



# **Banking and Economic Growth: Comparison between Islamic and Conventional Banking in Malaysia**

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## **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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## **ABSTRACT**

This study investigates the contribution of conventional banking and Islamic banking to economic growth in Malaysia. Return on assets, return on equity representing the profitability, total deposit, representing bank development, and several indicators such as total government expenditure, trade openness, and gross fixed capital formation were independent variables. In contrast, the dependent variable was GDP per capita. The study utilised secondary data collected from the Fitch Connect database and Datastream database. This study used a sample of 10 Islamic banking and 10 Conventional banking. The study found that the Islamic banking system variable can influence Malaysia's economic growth. ROA and Ltdep are found significant and have positive effect to economic growth, but ROE has adverse effects. On the other hand, the results show that ROA in Conventional bank does not have a relationship with economic growth. However, other banking indicators such as ROE and total deposit are significant to economic growth. Based on the ROE results, ROE Islamic bank contributes more to economic growth than Conventional bank because the percentage that contributes to the decreases of economic growth for Islamic banks is lesser than Conventional bank. The results also showed that Islamic banking provides an efficient channel for productive resources and monitors the use of the funds by the participation of business ventures, leading to bank profitability and then economic growth. This study also stressed on total

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deposit indicator as a proxy to bank development. This study found that total deposit for the both banking system is significant to economic growth. However, the contribution of banking development in conventional banking is much better than by Islamic banking. However, the gap of differences is too small, which shows that Islamic deposits can cope with conventional deposits.

*Keywords: Conventional banking; economic growth; Islamic banking.*

## 1. INTRODUCTION

History has recorded that traditional banking operation had been practised since earlier civilisation long before 12 century AD in Italy, Venice, Florence, Genoa and Lucea. Based on the historical evidence, finance and banking operation had happened in pre-history time in Greece, Rome and Mesopotamia. However, most economists consider the 12 AD century was the first bank be introduced [1,2] Since that time, the financial system and banking play an essential role in economic activities, especially in the modern era. In the late 18 century, the emerging financial market and financial system have undergone a substantial change because of industrialisation. Banks have become a critical part of the financial system, which played an essential role in economic development. Indeed, there is a relationship between the financial system and economic development in general [3-9].

The complexity of financial development and its relationship to economic growth has attracted many researchers to find the relationship based on theoretical and empirical works. It began with the work of Schumpeter [10] who supported the idea that there is a positive relationship between a bank and economic growth. Bank will provide credit to entrepreneur, which it will lead to innovative business and increasing productivity. However, this view has been challenged by Robinson [11] arguing that financial development follows economic growth. The study of finance-growth nexus had been expanded and heavily debated in literature since then. The pioneering studies on this area in 19 century continued by Patrick [12] Goldsmith [13] McKinnon [14] Shaw [15] Lucas [16] Stern [17] Romer [18] Demetrides and Hussein [19] and Greenwood and Smith [20] Generally, the works of literature have documented four types of finding in the studies in term of relationships between financial development and economic growth.

The first relationship is supply-leading, where financial development leads to economic growth, as evidenced by Schumpeter [10] Goldsmith [13]

McKinnon [14] and Shaw [15] The second is demand following, where finance does not exert a causal impact on growth as advocated by Robinson [11] Patrick [12] and Romer [21] The third is the bi-directional relationship that shows interdependency between financial development and economic growth. This relationship is supported by Demetriades and Hussein [12] and Greenwood and Smith [20] The fourth is the absence of causality between financial development and economic growth, as Lucas [16] and Stern [17] advocated. Based on the supply-leading relationship, it can be concluded that financial development is one of the critical determinants of economic growth. Activities of the banks increase the mobilisation of productive savings, allocate resources inefficiently, and stimulate technological innovation. However, because of banking complexity and interdependence with other spheres of economic development, its effect on economic growth is unclear, as pointed by the second, third and fourth relationship.

During the last three decades, Islamic finance and banking have seen rapid growth and a growing segment of the global finance industry. The liberalisation of financial regulations, financial globalisation, changes in technology, product innovation, the birth of several new Islamic markets, and the most notable of them is the financial crises stimulate the spread of Islamic finance [22] The first foundation of Islamic banking started from the introduction of Nasser Social Bank Cairo in 1972. The Islamic banking system is different compare to the conventional banking system. Their foundations are antithetical to each other and emerged as competitive and capable of working successfully as a substitute for the conventional banking system. Islamic finance is a financial system that aims to fulfil the teaching of the Holy Quran based on ethical finance, which concerned the impact of financial decisions on society and attracts ethically sensitive investors. It was intended to meet Muslim customers' specific religious requirements; however, Islamic finance is not restricted to Muslims only, the user can be non-Muslim and Muslim.

Islamic banking emanated from Islam which discourages the concentration of wealth in a few hands; thus, the importance of the Islamic banking system is to bridge the gap between the rich and the poor by modifying the distribution of wealth and economic resources in favour of the less fortunate. Financial intermediation is the principal function of the modern banking system and is probably the main reason for commercial banks' existence. Banks collect funds and allocate the funds in any form, such as in the form of lending. Islamic banks are also financial intermediaries since they are practically similar to Conventional bank but operate with different ways of distributing the fund to entrepreneurs and consumers [23] According to Badun [24] differences in financial sector development may operate different policies, characteristics, and implementation.

## **2. THE DIFFERENCES BETWEEN CONVENTIONAL BANKING AND ISLAMIC BANKING**

The financial system provides special functions and service by supporting investment through mobilisation of households saving, allocation of resources and economic development. The development of the financial system explains economic growth via its influence on allocation decisions that foster economic growth. Financial intermediaries carry out five primary channels through which finance may influence growth. (i) providing information about possible investment by facilitating the trading, hedging, diversifying, and pooling of risk; (ii) monitoring firms and exerting corporate governance; (iii) allocate resources; (iv) mobilising savings. Each of these financial functions may influence saving and investment decisions and economic growth [25]

Islamic banking differs significantly from conventional banking. The fundamental difference lies in the fact that Islamic banking refers to Islamic principles and practices while conventional banking refers to purely economic principles. Islamic banking can be defined as a financial institution based on Islamic law principles (also known Shariah) and guided by Islamic economics. The Shariah involves a series of prohibitions as well as prescriptions regarding the practice of finance. Islamic banking refers to a system of banking or banking activities that is consistent with Islamic law and principles. As a matter of fundamental principle, Shariah law forbids any practices that are considered unfair and exploitative which the objective to promote

and encourages the welfare of the population. The aim of Shariah is based on the interest of man. Prohibition of riba is not merely for the sake of prohibition, but rather for the interest of man or goods to humanity. There are five main characteristics of Islamic banking. The first characteristic of Islamic banking is based on the concept that interest is strictly forbidden. This concept is different from conventional banking, in which they are practising interest in their financial system. Islam forbid interest or known as riba. The literal meaning of riba is "an excess". In term of terminology, riba is defined as an increase or excess which accrues to the owner in an exchange or sale of a commodity, or under a loan arrangement, without providing equivalent value to the other party.

There are a few reasons that interest is forbidden. First, transactions that are based on interest are believed to violate the equity of a business. In business, the outcome of any enterprise is uncertain. Yet, in conventional banking models, a borrower is obliged to pay the agreed rate of interest even if a loss is incurred. In Islam, this is unjust. Second, it is held that an interest-based system is inflexible, causing wide-scale bankruptcies [26] The second characteristic is the prohibition of gharar (excessive uncertainty) and maysir (excessive risk or gambling). Islamic banking bans speculation, which is increasing one's wealth by chance rather than productive effort. Maysir refers to unnecessary uncertainties which not part of everyday life, such as gambling. Gharar can be referred to as doubtful contracts, such as undertaking a business venture without sufficient information or taking excessive risk. The third characteristic, Shariah law, prohibit any involvement of haram (illegal) activities. Islamic banking only allows finance on halal (legal) activities. Thus alcohol, pork, non-halal related product or activities and entertainment such as gambling, pornography and casino are prohibited. Fourth, the profit and loss sharing (PLS) principle was an essential Islamic finance feature. The provider of capital funds (lenders) and the entrepreneur (borrowers) share business risk in return of sharing profits and losses. PLS promote equal distribution of risk and cooperation between the providers of funds (investors) and the users of funds (entrepreneurs). Fifth, the principle for all transactions have to be backed by a real economic transaction that involves a tangible asset. This characteristic has been supported by Alio and Aburime [27] which stated that the prohibition of interest, low consumer lending, profit and loss sharing and real high

sector investing are primary characteristics of Islamic banks. Islamic bank is an institution practically similar to a conventional bank but operates with the objective, principles and practices that conform to Islamic jurisprudence. There are various products developed and provided by the Islamic banking system, such as Murabaha, Mudaraba, Musharakah, Ijara, Bay Salam, etc, in order to provide financial service that is compatible with Islamic teaching.

### **3. THE GROWTH OF ISLAMIC BANKING**

Islamic banking is an alternative to the conventional banking system and managed to operate with the conventional banking system. In some countries, such as Iran and Pakistan, Islamic banking became mainstream financial institutions. In Malaysia, Islamic banking exists alongside conventional banking. Islamic banking recorded 0.96% of global commercial banking assets. In 2014, the growth of the Islamic banking rate was 50% faster than the overall banking sector in several core markets [28] The total number of Islamic financial institutions operating globally has shown an increasing trend, and the Islamic finance asset grew by 9.4% to reach \$1.814 trillion in 2014. The Islamic banking growth continues to be positive. The global Islamic banking service industry reached an overall total value of USD1.88 trillion in 2015. Malaysia, Turkey, Iran and Indonesia have been an important reason for the modest performance of Islamic banking. Islamic banking asset has contributed 209.3 billion, while Malaysian Islamic banking assets represent more than 9% of the global industry. In general, the growth rates of Islamic banking were robust and at double-digit growth rates for most countries 2013 and 2014. Presently, the global Islamic finance assets grew at double-digit rates during the past decade from about US\$200 billion in 2003 to an estimated US\$1.89 trillion in 2016 (Islamic Financial Services Industry Stability Report [29])

One of significant reason behind the growth in this decade was because the growing popularity of the Islamic banking system due to the ability of a substance of Islamic banking that resilient during global financial crises 2007/2008. The crisis has affected the conventional banking system and caused the collapse of financial institutions such as Lehman Brothers, sales financial services firms Merrill Lynch, Bank of America, First Boston and JP Morgan Chase. This financial catastrophe has forced the government to bail out trillion dollars. However, due to the essence of Islamic banking operation,

it was not affected by the financial crisis. Hasan and Dridi [30] show that Islamic finance performs better than conventional finance in profitability, risk management, asset growth and other elements. This research output also supported by the statement of Asian Banker Research. The research stated that the world's 100 largest wholly Islamic banks, ranked by assets, held more than \$580 billion in assets in 2008, a 66% increase from the \$350 billion compared to the previous year. This clearly showed that Islamic banks are not affected or less affected than their conventional counterparts. This event has brought the Islamic financial industry into the spotlight as a possible alternative for investment and banking.

In the Malaysian banking industry, the Islamic banking system was overgrowing side-by-side with the conventional banking system. The Islamic banking industry in Malaysia has been in existence for more than 30 years. In 2017 Islamic banking industry has grown by 9.4% to RM605.5 billion (2016: 11.8%) during the year, amid a moderate growth of 1.3% in conventional loans (2016: 2.4%). During the year, Islamic deposits and investment accounts expanded by 11.7% to RM672.6 billion compared to 2016, recorded only 9.4% (Financial stability and payment systems report (FSPSR, 2017). In the future Islamic banking, assets are predicted to US\$296.29 billion in 2019 if sustained favourable conditions are met. (Malaysia Islamic Finance Report, 2015). Now, there are 43 banks in Malaysia, 16 Islamic banking (10 domestic banks and 6 foreign banks) and 27 conventional banks (8 domestic banks and 19 foreign banks). The Islamic banking industry's rapid growth makes the industry players and the policymakers seeking after information on the relevance and importance of the Islamic banking industry in contributing to economic growth to figure out the industry's future direction and healthy growth. However, researches in Islamic banking are still scarce, especially in comparison between Islamic banking and conventional banking. Thus this paper aims to analyse the contribution of Islamic banking to economic growth by comparing it with conventional banking.

## **4. LITERATURE REVIEW**

### **4.1 Conventional Banking and Economic Growth**

The studied of banking–growth nexus has been heavily debated in the literature. The main thrust

is that the banking system plays a vital role in economic growth. The literature has evolved. However, the studied on the benefits of banking for growth still be conducted. Three priority possibilities come to the fore, (1) financial development is a determinant of economic growth supply-leading; (2) financial development follows economic growth-demand-following; and (3) bidirectional causality between finance and growth [31] However, some studies found an absence of causality between financial development and economic growth, as Lucas [16] and Stern [17] advocated. One of the first theoretical works in the finance-growth nexus is Schumpeter [10] where his proposed supply-leading theory that financial development promotes economic growth. The supply leading idea represents a positive impact of financial development on economic growth, which means that the creation of financial institutions and markets increases the supply of financial services and leads to economic growth [12]

Schumpeter stressed the importance of the banking sector in facilitating innovation and economic growth. Banks provide credits to the entrepreneur project, leading to technological innovation by mobilising savings, evaluating projects, facilitating transactions, managing risk, and monitoring managers. The work of Schumpeter is supported by many empirical studies such as Gold Smith [13] McKinnon [14] Shaw [15] King and Levine Christopoulos and Tsionas [32] Rioja and Valev [33] McKinnon [14] found there is a relationship between the financial system and economic development. He focused on connecting a country's financial superstructure and its real infrastructure such as financial liberalisation policies in the 1970s and 1980s. He believes that capital markets can support economic development via efficiency by increasing the return rate of existing capital stock. He considers an outside model of money demand and concludes that a better functioning financial system can lead to faster economic growth.

Later, Shaw [15] improvise the model by considering an inside money model. He argues that high-interest rate plays a vital role in attracting more saving. Thus through borrowing and lending, financial intermediaries will encourage investment and raise output growth. However, Shaw theory were criticised by Taylor [34] who predicted that financial liberalisation would slow down economic growth. More recent research, King and Levine [25] brought the discussion to the forefront of finance-growth

literature by conduct empirical analysis. King and Levine [35,36] studied this issue using data from 80 countries over the 1960-1989 periods. They use four indicators to measure financial development and regressed with the real GDP per capita. The first indicator is "financial depth", which equals the ratio of liquid liabilities of the financial system to GDP. Second is the ratio of the credit to the private sector by commercial banks to credits by domesticates banks, including the Central bank, to measure the relative importance of specific financial institutions. Third the ratio of banking credit allocated to the private companies to the domestic credit, and fourth the ratio of the credit to the private sector to GDP. Their conclusion is consistent with the supply-leading theory that financial development promotes economic growth.

However, Rioja and Valev [33] conducted a dynamic panel analysis and found that the relationship between financial development and economic growth may vary according to countries' level of financial development. They suggested that finance boost growth in rich countries but not in lower-income countries. Christopoulos and Tsionas [32] extend the study and become the first studied that employed panel data cointegration techniques. They were criticising the previous studies which do not consider cointegration properties of data. They used panel unit root tests and panel cointegration analysis for 10 developing countries, a small sample. They conclude that the financial system promotes economic growth. However, this study does not consider possible causes of the stock market to promote economic growth. The second view, advanced by Robinson [11] is the demand-following hypothesis which means that the real side of the economy expands its demand for financial arrangements increases, and, hence, financial services grow. Patrick [12] also supports this argument that financial services are seen as a passive response to a growing economy, showing that financial development is a consequence of high growth that demands more and better financial services.

The third view of the relationship between financial development and economic growth states that the two variables have bi-directional causality. Demetriades and Hussein [19] have studied 16 countries from all around the world. They used time-series approach to perform causality tests between financial development and real GDP. The study concludes that the bi-

directional causality relationship is found in the majority of the countries under concern. Khan [37] provide supportive evidence on the bi-directional causality. Time-series methods have an advantage because the method can account for the individual country-specific effect and clarify the causal relationship, which is vital. After all, causality patterns may differ across countries. Finally, Lucas [16] advanced a fourth view, which states no causal relationship between financial development and economic growth. Lucas [16] discusses that the role of the financial system in economic growth is over emphasised. He argued that finance is unable to spur economic growth or vice-versa.

## **4.2 Islamic Banking and Economic Growth**

Islam banking is based on an Islam legal structure based on Al-Quran and As-Sunnah is quickly developing as a viable form for financial institutions. Islamic banking adopts a different paradigm, philosopher and framework compare to Conventional banking. Several concepts are introduced and practised in Islamic banking, such as Profit and Loss Sharing (PLS), Musharakah, Murabaha, and other Islamic contracts to avoid interest (riba). Some economist believes that Islamic banking plays an important role in economic growth. However, the studies exploring the empirical relationship between the Islamic financial sector and economic growth nexus are still scarce.

There are several empirical works regarding the role of Islamic banking in economic growth that has been conducted. Furqani and Mulyani (2009) first attempted to conduct an empirical study that indicated the relationship between Islamic banking and economic growth. They selected Malaysia as their case study by employing a cointegration test and Vector Error Model (VECM) on a time series data from 1997 to 2004 to see whether the financial system influence growth or growth transform the operation of the financial system in the long run. The study adopts total Islamic bank financing as an indicator for Islamic banking intermediation. At the same time, fixed investment, trade and real GDP per capita are taken as indicators to represent economic activities. The result shows that there is no causality between Islamic bank financing and economic growth in the short run. However, there is a bi-directional causal relationship between Islamic bank financing and investments in the long run. This shows that their

finding is aligned with the demand following hypothesis. However, it is not adequate in econometrics of non-stationary time series.

Abduh and Omar [38] extend the research niche by examining the short-run and the long-run association between Islamic banking development and economic growth in Indonesia over 2003Q1-2010Q2. They applied the autoregressive distributed lag model (ARDL) framework. The result concluded a significant bidirectional relationship between the short and long run between Islamic banking resurgence and economic growth. Abduh and Chowdhury [39] also reported the same finding, there is bi-directional relationship in the short run and the long run between Islamic bank financing and economic growth. They examined the long-run relationship and the dynamic short-run interactions between the development of Islamic banking and the economic growth in Bangladesh from 2004Q1 to 2011Q2 by using Granger causality test.

Kassim and Majid [40] continued the work of Furqani and Mulyani [31] by examining the contribution of Islamic banking on economic growth based on Malaysia experience. The author's used ARDL approach on quarterly data set from 1998 to 2013. This studied aim to investigate the effects of Islamic finance on the real sector of the Malaysian economy. The result showed that Islamic banking and finance institution contribute to the Malaysian economy by financing investment projects. They suggested conducive legal to support Islamic banking human capital to cater to higher demand of human capital in the Islamic banking industry in the future. Furthermore, Yazdan and Sadr [41] also used the ARDL test and determined a strong relationship between Islamic finance and economic growth. However, Hachicha and Amar [42] have attempted time series by using Johansen Cointegration analysis method to analyse quarterly data regarding the impact of Islamic bank financing on Malaysia's economic growth. Based on the error correction model, they found that the GDP in Malaysia is not sensitive to Islamic financing in the long run.

Tabash and Dhankar [43] attempt to assess the contribution of Islamic finance in the growth of the economy of United Arab Emirates (UAE). They conducted time series analysis annually from 2001 to 2010 by using Johansen Cointegration analysis method. Islamic banks' financing through modes of financing has been

used as a proxy for the Islamic financial sector while three other variables such as Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF) and Foreign Direct Investment inflow (FDI) as proxies for real economic growth. Their empirical results showed a long-run relationship between Islamic banks' financing and economic growth in the United Arab Emirates (UAE), which shows that the well-functioning banking system promotes economic growth. However, their result found a unique causality relationship that support Schumpeter's supply-leading theory. The result also shows that Islamic banks' financing has contributed to the increase of investment and attracting Foreign Direct Investment inflow (FDI) in the long term. Tabash and Dhankar [44] also have done similar tests in a different scope, which is the author's empirically examining the relationship between the development of Islamic finance system and economic growth in Qatar. They used the same annually time series analysis and the same indicator but with different time span. The results concluded there is a strong relationship between economic growth and Islamic banking.

Tabash and Dhankar [45] examine the relationship between the Islamic finance system development and economic growth in the Kingdom of Saudi Arabia, which was carried out via econometric analysis such as unit root, cointegration test, and granger casualty test and time series data from 2010 to 2010. Their analysis uses the same indicator as previous research and their analysis shows that all the variables are stationary at their first difference. The result found a long-run relationship between Islamic banks' financing and economic growth in Saudi Arabia. There is a causality relation from Islamic banks financing to investment and Foreign Direct Investment (FDI) of Kingdom of Saudi Arabia, which shows that Islamic finance contributes to increasing FDI, and FDI reinforce economic growth.

Yazdan and Hossein [41] were among the earliest researchers that conducted panel analysis to investigate Islamic bank or Islamic finance on economic growth in 9 countries where the majority are Muslim. They use quarterly data from 2000:1 to 2010:4 by utilised the panel cointegration approach, Full Modified OLS (FMOLS). Real GDP growth (GDP) was used as to reflect economic growth, gross fixed capital formation (GFCF), trade activities involve export plus import (TRADE) and total Islamic bank's financing (FIN) was used as proxy to Islamic

banking system. They found a bidirectional relationship in the short-run and the long-run which indicates that Islamic banks' financing leads to economic growth. They suggested that the improvement of the Islamic financial system in those countries can spur economic development. Tabash and Dhankar [44] also conclude that Islamic financing is favourable and significantly correlated with economic growth when analysing certain countries in the Middle East, namely Qatar, Bahrain, and United Arab Emirates (UAE). However, in an unbalance panel of 16 MENA countries in the period 1993 to 2006, using GMM estimation of dynamic panels, Goaid, and Sassi [46] found a negative relation between Islamic finance and economic growth at the significance level of 10%.

In Asia, Tajgardoon et.al. [47] investigates 12 Asian countries by conducted short-run and long-run causality relationship between Islamic banking and economic growth. The result showed a significant relationship in the short run between economic growth and the Islamic financial system but not valid in the long run. Yusof and Bahlous [48] conducted panel cointegration analysis to compare the roles of Islamic banking in promoting economic growth in Malaysia and Indonesia. The results contradict the Tajgardoon et al. [47] because of the different analysis method. They found that Islamic banking contributes to economic growth in the short run and long run. The recent research, Lebdaoui and Wild [49] also focused on Asia and Southeast Asia. The study aims to find the relationship between Islamic banking presences and economic growth in practical ways. They argued that Islamic bank presence fuel economic growth in the long run but not in the short run.

Daly and Frikha [50] were among the researchers who examined the contribution of Islamic Finance in economic growth by comparing Islamic banks and conventional banks. The study was conducted using panel OLS estimation method over the period 2005-2012 with 120 banks in 10 developing countries, namely Bahrain, Egypt, Jordan, Kuwait, Pakistan, Qatar, Saudi Arabia, Sudan, Turkey, and the United Arab Emirates (UAE). The result shows that the development of Islamic banks contributes better to economic growth. While Gheeraert [51] aimed to analyse the hypothesis that Islamic finance can encourage banking sector development. The author concludes that Islamic banks can complement the Conventional banking system after analysing 70 countries with

large bank datasets. Gheeraert and Weill [51] confirmed the finding by using a stochastic frontier approach to show that Islamic banking positively impacted macroeconomic efficiency.

## 5. DATA AND METHODOLOGY

Secondary data was used in this research. The data can be categorised as two different types of features which are banking data and macroeconomic data. Banking data consist of return on assets (ROA) and return on equity (ROE) that used in this study in order to measure banks profitability. Another banking data is total deposit (TDep), used as a proxy of the bank development. While for macroeconomic data, real GDP per capita are included as the principal variable reflecting economic growth and hold as the dependent variable. Total government expenditure (TGov), trade openness (TO) gross fixed capital formation (GFCF) also included as the control variable. Stata version 14.0 was used to measure the role of both banking system in promoting economic growth in Malaysia.

Model 1 : Islamic Banks

$$LGDPC_{i,t} = \beta_0 + \beta_1 ROA_{i,t} + \beta_2 ROE_{i,t} + \beta_3 LTDep_{i,t} + \beta_4 GFCF_{i,t} + \beta_5 LTGOV_{i,t} + \beta_6 TO_{i,t} + \mu_{i,t} \quad (1)$$

Where,

$LGDPC$  = log of real GDP per capita  
 $i, t$  = the constant for bank  $i$  and year  $t$ ,  
 $\beta_0$  = the intercept of the model  
 $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$  = the regression coefficients  
 $ROA$  = return on assets of Islamic banking  
 $ROE$  = Return on equity of Islamic banking  
 $LTDep$  = log of bank total deposit of Islamic banking  
 $GFCF$  = Gross fixed capital formation  
 $LTGOV$  = log of total government expenditure  
 $TO$  = Trade openness

Model 2: Conventional Banks

$$LGDPC_{i,t} = \beta_0 + \beta_1 ROA_{i,t} + \beta_2 ROE_{i,t} + \beta_3 LTDep_{i,t} + \beta_4 GFCF_{i,t} + \beta_5 LTGOV_{i,t} + \beta_6 TO_{i,t} + \mu_{i,t} \quad (2)$$

Where,

$LGDPC_{i,t}$  = log of real GDP per capita;  
 (dependent variables)  
 $i, t$  = the constant for bank  $i$  and year  $t$ ,

$\beta_0$  = the intercept of the model  
 $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$  = the regression coefficients  
 $ROA$  = return on assets of conventional banking  
 $ROE$  = return on equity of conventional banking  
 $LTDep$  = log of bank total deposit of conventional banking  
 $GFCF$  = gross fixed capital formation  
 $LTGOV$  = log of total government expenditure  
 $TO$  = trade openness

## 6. RESULTS AND DISCUSSION

The data used in this analysis spans for both banking system which is 10 banks from the years 2012 through 2020. The variables used in this study were GDP per capita (GDPC), return on assets (ROA), return on equity (ROE), total government expenditure (TGOV), trade openness (TO) and gross fixed capital formation (GFCF). Additionally, banks and time fixed effects will be included in the analysis to control for unobserved banks and time effects.

### 6.1 Panel Ordinary Least Squares Regression

The Table 2 presents coefficients and the robust standard errors of 2 regressions which is model 1 for Islamic bank regression and model 2 for Conventional bank regression. The results of this pooled OLS regression model 1 shows that two of the six independent variables are significant either at ten percent or five percent level of significance. The significant variables for model 1 and model 2 are same, namely gross fixed capital formation (GFCF) and total government expenditure (LTGOV). GFCF for model 1 and model 2 significant at 5 percent significant level. This shows that GFCF have a relationship with economic growth. The estimated coefficient of GFCF is 0.0061 suggests that when GFCF increases 1%, the GDP per capita be widened by 0.0061%. The result is consistent with [38] At the same time, total government expenditure (LTGOV) also show that the variable has a relationship with economic growth. The coefficient of LTGOV is -0.2092 suggests that when LTGOV increase 1% the GDP per capita will decrease 0.2092%. This result is consistent with Hasnul (2015), where the author concludes that there is a negative correlation between government expenditure and economic growth in Malaysia for the study period.

The result is inconsistent with the hypothesis and previous research which state that the banking



sector will influence economic growth. This paper has extended the research by including fixed effects and random effects for panel regressions. The results from the OLS regressions in the previous model only provide the initial specifications of panel regressions. Thus, this study considered fixed effect and random effect model. The Fixed effect (FE) model of Islamic bank (model 1) and Conventional bank (model 2) result are shown in Table 3, while Table 4 showed Random effect (RE) model.

The panel regression includes time and bank fixed effects. The FE model 1 regression representing Islamic bank shows that each coefficient is statistically significant except for gross fixed capital formation (GFCF) and Trade openness (TO). Simultaneously, the F statistic for both model 1 and model 2 showed that the model is good. The significance of F statistic also shows that fixed effect model are better than the Pooled OLS model. Thus, this study will use fixed effect model and compare it with random effect model. Besides, the unit root test doesn't have to be conducted because of the fixed effect model, such as allowing heterogeneity or individuality among ten banks by allowing it to have its own intercept value. Furthermore, the term fixed effect meaning that the intercept may differ across banks, but intercept does not vary over time, which is time-invariant [52]

For the model 1, the sign of each coefficient matches previous results from the OLS regressions and the  $R^2$  decrease a bit from the final OLS regression of 0.9005 to 0.5613. The Islamic bank variable such as return on asset (ROA) and return on equity (ROE) that has been used to measure bank profitability and total development (LTDep) represent bank development for Islamic banking system are found significant. The Conventional bank fixed effect model shows that ROE and LTDep are the only banking variables. For the control variable, GFCF and total government expenditure also show a significant relationship with economic growth.

In model 1, ROA is found significant at 10% and has a relationship with economic growth. The estimated coefficient of ROA of 3.06 suggests that when ROA increases 1%, the GDP per capita will increase 3.06 %. This result is aligned with Hassoune [53] Olson and Zoubi [54] and Mohd Yusuf and Bahlous [48] However, in Conventional bank fixed effect regression, ROA is not significant. It can be concluded that in

Islamic bank ROA plays a role that influences Malaysia's economic growth. However, ROA in Conventional bank does not have a relationship with economic growth. ROE is found significant at 5% significant level and has a relationship with economic growth in the FE model 1. The estimated coefficient of ROE is 0.28 suggests that when ROE increases 1%, the GDP per capita will decrease by 0.28 %. While in FE model 2 also the same result. The estimated coefficient of ROE Conventional bank is 0.3152 suggests that when ROE increases 1%, the GDP per capita will decrease by 0.3152 %. Based on the result, ROE Islamic bank contributes more to economic growth than Conventional bank because the percentage that contributes to the decreases of economic growth for Islamic banks is lesser than Conventional bank.

Total deposit (LTDep) representing Islamic bank development is significant at 5% significant level and can influence economic growth. The estimated coefficient of LTDep is 0.059 suggests that when LTDep increases 1%, the GDP per capita will increase by 0.059 %. In FE model 2, the total deposit (LTDep) representing Islamic bank development is significant at 1% significant level. The estimated coefficient of LTDep is 0.122 suggests that when LTDep increases 1%, the GDP per capita will increase by 0.122 %. The result support Abduh and Chowdhury [39]. The contribution of banking development in Conventional bank are much better than by Islamic banking system by 0.0643%.

In FE model 1, the only control variable found significant in the result is total government expenditure (LTGOV). LTGOV is significant at 5% significant level and can influence economic growth. The estimated coefficient of LTGOV is 0.250, suggests that when LTGOV increases 1%, the GDP per capita will decrease by 0.250 %. While in FE model 2, there are two control variables found significant in the result, namely, total government expenditure (LTGOV), which is significant at 5% significant level and gross fixed capital formation (GFCF), which is significant at 10% significant level. The estimated coefficient of LTGOV is 0.2735 suggests that when LTGOV increases 1%, the GDP per capita will decrease by 0.2735 %. GFCF's estimated coefficient of GFCF of 0.0046 suggests that when GFCF increases 1%, the GDP per capita will increase by 0.0046 %. This result is aligned with the works of Abduh and Omar [38] and Daly & Frikha [50] Based on the fixed effect model, this study concludes that the Islamic banking presence is

found to improve economic growth better than Conventional bank in year 2012-2016. Islamic bank managed to play an important role by showing competitiveness and efficiency and then contributing to Malaysia's economic growth. The total deposit between Islamic banks and Conventional banks also does not show much difference. One factor that can explain this phenomenon is that Malaysia is a country with a higher Muslim population. A favorable environment and a good incubator explain why

the Islamic banks can play a significant role in economic growth.

### 6.2 Random Effect Model Regression

For the Random effect model, this study found that the results are same with the results of OLS regression. The result showed that, economic growth could not be explained by the variation of bank profitability and bank development either in Islamic banks or Conventional banks in Malaysia.

**Table 1. Data description**

Variable	Indicator name	Description	Measurement
LGDP	GDP per capita	Real GDP per capita (constant 2010 USD)	Log of the real GDP per capita (constant 2010 USD)
ROA	Return on assets	Return on assets (ROA) is a financial ratio that shows the percentage of profit a company earns in relation to its overall resources.	Measure in percentage (%).
ROE	Return on equity	Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.	Measure in percentage (%).
LTDep	Bank total deposit	Bank deposits consist of money placed into banking institutions for safekeeping.	Log total deposit (USD)
GFCF	Total government expenditure	Government expenditure refers to the purchase of goods and services	Log total government expenditure (USD)
LTGOV	Gross fixed capital formation	Representation of investment as it is economic indicators of the level of business activity.	Measure in percentage (%).
TO	Trade openness	Trade openness, defined as the ratio of exports plus imports to GDP.	Trade (% of GDP).

**Table 2. Results of Panel Ordinary Least Squares Regression**

Variable	Model 1 (Islamic Bank)				Model 2 (Conventional Bank)			
	Coefficient	Standard error	t-value	P-value	Coefficient	Standard error	t-value	P-value
Constant	5.0520	0.3225	15.66	0.000	5.0488	.3222	15.67	0.0000
ROA	0.5101	0.7685	0.66	0.507	0.2713	.8555	0.32	0.751
ROE	-0.0658	0.05893	-1.12	0.264	-0.0543	.0605	-0.90	0.369
LTDep	0.0035	0.00392	0.91	0.362	0.0011	.0029	0.39	0.695
GFCF	0.0061	0.00275	2.25	0.025	0.0061	.0027	2.23	0.026
LTGOV	-0.2092	0.1181	-1.77	0.076	-0.2110	.1179	-1.79	0.074
TO	-0.0035	0.0046	-0.77	0.444	-0.0031	.0046	-0.68	0.495
R <sub>2</sub>	0.9005				0.9006			

**Table 3. Fixed Effect Model Islamic Banks and Conventional Banks Result**

Variable	Model 1 (Islamic Bank)				Model 2 (Conventional Bank)			
	Coefficient	Standard error	t-value	p-value	Coefficient	Standard error	t-value	p-value
Constant	4.9690	0.3338	14.88	0.0000	4.6788	0.3127	14.96	0.0000
ROA	3.0663	1.5419	1.99	0.055	1.2021	1.2998	0.92	0.362
ROE	-0.2899	0.1199	-2.42	0.021	-0.3152	0.1109	-2.84	0.008
LTDdep	0.0587	0.0243	2.41	0.021	0.1216	0.0379	3.21	0.003
GFCF	0.0044	0.0029	1.51	0.141	0.0046	0.0025	1.81	0.079
LTGOV	-0.2504	0.1236	-2.02	0.051	-0.2735	0.1138	-2.41	0.022
TO	-0.0015	0.0048	-0.32	0.749	0.0000984	0.0044	0.02	0.982
R <sup>2</sup>	0.5613				0.1816			
F-value	63.37			0.0000	79.51			

**Table 4. Random Effect Model Islamic Banks and Conventional Banks Result**

Variable	Model 1 (Islamic Bank)				Model 2 (Conventional Bank)			
	Coefficient	Standard error	t-value	p-value	Coefficient	Standard error	t-value	p-value
Constant	5.0520	.3225	15.66	0.0000	5.0488	.3222	15.67	0.0000
ROA	0.5101	0.7685	0.66	0.510	0.2713	.8555	0.32	0.753
ROE	-0.0658	0.0589	-1.12	0.270	-0.0543	.0605	-0.90	0.374
LTDdep	0.0035	0.0039	0.91	0.367	0.0011	.0029	0.39	0.697
GFCF	0.0061	0.0027	2.25	0.030	0.0061	.0027	2.23	0.031
LTGOV	-0.2092	0.1181	-1.77	0.084	-0.2110	.1179	-1.79	0.081
TO	-0.0035	0.0046	-0.77	0.448	-0.0031	.0046	-0.68	0.499
R <sup>2</sup>	0.9005				0.1816			
F-value	64.85			0.0000				

**7. CONCLUSION**

This study comparing Islamic banking system and Conventional banking system in promoting economic growth in Malaysia. In this study, return on assets (ROA), return on equity (ROE) that represent the profitability, total deposit (LTDdep) which represent bank development, total government expenditure (TGOV), trade openness (TO) and gross fixed capital formation (GFCF) has been used. Dependent variable was GDP per capita (LGDP). This study used a sample of 10 Islamic banking systems and 10 Conventional banking systems in Malaysia. The results found that Islamic banking is catching up with Conventional banking profitability in Malaysia. Beck Demirguc Kunt and Levine [55] stated that larger banks would produce better performance and profitability due size of bank. This because they can benefit from diversified investment, opportunities, innovation of technologies, efficient management and economies of scale. In terms of total deposit, people prefer Conventional banks framework than Islamic banks.

The results found that the Islamic banking system variable can influence economic growth.

ROA, ROE and LTDdep are found significant. The variable ROE is significant but has negative effects to economic growth. On the other hand, the results show that ROA in Conventional banking does not have a relationship with economic growth. However, other banking indicators such as ROE and total deposit are significant to economic growth. This results are consistent with the finding of Sassi and Goaid [46] Based on the ROE results, ROE Islamic banking contributes more to economic growth than Conventional banking because the percentage that contributes to the decreases of economic growth for Islamic banks is lesser than Conventional bank. This is aligned with the findings of Kaouther et al., (2011). Kaouther et al. (2011) argued that Islamic banking is more profitable than conventional banking. The results also showed that Islamic banking provides an efficient channel for productive resources and monitors the use of the funds by the participation of business ventures, leading to bank profitability and then economic growth.

This study also stresses on total deposit indicator as a proxy to bank development. This study found that total deposit for both of the bank is significant to economic growth. The study

conducted by Kaleem and Isa [56] about Islamic and Conventional deposit also found that Islamic banks have significant contribution in developing economies. This study finding has been supported by Lebdaoui and Wild [49] A larger size of the Islamic banking sector is associated with higher economic growth but contra to the Gheeraert [51] finding where the author concludes that deposits do not enhance efficiency. However, the contribution of banking development in Conventional banking is much better than by Islamic banking system. However, the gap of differences is too small, which shows that Islamic deposits can cope with Conventional deposits even though the system that has been practised is different.

In addition, this also indicate that Islamic banking development play an important role in promoting economic growth. Few studies focused on the relationship between Islamic banking development and economic growth. Furqani and Mulyany [38] Majid and Kassim [3] Abduh and Omar [38] Tajgardoon et.al. [47] Yusof and Bahlous. [48] Lebdaoui and Wild [49] are among the limited articles in this area. Abduh and Omar [38] pointed out that the relationship is bidirectional where domestic funding provided by Islamic banking has influenced the economic growth [31] Furqani and Mulyany [31] more favored the "demand-following" where economic growth in the real economic sector stimulates Islamic banking institutions to develop. However, this contra with the resulted of Majid and Kassim [3] where they found that the relationship between Islamic banking development and economic growth is supply-leading view. Yusof and Bahlous [48] shown that there are positive relationships between Islamic banking and economic growth.

Concerning the control variables, the finding indicate that total government expenditure play and important role in Islamic and Conventional banking model analysis. However, in Conventional banking model analysis, GFCF is significant to economic growth but does not affect the Islamic banking model. To sum up the result, this study indicates that both of the banking systems in Malaysia plays an influential role and have a significant relationship toward Malaysia's economic growth. The bank profitability indicates that the Islamic banking sector plays a more influential role in economic growth than the conventional banking system. By contrast, the bank development indicator shows that both models contribute to economic growth;

however, conventional banking contribute more than Islamic banking. The results are confirmed by Gheeraert [51] that Islamic banking is indeed a compliment to Conventional banking and contribute to economic growth. The practising Sharia compliant banking sector does not crowd out the Conventional banking sector.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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