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The Relationship Between Murabaha Financing And Key Macroeconomic Indicators

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Abstract This paper aims to evaluate the effectiveness of Murabaha in financing economies and demonstrate its importance along with the extent of its relationship with GDP, Inflation, Interest rate, and Economic openness, in an attempt to understand the broader impact of Islamic banking practices on economic performance. The majority of Islamic banks adopt Murabaha product as the basis for their financing. This is due to its high returns, low risk, ease of implementation, and its pre-determined known profits. The great focus on this financing product prompted us to research its importance within the economy of Saudi Arabia, Malaysia, and Indonesia. For this purpose, quarterly panel data from Q1-2014 to Q4-2021 has been collected. After confirming the stationarity, homogeneity of the coefficients in model, GMM-PVAR model and PVAR Granger Causality test have been applied. The results of which have revealed a presence of a non-causality relationship between Murabaha and both GDP and Economic Openness, and a one-way causal relationship between Murabaha and both Interest rate and inflation. According to these findings, it can be stated that Murabaha financing exerts only a minor effect on Macroeconomic indicators. These empirical findings could have some implications in changing the financing policies of Islamic banks.

Keywords Murabaha · GDP · Inflation · Interest rate · Economic Openness · Panel Data

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The Relationship Between Murabaha Financing And Key Macroeconomic Indicators

By the mid-twentieth century, Muslim scholars have been continuously challenged by the dual process of first deserting usurious practices that have been undertaken by banks for years and finding an effective and palatable alternative which abides by the principles of Islamic teachings (Zandi, 2012).

In the early seventies of the last century and with the beginning of the flow of oil money to Gulf countries, serious thinking began about establishing modern Islamic banking, to help absorb the surplus funds (Akkaş, 2017). This prompted these countries to think about a banking system that is compatible with Islamic principles and could be integrated into the global financing system which is based on interest rates.

This development led to a review of Islamic financial structures, which catalysed the abandonment of the interest system and the utilisation of the principle of profit and loss sharing, a principle to which Islamic banks are strongly committed and that applies to a variety of banking transactions and services.

Islamic banks rely on different contracts to provide the necessary financing solutions for various economic sectors and provide their customers with the financing options they need. This is done by using various Islamic financing products such as Murabaha, Mudaraba, Musharaka, Ijarah, Salam, and others. There are different financing products, each with different conditions and application methods. In contrast, this is not the case with conventional banks, which use the interest rate as the sole cost for lending money.

Despite the advantages and diversity of Islamic financing products, the majority of Islamic banks resort to debt-generating methods (Murabaha, Ijarah) that rely on a predetermined profit margin. Based on several studies, it has been shown that most Islamic banks adopt the Murabaha product as the basis for their financing. This is due to its high returns, low risk, ease of implementation, and its pre-determined and known profits, which are features already present in the loan finance system adopted by conventional banks, giving Murabaha a competitive stance.

Murabaha is a contract between the customer and the bank under which the bank sells a specific commodity to the customer, provided that the purchase cost and profit margin are specified (Lamesh, 2012). The customer initiates the purchase order through the bank, committing to buying the commodity from the bank after adding a previously defined mark-up. The bank then proceeds to buy the commodity, attaining the commodity's ownership to its name, only then, the transaction can be completed between the bank and the customer (Hassan, 2019).

Murabaha is the most common financing method used by Islamic banks nowadays. According to a group of studies, Murabaha financing represented 90% of Islamic financing in Turkey in 2015. While the rate of contemporary Murabaha usage in Qatar exceeds 69% of the total financing assets between 2006 and 2014 (Cüre, 2017). Based on data issued by the Islamic Financial Services Board (IFSB), we calculated the percentage of Murabaha out of total Islamic financing between 2014 and 2021 in a group of Islamic countries, and we found that the percentage of reliance on Murabaha in Saudi Arabia is 40%, whereas Malaysia, Indonesia, and Kuwait exceeded the threshold of 50%. While in the UAE and Jordan, Murabaha percentage of total Islamic financing approached 65%.

This great focus on this financing product prompted us to research the importance of Murabaha within the economy of three sample countries and study its relationship with a group of macroeconomic variables between Q1-2014 and Q4-2021.

Given the existence of numerous studies in the literature on the relationship between credit financing activities and basic economic indicators, it was necessary to study this relationship from the perspective of

Islamic finance. By studying the Murabaha relationship and its effects on GDP, inflation, interest rate, and economic openness, this paper aims to provide valuable insights into the role of Islamic finance practices in shaping macroeconomic dynamics and promoting sustainable economic development. Understanding the dynamics and potential causal links between Murabaha and these variables is crucial to understanding the broader impact of Islamic banking practices on economic performance.

Although there are many empirical studies examining the impact of Islamic finance on many macroeconomic variables, there are scarce empirical studies that specifically examine the impact of Murabaha financing on GDP, foreign trade, interest rate, and inflation, of which none were found to implement panel data analysis. In contrast, large number of observations provided by panel data in this study allowed for concrete and unique results. Therefore, the importance of this study is in shedding light on the concept of Murabaha to help fill this gap in the literature, evaluating its effectiveness in financing the economy and demonstrating its importance along with the extent of its impact on some macroeconomic variables. This study is based on data collected from central banks in a sample of Islamic countries. In addition, this study will provide Islamic banks with insight into financing through Murabaha and guide them to the need to continue focusing on Murabaha or shift to other types of Islamic financing products.

The research hypotheses are as follows:

H_1: There is a significant causal relationship between Murabaha and economic growth.

H_2: There is no causal relationship between Murabaha and interest rates.

H_3: There is no causal relationship between Murabaha and inflation rate.

H_4: There is a significant causal relationship between Murabaha and economic openness.

Primarily, this paper will review earlier researches that evaluated the relationship between Murabaha and each of economic growth, inflation, interest rates and economic openness. The second section will present the study methodology and describe the model variables. In the third section, the results obtained in the empirical analysis will be presented. While the fourth section will analyse and discuss the statistical results. Finally, the final section will showcase a comprehensive summary of the research with a set of recommendations.

Literature Review

The literature that has examined the relationship between Islamic finance and macroeconomic variables is relatively limited compared to the one that has studied this relationship in conventional financing. But what is rarer is the literature that addresses the relationship between Murabaha and these variables. As we mentioned previously, one of the most important goals of this research is to fill this gap in the literature.

Below, we present the most important literature that address the relationship between Islamic finance in general and the economic indicators under study. We will also review the limited literature that specifically deals with Murabaha financing and its impact on the macroeconomic variables under study.

Murabaha and economic growth

The connection between the progress of the financial system and economic growth, examining whether the financial sector contributes to the growth of the real sector, has been considered the most discussed topic in the literature. However, studies in the context of Islamic banking and economic growth are limited.

Tabash & Dhankar (2014) have conducted numerous studies examining the type of relation between the development of the Islamic financing system and economic growth in each of the Bahrain, United Arab Emirates (UAE), Qatar, and Saudi Arabia. Annual time series of islamic banks financing and economic growth

data have been employed in the econometric analysis. They found that Islamic bank financing is positively and significantly related to economic growth in each of these countries in the long run. This supports the idea that a well-functioning banking system enhances economic growth. Their findings are consistent with other studies conducted in Jordan by Shawaqfeh & Al-Fawwaz (2019).

In another study by Abduh & Chowdhury (2012), The long-term relationship between the development of Islamic banking and economic growth has been studied in the case of Bangladesh. Quarterly time series data on economic growth and total financing and deposits of Islamic banking were used in this study. Using cointegration and Granger's causality tests, it has been found that, both in the long and short run, Islamic banking finance has a positive and significant relationship with economic growth. The study concluded that developing Islamic banking is one of the important policies that must be followed to maximize revenue. Abduh & Omar (2012) investigated the relationship between the development of Islamic banking and economic growth in Indonesia. By using quarterly data, bounds test for cointegration and autoregressive distributed lag (ARDL) model have been employed. The study found a statistically significant relationship between the development of Islamic finance and economic growth, whether in the short or long terms. Previous studies have shown that the development of the Islamic financial system plays an important role in the economic growth of countries. On the contrary, some studies find negative relationship between Islamic finance and GDP. For example, Abada & Melhem (2019) conducted a study to demonstrate the economic importance of Islamic banking financing in Jordan by measuring its impact on savings, investment, unemployment, inflation, and GDP over the period 2001-2016. The results of the study showed that financing in Islamic banks in Jordan has no statistically significant impact on inflation, GDP, and unemployment.

Studies that consider only Murabaha financing and economic growth are very limited. Ahmad et al., (2015) examined the relationships between Murabaha and GDP, foreign direct investment (FDI), and money supply (M2)) in Jordan between 1978–2012. A positive relationship between macroeconomic variables and Murabaha were indicated by the ARDL model in both long and short runs.

Bakhita (2017) selected six banks in six countries during 2011-2013 to measure the causal relationship between GDP and the performance of Islamic banks. The study concluded that there is a negative causal relationship between Murabaha and Ijarah financing models and GDP. Moreover, Murabaha can cause financial stress in banks and also reduce the GDP ratio. The study suggested that bank supervisors and decision makers in Islamic banks should reduce the amount of loans given by Murabaha financing methods.

A more recent study in Indonesia by Syahputra & Ningsih (2020) also confirmed the view that Murabaha financing variables have no impact on Gross Domestic Product (GDP) variables and are not significant. In contrast, in the same year, another study was conducted by Khotijah & Iswanaji (2020) to analyze the impact of Murabaha financing on the economic growth of the agricultural sector in Indonesia. A positive impact was noted on the Gross Domestic Product (GDP) of the agricultural sector due to Murabaha financing.

Murabaha and foreign trade

One of the most important activities that depend on banks to provide financing is the foreign trade sector. It is also seen that Banks are playing an important role and have become the cornerstone of concluding international business agreements. In addition, considering that banks do not know each other due to geographical distances, the role they play in giving confidence to the parties in the commercial process is considerable. Additionally, banks have become an effective tool in monitoring international activities in national economies. Islamic banks are also included in this framework.

Academic studies on the relationship between Islamic finance and foreign trade are very limited. Al-Aqoul (1993) believes that Islamic banks can provide halal financing for international trade clearing transactions.

Adadi (2015) agrees with the previous study in his research that aims to highlight the role of Islamic banks in financing foreign trade by relying on the letter of credit technique. This study conducted in Algeria found that the letter of credit can evolve and become an effective tool that Islamic banks can rely on in their foreign transactions. This could increase the role of banks, facilitate economic relations between countries, and revitalize them in line with sharia rules. In addition, Islamic banks can benefit from letters of credit according to various financing models within the framework of foreign trade practices. The most important of these is Murabaha. The study also concluded that Islamic banks' reliance on Murabaha ensures that Muslim importers do not miss the opportunity to secure deals with foreign exporters.

Boukhmet (2018) concluded that Islamic banks can play an important and effective role in promoting export and import movement between countries due to their financing mechanisms and instruments compatible with Islamic law. However, since the volume of trade transactions between Islamic countries is still low, the researcher suggested the need to promote trade transactions between Islamic countries by providing the necessary financing for foreign trade, as well as establishing Islamic banks specialized in providing credit facilities for foreign trade.

Mawada (2018) conducted a study focusing on Murabaha and its impact on the financing of foreign trade in Sudan during the period 2007-2016. The study, which followed a descriptive, analytical, and statistical approach, found that Murabaha financing affects the foreign trade volume by affecting only the import volume, without affecting the export volume, causing unrest in the trade balance. Therefore, the study suggested that incentive financing policies should be adopted to help increase production to advance the export sector by encouraging banks to divert the largest financial resource in favor of export financing. This causes an increase in exports, while on the other hand, it reduces imports, which leads to an improvement in the foreign trade balance. The study also suggested the necessity of coordination between the Ministry of Foreign Trade and the Central Bank of Sudan to eliminate the lack of equilibrium in the trade balance by imposing restrictions on imports and encouraging exports.

Muabaha and inflation

In general, there are many studies that try to measure the impact of conventional finance on the level of inflation, but there are scarce studies that focus on the role of Islamic finance in controlling inflation.

Fawwaz *et al.,* (2015) examined the impact of Islamic finance on some macroeconomic variables in Jordan. Using four regression models to test the study hypotheses, the study concluded that there is a negative relationship between Islamic finance and inflation rate. Which indicates that Islamic finance contributes to a decline in general price levels. Mahabadi & Kiaee (2016) focused on developing a model to study the impact of Islamic finance on the inflation rate in top Islamic finance economies in 2012. Using a Bayesian regression model, the findings show that Islamic finance is an important determinant of inflation in selected Islamic countries, where its increase can reduce the inflation rate. This means that the Islamic financial system can be used efficiently by policy makers to control the inflation rate.

Ayuniyyah et al., (2013) analyzed the impact of Islamic banks on economic output and inflation, where VAR/VECM analysis was implemented. Monthly data was used from the begining of 2004 to the end of 2009. Results revealed that real sector growth has been significately impacted by all Islamic variables. The same cannot be said for inflation, where it has not been affected by all Islamic variables.

Shahzad *et al.*, (2012) tried to highlight the potential of the Islamic Financial System to provide an inflation-free economy in a conceptual framework. The research confirms that the Islamic Financial System can bring socio-economic development of financial stakeholders and inflation to zero. The research concluded

that the Islamic financial system is supported by both money creation and increased production that does not lead to inflation in society.

Abuafifa (2015), in his study on the Murabaha contract and its impact on inflation in a conceptual framework, concluded that Murabaha contributes to the increase in inflation rate because the Islamic banking system provides excessive cash liquidity by expanding the supply of finance for unjustified consumption, production, and needs. Moreover, most Murabaha transactions are carried out solely for profit motives, without taking into account the objectives that Sharia aims to achieve in terms of legalizing transactions. In this case, Murabaha, which aims to obtain cash rather than actual benefit from the commodity, causes commodity prices to increase and plays an active role in increasing prices and in turn inflation.

In his study, Ergun (2022) examined the relationship between macroeconomic variables (GDP, employment rate, inflation rate) and Murabaha on the Turkish economy. VECM Granger and Toda-Yamamoto causality tests were used from the first quarter of 2010 to the fourth quarter of 2019. The findings show a bidirectional causality relationship between Murabaha and both GDP and employment rates. As for Murabaha and inflation, a unidirectional causality relationship was found from Murabaha to inflation.

Murabaha and interest rate

In a study conducted by Almsafir & Alsmadi (2013), the relationship between interest rates and macroeconomic variables and also the connection between Murabaha and macroeconomic variables has been examined, focusing on the Jordanian economy. Their analysis covers the years 1984-2012 using the ARDL Boundary Test. The findings revealed that macroeconomic variables have a relatively more significant impact on Murabaha compared to their impact on interest rates. Additionally, the study suggested that Murabaha financing may facilitate faster attainment of economic balance compared to conventional interest rates. These results demonstrate the potential benefits and relevance of Murabaha as an alternative financial instrument in the Jordanian context.

Korkut & Özgür (2017) used the Ordinary Least Squares (OLS) method to analyse empirical data in their study where they investigated the factors affecting the profit rate of Islamic banks and the deposit interest rate of conventional banks in Turkey from January 2006 to May 2015. The results showed that the government securities interest rate and exchange rate significantly affected the profit rate of Islamic banks. The apparent connection between conventional interest rates and profit rates has been attributed to the prevalence of Murabaha in Islamic financial institutions.

Adebola *et al.*, (2011) investigated the impact of interest rates on the volume of financing of Islamic banks between 2006 and 2011 in Malaysia, using the ARDL model and Granger causality test. The results showed that interest rate significantly affects the financing of Islamic banks in Malaysia; This demonstrated the existence of a complementary relationship and not a substitutionary relationship between Islamic and conventional bank financing. The study recommended the need to diversify Islamic products by Islamic banks in Malaysia to diversify their interest-free offers and enhance their position in the financial market.

In their research, Zahid & Kolay (2018) tried to examine the impact of various macroeconomic variables on the growth of Islamic banking in Pakistan. They considered seven macroeconomic factors: inflation rate, gross domestic product (GDP), total savings, remittances, interest rates, money supply and Muslim population. To conduct their analysis, they used annual data from 1985 to 2015, focusing on six Islamic banks. Researchers have estimated the relationships between macroeconomic variables and the development of Islamic banking using error correction model (ECM). The findings revealed that GDP growth, Muslim population, remittances, and money supply contributed positively and significantly to the expansion of Islamic

banking in Pakistan. Conversely, interest rates, savings and inflation showed an inverse relationship with the growth of Islamic banks.

Data and Methods

Data collection

The empirical application of this study focuses on examining the relationship between Murabaha and selected macroeconomic variables in three countries: Saudi Arabia, Malaysia and Indonesia. These countries were selected for their strong presence and importance in Islamic finance, as well as their well-established Islamic banking sectors and active participation in Islamic finance markets. Moreover, the rationale of choosing these countries lies in the fact that their economies depend on diverse resources. We chose one country from the Arabian Gulf whose economy depends primarily on oil revenues and another two from different economic environments in East Asia, where their economies depend on multiple resources.

The study covers the period from Q1-2014 to Q4-2021, consisting of 96 observations. To conduct empirical analysis, data was collected from reputable sources such as the central banks of relevant countries, International Monetary Fund (IMF), World Bank and Islamic Financial Services Board (IFSB). Stata 18 software was used for empirical analysis due to its versatility and ability to process panel data.

To examine the relationship between Murabaha and the macroeconomic variables in question, GMM-PVAR model and PVAR Granger causality test will be used. Using this method, we will assess whether there is evidence of causality between Murabaha and selected macroeconomic variables namely, GDP, Inflation, Interest rate and Economic Openness.

Variables description

We have carefully selected a number of variables that are considered crucial to understanding the impact of Murabaha on the economy. The Dependent variable is the Real Murabaha Growth Rate (MUR); this variable represents the growth rate of transactions conducted through Murabaha financing obtained from the Islamic Financial Services Board (IFSB) database and central banks of the selected countries. This reflects the growth rate in the monetary volume of goods or assets exchanged between the Islamic financial institutions and their customers by Murabaha. For the independent variables, we choose four variables as follows: Real GDP Growth Rate (GDP), Inflation Growth Rate (INF), Real Interest Rate (INT), and Economic Openness (ECO). The GDP growth rate at constant prices has been used to determine the growth rate of each country's overall economic output on a quarterly basis. Real GDP data are obtained from both the International Monetary Fund (IMF) and the relevant central banks of the countries under study. Real GDP Growth rate is calculated based on this data. INF variable was measured using the Consumer Price Index (CPI) from the IMF. This variable provides valuable information regarding general price level changes in the economy. INT variable includes Real interest rates obtained from the IMF, especially lending interest rates. ECO variable was assessed using the mean of (Import+Export) divided by the GDP, a calculated metric derived from data provided by the IMF and relevant central banks. The variables of the study, their description and the calculation method are given in Table 1.

Table 1
An Overview About the Variables

Variables	Description	Calculation Method	Source
MUR	Real Murabaha Growth Rate	$\frac{RealMurabahaVolume_{t+1}}{RealMurabahaVolume_t} - 1$	IFSB and Central banks of the countries under study
GDP	Real (at Constant prices) GDP Growth Rate	$\frac{(\text{RealGDP})_{t+1}}{(\text{RealGDP})_t} - 1$	IMF
INF	Consumer Price Index (CPI) Growth Rate	$\frac{(\text{CPI})_{t+1}}{(\text{CPI})_t} - 1$	IMF
INT	Real Lending Interest Rate	$\frac{1 + NominalInterestRate}{1 + InflationRate} - 1$	IMF
ECO	Economic Openness Rate	$\frac{(Imports + Exports)/2}{GDP}$	IMF

Research methodology

We present statistical results using a quarterly data set and provide insightful evaluation of the relationship between Murabaha financing and the selected macroeconomic variables. A series of tests were conducted on panel data to ensure the robustness and validity of our analysis. First, the presence of cross-sectional dependence was examined to account for potential dependencies between panel units. Then, unit root tests were applied, distinguishing the first-generation tests when cross-sectional independence was observed and the second-generation tests when cross-sectional dependence was detected. Additionally, homogeneity of parameters across the panel was evaluated to avoid misleading estimates. Finally, GMM-PVAR model and PVAR Granger causality test were conducted to explore the directional causal relationships between Murabaha financing and macroeconomic indicators.

The empirical model used for the study can be expressed as follows:

$$MUR_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 INF_{it} + \beta_3 INT_{it} + \beta_4 ECO_{it} + \varepsilon_t$$

Results

Cross-sectional dependence

We used the CD (Cross-Sectional Dependence) test suggested by Pesaran (2015) to examine cross-sectional independence in panel data. The CD test is widely used in panel data analysis to assess the presence of cross-sectional dependence among observations. The hypotheses of the test:

H_0: There is weak cross-sectional dependence.

H_1: There is cross-sectional dependence.

Table 2
Pesaran (2015) Cross-Sectional Dependence Test Result

Variables	CD Test Statistics	P-value
MUR	−0.86	0.392
GDP	6.26	0.000
INF	0.763	0.445
INT	1.668	0.095
ECO	4.778	0.000

According to the Pesaran CD cross-sectional dependence test results shown in Table 2. With regards to MUR, INF and INT variables which accept the null hypothesis, denoting that there is no cross-sectional dependence, in contrast to GDP and ECO that reject the null hypothesis which on the other hand denotes the existence of cross-sectional dependence. In other words, shocks that may occur in countries forming the panels will have an impact on other countries. It was decided that it would be more appropriate to apply the second-generation unit root test due to the detection of cross-sectional dependence between the panels for GDP and ECO. As for the variables MUR, INF and INT, first generation unit root test will be conducted.

Unit root test

Given the observation of cross-sectional dependence in the variables, it is imperative to conduct second-generation unit root tests to assess stationarity. Pesaran CADF (Cross-Sectional Augmented Dickey-Fuller) and Levin-Lin-Chu (demean) tests will be used to implement this.

Table 3

Panel Unit Root Test Results

Variables	Second Generation Unit Root Tests			
	Pesaran CADF		Levin–Lin–Chu (demean)	
	Level		Level	
	t-stat	P-Value	Adj t-stat	P-Value
GDP	−3.916	0.000	−10.2697	0.0000
ECO	−3.443	0.001	−2.1746	0.0148
	First Generation Unit Root Tests			
	ADF		Im–Pesaran–Shin	
	Level		Level	
	t-stat	P-Value	t-stat	P-Value
MUR	−3.7647	0.0001	−3.4298	0.0003
INF	−4.3682	0.0000	−3.9887	0.0000
INT	−2.5890	0.0048	−2.3378	0.0097

The hypotheses of unit root analysis are basically presented as follows:

H_0: There is unit root in the series (Series are not stationary).

H_1: There is no unit root in the series (Series are stationary).

As shown in Table 3, the p-values for MUR, GDP, INF, INT, and ECO variables are statistically significant at the 5% significance level, indicating stationarity at the level.

Homogeneity test

With cross-sectional dependence, it is possible that the dynamics of the economic development process are similar across the study countries. This prompted us to check for cross-sectional heterogeneity when evaluating empirical results. When the panel is homogeneous, portraying heterogeneity can lead to deceptive results (Breitung, 2005).

The null hypothesis of the homogeneity test is H_0: $\beta_i = \beta$ *(For all i)* and the alternative hypothesis is: H_1: $\beta_i \neq \beta$

Swamy, (2007) introduced a new test for testing homogeneity. Pesaran and Yamagata (2008) extended this test to examine slope homogeneity for large panels.

Table 4
Homogeneity Test Results

Pesaran and Yamagata Δ		
Tests	Δ-stat	p-value
Δ	−1.846	0.065
Δadj	−2.047	0.041
Swamy S		
S-stat		p-value
6.56		0.7665

The results of Pesaran Δ and Yamagata and Swamy S homogeneity test are given in Table 4. According to the test results, the null hypothesis that the slope coefficients in the model are homogeneous is accepted at 5% significance level. In other word, the slope coefficients in the model are homogeneous. Therefore, we use homogenous PVAR model and causality test.

GMM-PVAR analysis

It is important to determine the model's lag length before running the PVAR model. The process of selecting the lag length is crucial to ensuring that PVAR results are accurate and reliable. There are many numbers of criteria used to determine lag length. The smallest lag length of the criteria is the most appropriate (Yerdelen Tatoğlu, 2024, 149)

Table 5
PVAR Lag Length Selection Criteria Results

Length	***AIC***	***SC***	***HQ***
1	−15.3245*	−14.5231*	−15.0006*
2	−15.1881	−13.7196	−14.5949
3	−14.8921	−12.7551	−14.0282
4	−14.6620	−11.8573	−13.5283

*,**,*** indicate respectively significance levels at 10%, 5% and 1%

As seen in Table 5, the minimum levels of AIC, SC and HQ information criteria are present at the first lag. To show the dynamic relationships between variables in the panel data set, first-order panel VAR will be used.

Table 6

PVAR-Granger Causality Wald Test Results with PVAR-GMM Estimation Approach

GMM Estimates of the PVAR Model					
	Dependent Variables				
	MUR_{it}	GDP_{it}	INF_{it}	INT_{it}	ECO_{it}
MUR_{it-1}	−0.1277154 (0.259)	0.0010758 (0.583)	0.002707** (0.014)	−0.011102** (0.017)	.000249 (0.960)
GDP_{it-1}	−0.0517674 (0.938)	-.0698616 (0.793)	0.0050624 (0.907)	0.056411 (0.746)	-.0500164 (0.803)
INF_{it-1}	6.655654 (0.393)	-.6624264 (0.180)	−0.0286172 (0.794)	4.044954 (0.001)	-.1027612 (0.869)
INT_{it-1}	0.2543131 (0.434)	-.0298165 (0.688)	−0.0135187 (0.494)	0.726029 (0.000)	-.0601314 (0.492)
ECO_{it-1}	−3.918915 (0.456)	.6878507 (0.648)	−0.0825446 (0.785)	−0.477424 (0.731)	2.371975 (0.139)

*,**,*** indicate respectively significance levels at 10%, 5% and 1%

Panel VAR-Granger Causality Wald Test		
Granger Causality Direction	**Chi-2**	**P-Value**
GDP → MUR	0.006	0.938 (No Causality)
MUR → GDP	0.301	0.583 (No Causality)
INF → MUR	0.730	0.393 (One way Causality)
MUR → INF	6.045	0.014 (One way Causality)
INT → MUR	0.613	0.434 (One way Causality)
MUR → INT	5.733	0.017 (One way Causality)
ECO → MUR	0.556	0.456 (No Causality)
MUR → ECO	0.003	0.960 (No Causality)

Table 6 shows the panel vector autoregressive estimation for MUR, GDP, INF, INT and ECO at the first lag and panel VAR-Granger causality test results, that denote that there is a one-way Granger causality relationship from MUR to INF and INT, showing that changes in MUR can be used to predict changes in both INF and INT. It is also observed that there is no causal relationship between MUR-GDP and MUR-ECO. Therefore, it is not possible to predict changes in ECO and GDP based on changes in MUR, similarly, changes in MUR cannot be predicted from changes in GDP and ECO.

Discussion

While analysing the results it was found that while some agree with our initial hypothesis, others negate our expectations. In this discussion section, we aim to analyse and interpret our results in order to gain a clear understanding of the causal effect between Murabaha financing and various macroeconomic variables. Hence, grasping the actual influence of Islamic banking practices on economy.

Primarily, PVAR-GMM model results show that changes in Murabaha growth rate are not responsive to changes in the real GDP growth rate. This suggests that fluctuations in the economy do not affect Murabaha's utilization or demand. As for the fact that real GDP growth rate does not respond significantly to changes in Murabaha growth rate, this implies that the current spectrum of economic activities financed by Murabaha do not greatly impact economic growth. This can be interpreted as being the result of, using Murabaha in small-medium sized financial transactions for example financing the purchase of consumer goods and assets etc, and not substantial endeavours like financing infrastructure or industrial projects that are known

to be long-termed projects and greatly contribute to a greater expansion of the economy. This finding is in line with Syahputra and Ningsih (2020) who found that Murabaha financing variables have no impact on Gross Domestic Product (GDP) variables and are not significant.

As for the relationship between Murabaha and inflation, it can be viewed as a uni-directional relationship, where Murabaha affects inflation, but not the other way around. The result is consistent with Ergün (2022) who found a unidirectional causality relationship between Murabaha and Inflation, and with Abuafifa (2015), who concluded that Murabaha contributes to increasing inflation rate. The increase in inflation due to the effect of Murabaha, can be interpreted as follows; as the demand for Murabaha financing increases, this would render it more expensive, that would ultimately reflect on the prices of goods and services attained using this financial method, which in-turn intensifies inflation. Conversely, we found that inflation has no effect on Murabaha. This may be due to the fixed nature of the Murabaha margin. Where the agreed upon rate is honoured throughout the validity of the Murabaha contract, unaffected by any fluctuation in inflation rates.

When evaluating the relationship between Murabaha and Interest rates, and according to the results of PVAR test, it can be seen that increase in Murabaha growth rate decreases conventional banks' interest rates. This means that the increase in demand for Murabaha financing leads to a decline in demand for traditional financing. Therefore, in order for traditional banks to maintain their level of competitiveness in the market, they reduce interest rates to attract loan takers. On the other hand, there is no notable effect of fluctuations in interest rates on Murabaha growth rate. This could be due to a delay in adjusting Murabaha profit margins by Islamic financial institutions in response to changes in interest rates, since the review of Murabaha rates can be periodic and not in parallel with every change in interest rates.

As for economic openness, it has been shown that there is no causal relationship or effect in both directions. This basically indicates that Murabaha does not contribute to facilitating foreign trade, which may be due to several factors, the most important of which is that Murabaha financing in mentioned countries is primarily directed to local trade operations. Due to complicated documents, lengthy administrative processes, and uncompetitive transaction costs. Alternatively, the reason may be that the sectors to which Murabaha financing is directed are not related to foreign trade, such as the real estate sector, for example.

As for the issue of the lack of a causal relationship from economic openness to Murabaha, it may be due to the fact that Murabaha financing is more linked to financing local sectors that are not export-oriented, hence not affected by economic openness.

Conclusion

This study examined the relationship between Murabaha and some major macroeconomic variables in three countries: Saudi Arabia, Malaysia and Indonesia. Studied data spanned from Q1-2014 to Q4-2021. To understand the direction of influence and causality among the variables, namely, Murabaha, GDP, Inflation, Interest rate, and Economic openness, GMM-PVAR model and PVAR Granger Causality Test have been used. Results reveal the presence of a non-causality relationship between Murabaha against GDP and Economic Openness, a one-way causal relationship between Murabaha and Interest rate, in addition to a one-way causal relationship between Murabaha and inflation.

Murabaha financing is the most widespread product carried out by Islamic banks, due to the ease of its procedures, its transparency in determining the profit margin, and its low risk compared to other financing methods. Moreover, its flexible nature enables it to be used in both personal and commercial financing settings. However, considering the results we obtained in this study, it becomes clear that Murabaha does

not contribute to influencing economic growth or reducing the inflation rate and not even affect the economic openness.

The following recommendations can be derived from this study:

- Islamic banks must redirect Murabaha financing to better sectors that have a positive and direct impact on real economic growth, such as: Financing construction projects and financing small and medium enterprises that contribute to creating job opportunities, financing agricultural areas that contribute to increasing food security and improving rural areas.
- Means must be created to ensure that the purpose of requesting Murabaha financing is not for obtaining cash, but for the purpose of obtaining real assets. Because the way of using Murabaha has been deviated away from its original intent in many countries where it is considered as a means of obtaining cash and not for benefiting from assets and services.
- Policymakers should work towards making Islamic finance independent of the fluctuations of conventional finance and maintain its stability, by establishing a clear regulatory framework for Islamic financial institutions and increasing financial oversight of these institutions.
- Islamic banks are required to work on enhancing and simplifying Murabaha procedures in the scope of foreign trade by overcoming any implementation complications such as complex documentation and high procedural costs, that might be some of the major causes that alienate exporters and importers from favouring Murabaha financing.
- The legal regulations of countries adopting Islamic banking should enable the implementation of Murabaha financing in line with its specific principles and standards.

Finally, it is clear that focusing on one financing method by Islamic banks does not have the significant impact expected from its application. Therefore, the importance of diversifying Islamic financing products and turning to financing through Musharaka, Mudaraba, Ijarah, and other financing methods available in Islamic finance has become clear. Diversifying the financing method will inevitably lead to more positive effects on macroeconomic variables in a way that suits their real goals. Future studies could focus more on searching for ways to get rid of concentration on Murabaha, and ways to facilitate and encourage greater reliance on financing methods based on profit and loss sharing.[1]

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References

Abada, I. A. H., & Melhem, M. M. (2019). *The economic importance of Islamic banking finance in Jordan: A case study of the Jordan Islamic Bank and the Islamic International Arab Bank.* Studies: Sharia and Law Sciences, 46(3), 285-313.

Abduh, M. & Chowdhury, N. T. (2012). *Does Islamic Banking Matter for Economic Growth in Bangladesh?* Journal of Islamic Economics, Banking and Finance, 8(3), 104-113.

Abduh, M. ve Omar, M. A. (2012). *Islamic Banking and Economic Growth: The Indonesian Experience,* International Journal of Islamic and Middle Eastern Finance and Management, 5(1), 35-47.

Abuafifa, H., (2015). *Murabaha to purchase order and its impact on monetary inflation*. University of Sharjah Journal of Sharia and Legal Sciences, Volume 13, Issue 2

Adadi, T., (2015). *Islamic Letter of Credit as a Mechanism for Financing Foreign Trade*. Algeria. International Forum entitled: Challenges of Financing Investment in the Business Environment - An Islamic Vision. Faculty of Economic, Commercial and Management Sciences, University of Tebessa.

Adebola, S.S., Yusoff, W.S.W., & Dahalan, J. (2011). *The impact of macroeconomic variables on Islamic banks financing in Malaysia*. Research Journal of Finance and Accounting, 2(4), 22-33.

Ahmad, N., Yazis, M., & Oudat, M.S. (2015). *Analysis long-run and short-run relationships between macroeconomic variables and murabaha to the purchase-order: Evidence from Jordanian Islamic bank.* International Journal of Economics and Finance, 7(2), 168-177.

Akkaş, E. (2017). *An overview of Islamic economics and finance in the GCC countries.* Istanbul. İKAM Country Reports. Report No: 3.

Al-Aqoul, Muhammad Ali., (1993). *The role of credit facilities granted by the Islamic Bank in the Jordanian economy*. Irbid, Amman. Master thesis in Islamic economics. Yarmouk University. College of Sharia and Islamic Studies.

Alawneh, A. M., Al-Fawwaz, T. M., & Shawaqfeh, G. N. (2019). *The Impact of Islamic Finance on Some Macro Economic Variables (A case study of Jordan Islamic Bank).* Interdisciplinary Journal of Contemporary Research in Business (IJCRB).

Almsafir, M. K., & Alsmadi, A. A. (2014). *Murabahah versus interest rate, the equilibrium relationship with macroeconomic variables in Jordanian economy: An ARDL approach.* Procedia Social and Behavioral Sciences, 29, 349-357.

Ayuniyyah, Q., Beik, I. S., & Arsyianti, L. D. (2013). *Dynamic analysis of Islamic bank and monetary instrument toward real output and inflation in Indonesia*. Processing of Sharia Economics Conference – Hannover 9 Feburary.

Bakhita, H. (2017). *Impact of Islamic modes of finance on economic growth through financial stability*. Journal of Business and Financial Affairs, 6(249), 2167-0234.

Boukhemt, A. (2018), *The role of Islamic banks in financing foreign trade - the Islamic Development Bank as a model*. El Oued, Algeria. Master Thesis in Islamic sciences. Shahid Hama Lakhdar University. Institute of Islamic Sciences.

Breitung, J. (2005). *A Parametric Approach to the Estimation of Cointegration Vectors in Panel Data*. Econometric Reviews, 151–174.

Central Bank of Indonesia "https://www.ojk.go.id/en/kanal/perbankan/data-dan-statistik/statistik-perbankan-syariah/Pages/Sharia-Banking-Statistic---December-2021.aspx" (access 12/02/2024)

Central Bank of Malaysia "https://www.bnm.gov.my/rates-statistics" (Access 14/02/2024)

Central Bank of Saudi Arabia " https://www.sama.gov.sa/en-us/EconomicReports/pages/database.aspx" (Access 15/02/2024)

International Monetary Fund " https://data.imf.org/?sk=388dfa60-1d26-4ade-b505-a05a558d9a42" (Access 19/01/2023)

Islamic Financial Services Board "https://www.ifsb.org/data-metadata/" (Access 18/01/2023)

Cüre, E. (2017). *Individual Murabaha Transactions Applied in Islamic Banking: Turkey Example*. Istanbul Türkiye.Istanbul Sabahattin Zaim University.

ERGÜN, T., (2022). *The relationship between Murabaha and macroeconomic dynamics*. Marmara University Journal of Economics and Administrative Sciences • Volume: 44 • Issue: 1 • , ISSN: 2587-72, pp/pp. 119-136 DOI: 10.14780/muiibd.1135535

Hasan, H. A. E. (2019). *Evaluating the Murabaha financing experience in Sudan. Nile Bank case study Between (2010-2017).* Sudan University of Science and Technology.

Khotijah, S. A., & Iswanaji, C. (2020). *Analysis of the effect of murabaha finance in sharia banks on the economic growth of agricultural sector*. Jurnal Ekonomi dan Keuangan Syariah, 4(2), 246-259.

Korkut C., Özgür Ö., *Is there a link between profit share rate of participation banks and interest rate?: The case of Turkey*. Journal of Economic Cooperation and Development , cilt.38, sa.2, ss.135-158, 2017

Lamesh, A. (2012). *The role of financial engineering in developing the Islamic banking industry*. Stif, Algeria. Master Thesis, Ferhat Abbas University.

Mahabadi S, Kiaee H. (2016). *Determinants of Inflation in Selected Countries*. J. Mon. Ec. 2015; 10(2) :113-148

Mawada, B. (2018). *Murabaha and its impact on financing foreign trade in Sudan in the period 2007-2016, an applied study on the banking sector in Sudan*. Thesis for obtaining Master's degree in applied economics. College of Graduate Studies. Sudan University of Science and Technology.

Shahzad, A., Ahmed, T., & Rehman, K. U. (2012). *Islamic financial system: A system to defeat inflation.* Kuwait Chapter of the Arabian Journal of Business and Management Review, 2(4), 69.

Syahputra, D., & Ningsih, S. (2020). *The effect of Murabaha financing and sharia bank Musharaka financing to gross domestic product*. International Conference Communication and Social Sciences, 1(1), 148-158.

Tabash, M. & Raj S. Dhankar, (2014). *Islamic Banking and Economic Growth — A cointegration Approach.* Romanian Economic Journal, Department of International Business and Economics from the Academy of Economic Studies Bucharest, vol. 17(53), pages 61-90, September.

Yerdelen Tatoğlu, F. (2024). *Panel Zaman Serileri Analizi: Stata Uygulamalı*, Beta Yayıncılık, İstanbul

Zahid, S., & Basit, AB. (2018). *Impact of Macroeconomic factors on the growth of Islamic banking: A case of Pakistan*. Journal of Finance&Economics Research, 3(2), 37-50.

Zandi, G. Noraini, M. & Shahabi, S. (2012). *Some issues on Murabaha practices in Iran and Malaysian Islamic banks.* African Journal of Business Management, *6*(24): 7066.