*(6), 1173–1178.

Olson, D., & Zoubi, T. A. (2011). Efficiency and bank profitability in MENA countries. *Emerging Markets Review*, *12*(2), 94–110. https://doi.org/10.1016/j.ememar.2011.02.003

Short, B. K. (1979). The relation between commercial bank profit rates and banking concentration in Canada, Western Europe, and Japan. *Journal of Banking and Finance*, *3*(3), 209–219. https://doi.org/10.1016/0378-4266(79)90016-5

Sufian, F., & Abdul Majid, M. Z. (2015). The Nexus between Economic Freedom and Islamic Bank Profitability in the MENA Banking Sectors. *Global Business Review*, *16*(5S), 58S-81S. https://doi.org/10.1177/0972150915601256

Sufian, F., & Habibullah, M. S. (2010). Does economic freedom fosters banks' performance? Panel evidence from Malaysia. *Journal of Contemporary Accounting & Economics*, *6*(2), 77–91. https://doi.org/10.1016/j.jcae.2010.09.003

Sun, P. H., Mohamad, S., & Ariff, M. (2017). Determinants driving bank performance: A comparison of two types of banks in the OIC. *Pacific Basin Finance Journal*, *42*, 193–203. https://doi.org/10.1016/j.pacfin.2016.02.007

Tan, Y. (2016). Journal of International Financial Markets , Institutions & Money The impacts of risk and competition on bank profitability in China. *"Journal of International Financial Markets, Institutions & Money," 40*, 85–110. https://doi.org/10.1016/j.intfin.2015.09.003

Yanikkaya, H., Gümüş, N., & Pabuçcu, Y. U. (2018). How profitability differs between conventional and Islamic banks: A dynamic panel data approach. *Pacific Basin Finance Journal*, *48*(July 2017), 99–111. https://doi.org/10.1016/j.pacfin.2018.01.006