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MACROECONOMIC IMPACT OF ISLAMIC BANK FINANCING IN SAUDI ARABIA

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ABSTRACT

Islamic banking is a fast-growing segment of the financial system in Saudi Arabia and has effects on the economic performance of a great importance to the economic growth. This study is to assist bridging an existing research gap of exploring how the Islamic banking helps the macroeconomic growth of K.S.A. The study mainly to employ the statistical analysis to investigate the macroeconomic impact of Islamic bank financing (IBF) in the Saudi economy from the year of 2001 to 2017 by looking into independent variables of the IBF and the total financing against the macroeconomic factors: inflation, unemployment, IT, GFCF, and GDP growth. The analyzed data are obtained from banks cope websites, Bloomberg and IMF. The main results from the VAR model in the E-Views show both of the TF and IBF have an impact on GFCF, but not on the inflation. The IBF effects on the unemployment and IT, but no significant effect on the GDP growth.

INTRODUCTION

Islamic banks (IBs) provide several products which enable the mobilization of savings and maximum utilization of the financial resources [1]. The banking system of a nation affects the rate of GDP growth since it determines the expenditure levels of consumers. Additionally, since the banking sector also influences the circulation of money, it affects the inflation rate. As such, banking impacts the financial capacity of organizations to pay for its labor [2]. Banking further influences international trade since it provides the necessary products to support the trade. The gross fixed capital formulation relies on the banking sector as well since it determines the amount of capital available to the country.

Islamic finance has had an important role in determining the rates of unemployment in the Kingdom of Saudi Arabia. Musharakah which is one of the Islamic financing methods has been a vital determinant of employment rates for a long time. Musharakah uses the principle of short-term partnership. This is a partnership developed between a client and an IBF with the aim of funding a particular undertaking for a given duration of time. The returns gained are shared based on pre-determined rates. Participating in Musharakah usually promotes the level of investment in business enterprises and hence decreasing and hence decreasing the unemployment rates in the country. The growth in the Gross Fixed Capital Formation (GFCF) as a result of the use of Islamic banking products enables the creation of employment opportunities [3]. Additionally, by enabling the financing of new projects as well as the ongoing projects, Musharakah increases the number of jobs, therefore, lowering the unemployment rates.

The Islamic finance can influence the inflation rates in the countries with the IBs such as Saudi Arabia. Mudaraba can control the rates of inflation by encouraging interest-free ventures or undertakings. Inflation is usually caused by the credit creation and interest rates charged by financial institutions. Therefore, Islamic financing such as Musharakah product and Mudaraba product prevent inflation by eliminating the payment of interests [4]. By boosting the levels of the GFCF, this kind of financing prevents inflation by creating jobs. In addition to this, they also help in the control of inflation by eliminating unsubstantiated credits as well as boosting the number of business enterprises in a country [5].

The Islamic financing has been used to trade for centuries and the main form of finance during the early Islamic era was Musharaka. It was widely used across the Mediterranean, and by the Scandinavians and Indians that traded through the Arab Caravans [6]. The nature of these financial products makes them ideal for international trade. Importers use Musharaka and Mudaraba to cater for the capital deficit when trading. The financial products enable the importers to enter into partnership agreements with the IBs [7]. This takes place in the event that the importer does not have sufficient capital to acquire goods from an exporter or producer. The Islamic finance boosts the level of international trade by enabling an IBF to carry out the roles of an importer on the behalf of another party (the client) in a particular trade. The client is then tasked with settling the deferred payments, and providing a markup which is payable to the IBF [8].

According to Boukhatem and Moussa [9], Islamic finance promotes GDP growth by providing a platform for productive ventures, which improves the GFCF and liquid assets. Daly and Frikha [10] claim the banking products offered by the IBs usually increases the number of fixed investments which lead to increase the Gross Fixed Capital Formation (GFCF). Additionally, the GFCF is boosted by the fact that the Islamic banking products enable investors to borrow long-term loans to establish projects. In their study, Kaleem, Mushtaq, and Arshed [11] opined that the Islamic banking and the GFCF are directly correlated. This is so because they promote economic growth and development through the accumulation of fixed assets as well as capital.

The relationship between the financial system and growth is a clear indicator that the growth can be shaped by modifying the finance system in a country. Since Islamic banking is characterized by a unique system of finance, it is highly likely that such policies will have an impact on the overall growth. Therefore, this study identifies the effect the macroeconomic variables as GDP growth, GFCF, Inflation, international trade, and unemployment rates from Saudi Arabia economy prospective.

METHODOLOGY

Independent Variable is the total financing that is the transaction of finance that fund pools from many sources give for the business. This study focuses on the impact of Islamic bank financing on the macroeconomic variables and the dependent variables are Gross Domestic Product growth (GDP), inflation, unemployment rate, international trade and Cross Fixed Capital Formation (GFCF).

Data and Sample

The target sample for this research includes the Islamic banks in Saudi Arabia. These are four banks that are fully-fledged Islamic banks: Al Rajhi Bank, Bank AlJazira, Bank AlBilad, & Alinma Bank, as total Islamic bank financing (IBF). The IBF data were collected from banks scope since this database contains all the data in accordance with the Saudi banking standard policies.

Table 1 summarizes first the key Financing variable, which is the independent variable selected in this study. Table 2 summarizes the macroeconomic variables that were selected, including the measurement and the data source.

Table 1. Independent Variables

Independent Variable	The Measurement	Representation in the Model	Data Source
Total Finance	Finance for 12 banks in the Saudi Arabia	TF	Bloomberg Database
Islamic Finance	Finance for 4 banks that full fledge Islamic finance in K.S.A.	IF	Bankscope Database

Table 2. Dependent Variables

Dependent Variable	Representation in the Model	The Measurement	Data Source
Gross Domestic Product growth	GDP_G	The accumulated market values for all the goods and services	The International Monetary Fund

		offered in the Saudi market over a given period of time	Database
Unemployment Rate	LF	The extent to which the Saudi does not available workforce is being utilized	The International Monetary Fund Database
Inflation	IN	The pattern with which the prices of goods are rising	The International Monetary Fund Database
International Trade	IT	The process of exchanging products, services, and capital across the national boundaries	The International Monetary Fund Database
Gross Fixed Capital Formulation	GFCF	The net increase in the physical assets measured over a specific period	The International Monetary Fund Database

MODEL TESTING

VAR Model

VAR is a model called Vector Auto Regression Model. An unrestricted VAR includes all variables in each equation and a restricted VAR include some variations in one equation or other variables in another equation. The restrictions and specifications were derived from simplistic macro theory [12]. The term auto regressive is due to the appearance of the lagged values of the dependent variable on the right-hand side. Hence, it is difficult to interpret the large number of coefficients in the VAR model.

Diagnostics

To ensure that the data is suitable for analysis will use the VAR model. Also, all data series are tested for statuanarity, by using the Augmented Dickey-Fuller Method (ADF). The Unit Root is a test of the stationarity wither the data are fit for the study or not. To perform some diagnostics, we have to make some test as normality test and heteroskedasticity test for stability of the

data and the various tests will be observed to investigate the statistical significances, the unit root test and lag section criteria both are estimated.

The various tests will be conducted to examine the impulse response function, the directional impact as the Granger causality, and the variance decomposition for all the data study that each the dependent variable estimate once with total financing and again with Islamic financing for indicating the relative impact of variable has on another.

RESULT AND DISCUSSION

Group Unit Root Test

Based on Table 3, the ADF estimates show that all variables in the sample are stationary at level except the TF, IF, and inflation which are not stationary at 10% last level of significance. However, all these variables are stationary at 1st difference, showing an order of integration I (1), all variable rejected at 1% except the TF reject at 5%.

Table 3. The Result of ADF Unit Root, I (0), And I (I)

Variables	Level I (0)			1 st Different I (I)		
	t-stat.	Pr o.	Decisi on	t-stat.	Pr o.	Decisi on
IF	-1.94	0.99	Do Not Reject	-4.20	0.01*	Rejec ted at 1%
Unempl.	-3.41	0.07**	Reject ed at 10%	-4.46	0.00*	Rejec ted at 1%
Export = IT	-3.65	0.06*	Reject ed at 5%	-5.66	0.00*	Rejec ted at 1%
GFCF	-4.97	0.01*	Reject ed at 1%	-9.12	0.00*	Rejec ted at 1%
GDP growth	-3.43	0.08**	Reject ed at 10%	-4.91	0.00*	Rejec ted at 1%
Inflation	-2.99	0.21	Do Not Reject	-4.70	0.00*	Rejec ted at 1%
TF	-0.16	0.93	Do Not Reject	-3.01	0.06*	Rejec ted at 5%

*, **, *** Means Significant At 1%, 5%, And 10% The Level of Rejected Respectively.

Impulse Response

Figure 1. (a) shows the output of response of IBF on GDP growth. IBF effects GDP growth positively as the trend shows a positive trend for the next ten periods. However, IBF still has a negative impact on GDP growth in most periods. Figure 1. (b) shows the shock is given GDP growth affects the total financing first in a positive way, but after one and a half months, the effect on GDP growth becomes negative for the next two periods until after three and a half periods again, the effect of GDP growth on TF becomes positive. This trend is again observed after 5.5 periods where the GDP growth will have a negative impact on TF and after 9.4 periods the impact becomes positive. Generally, the effect has a negative trend.

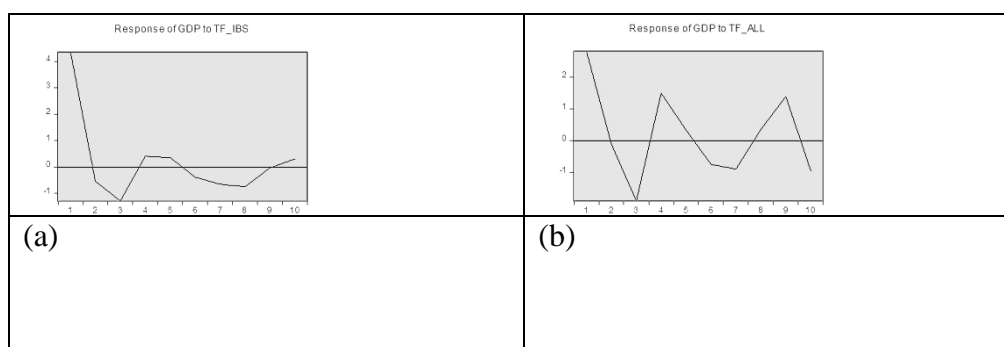


Figure 1. (a) Response of GDP to IBF, (b) Response of GDP to TF

Figure 2. (a) shows the output of response of IBF on GFCF. IBF effects GFCF negatively as the trend shows a positive trend for the third lag only. In the Figure 2. (b), TF affects GFCF first in a positive way, but after one and a half period, the effect on GFCF becomes negative for the next two periods until after three and a half periods again, the effect of GFCF on TF becomes positive. The outputs above again in the fourth lag only. The effect after shock on how GFCF affects TF.

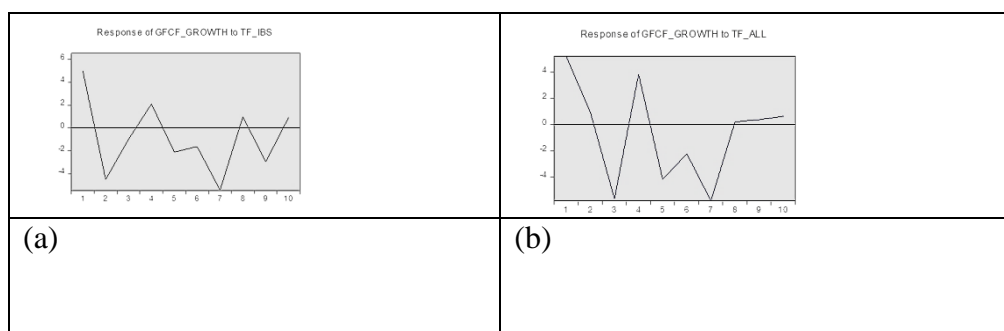


Figure 2. (a) Response of GFCF to IBF, (b) Response of GFCF to TF

Figure 3. (a) shows the output of response of IBF on Inflation. IBF effects inflation positively as the trend shows a positive trend for the beginning fourth and a half period. Figure 3. (b) shows the output of response of IBF on inflation. IBF effects positively on the inflation as the trend shows a positive trend for the next ten periods.

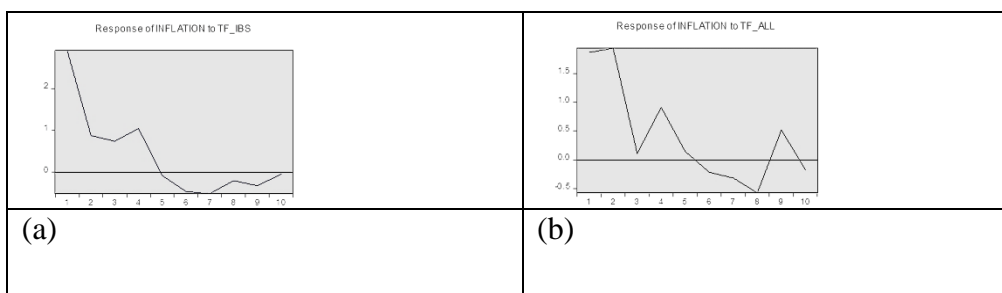


Figure 3. (a) Response of Inflation to IBF, (b) Response of Inflation to TF

Figure 4. (a) shows the IBF not effect on international trade in the beginning, but after three periods the effect of the IBF on international trade becomes positive, until 5.5 periods where the IBF will have a negative impact on IT. Figure 4. (b) shows the output of response of TF on international trade. TF affects IT positively in the beginning, then after the negative sign in period one, show positive increase until the periods five. The trend shows again a positive movement for 4 periods more. At the end the graph returns negatively again after periods ten.

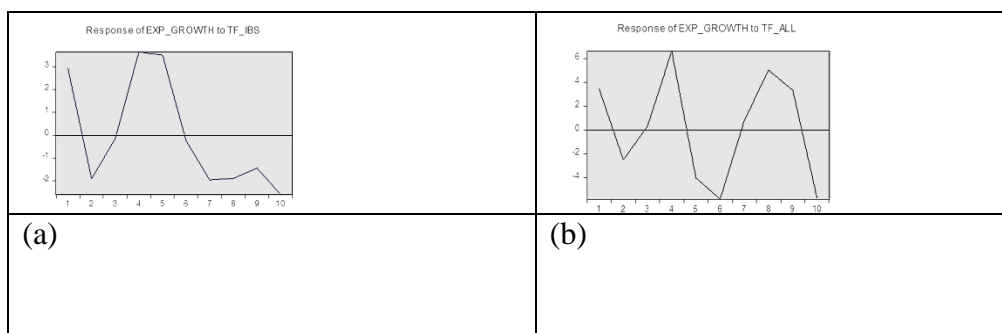


Figure 4. (a) Response of IT to IBF, (b) Response of IT to TF

In Figure 5. (a) and (b), the IBF and total financing effect on unemployment rate only in the fourth lag until 6 lag or expand in the total finance to the seventh and a half, then turn effect negatively again on the unemployment rate.

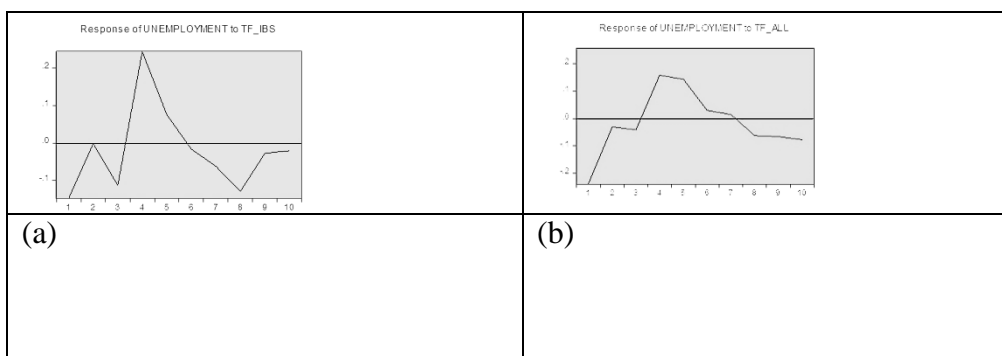


Figure 5. (a) Response of LF to IBF, (b) Response of LF to TF

VARIANCE DECOMPOSITION

Variance decomposition of the forecast error gives the percentage of expected variance in each variable that is produced by innovation from other variables.

The innovation or impulse means shocks in the language of VAR system. The Variance decomposition enables assessment of the economic significance of this impact as a percentage of the forecast error for a variable sum to one.

Variance Decomposition (GDP_G, IBF)

In the short run, the variance of IBF at period two is around 0.75 of the variances in the GDP growth. In the period four to ten the variance of IBF increases from 1.03 to 2.26 of the variances in the GDP growth. Clearly, in the long run the shock of IBF can contribute increase gradually, but still has a weak change in the variance GDP growth.

Variance Decomposition (GDP_G, TF)

In the short run, the variance of TF is 5.42 in the periods three of the variance in the GDP growth. In the period four to ten the variance of TF increases from 5.3 to around 8.0 percent then decreases to 7.1 percent of the variance in the GDP growth.

Variance Decomposition (GFCF, IBF)

In the short run, the variance of IBF is around 3.7 in period three of the variance in the GFCF. In the period four to ten the variance of IBF increases from 5.5 to 17.64 percent of the variance in the GFCF. Clearly, in the long run, the innovation of IBF can contribute increase gradually.

Variance Decomposition (GFCF, TF)

In the period two and three, the variance of TF increases from 6.0 to 22.45 percent of the variance in the GFCF. In the period four to ten the variance of TF increases from 34.9 to 40.3 percent of the variance in the GFCF. Clearly, in the long run, the impulse of TF can contribute increase gradually more than of IBF.

Variance Decomposition (Inflation, IBF)

In the short run, the variance of IBF is around 0.3 percent in period two of focus error variances in the inflation. During the period four to ten the variance of IBF increases from 0.5 to 0.6 percent of the variance in the inflation that means the IBF variable in the model do not have any strong influence on inflation.

Variance Decomposition (Inflation, TF)

At the end of the short run, the variance of TF clarified around 11.5 percent of the variance in the inflation. In the period four to ten the variance of TF

increases from 12.0 to 14.5 percent of the variance in the inflation. Clearly, in the long run, the impulse of TF can contribute increase gradually, but still has a weak change in the variance inflation.

Variance Decomposition (IT, IBF)

In the period two and three, the variance of IBF is around 41.6 percent of the variance in the international trade. During the period four to ten the variance of IBF increases from 54.6 to 57.4, then decreases to 47.76 percent of the variance in the IT. Clearly, in the long run the shock of IBF can contribute around the average neither strong nor weak influence on IT.

Variance Decomposition (IT, TF)

In the period two, the variance of TF defined from 3.6 percent of the variance in the international trade, and the period three marks at 12.8 percent. During the period four to ten the variance of IT fluctuates between 10.5 and 8.2 percent of focus error variance in the IT. Clearly, in the long run, the shock of TF can contribute still has a weak change in the variance IT.

Variance Decomposition (Unemployment, IBF)

In the short run, the variance of IBF in beginning of period two around 2.7 percent of the variance in the unemployment rate and in the next period three increase to 19.08 percent. In the period four to ten the variance of IBF almost same percentage that is 33.0, but there is a little bit decreasing between these two periods the variance in the unemployment rate.

Variance Decomposition (Unemployment, TF)

In the short run, the variance of TF is around zero of focus error variation in the unemployment rate. During the period four to ten the variance of IBF increases from 0.32 to 1.9 percent of the variance in the unemployment rate that means the TF variable in the model do not have any effect on the unemployment rate.

Granger Causality Test

Table 4 summarizes the findings of the Granger causality test. Table 4 indicates that the TF has a direct impact on GDP_G, GFCF and IT. There is positive granger causality between IBF with GFCF, IT and LF. Because the total Islamic financing only for 4 Islamic banks, while for total financing for all 12 banks granger causes the GDP growth. In addition, both IT and LF granger causes TF,

Table 4. Summary of Granger Causality Tests for Each Variable

	Chi-sq	Prob.	d.f	Causality
GDP_G to TF	0.435035	0.8045	2	No
TF to GDP_G	4.981091	0.0829***	2	Yes

GDP_G to IBF	0.626559	0.9601	4	No
IBF to GDP_G	0.959839	0.9158	4	No
IBF to GFCF	10.58671	0.0011*	1	Yes
GFCF to IBF	0.006026	0.9381	1	No
GFCF to TF	0.185895	0.9959	4	No
TF to GFCF	22.97275	0.0001*	4	Yes
IN to TF	4.091783	0.3937	4	No
TF to IN	3.556911	0.4693	4	No
IN to IBF	6.784698	0.1477	4	No
IBF to IN	0.356990	0.9858	4	No
IT to IBF	2.274642	0.6854	4	No
IBF to IT	9.402284	0.0518***	4	Yes
IT to TF	10.82868	0.0286**	4	Yes
TF to IT	9.399964	0.0518***	4	Yes
IBF to LF	12.36285	0.0148**	4	Yes
LF to IBF	1.267762	0.8668	4	No
TF to LF	0.714482	0.3980	1	NO
LF to TF	5.920839	0.0150**	1	Yes

Notes: *, ** and *** indicate calculated test statistic is significant at 1%, 5% and 10% respectively.

CONCLUSION

The findings that are achieved from the VAR model that IBF does not impact on the GDP growth, but the total financing data of the growth equation have an impact on the GDP growth. As part of the result, the TF appearance influence direction of granger causes on the GDP growth, and the IBF data of the growth equation, existence an influence direction on the unemployment rate based on the result of the Granger Causality test. However, IBF is still a part of the TF data and the eight conventional banks in Saudi Arabia offer Islamic financing windows. Also, The IBF and TF effect on the GFCF, with positive direction impact. Therefore, this impact to the investors will give a positive impact on the future for the economy growth. Nevertheless, IF and TF does not have an impact on the inflation, because both are not significant in all cases of the VAR estimations. Then, IBF has an influence on the international trade, because it is significant as well as total financial growth. These findings emerged accurately resonant with the results come from the Granger causality test that shows a positive direction impact on the international trade. As for the IBF effect on the unemployment rate, the study finds a negative and substantial relationship between the TF and the unemployment rate, however the IBF has an influence on the unemployment rate. Hence, the IBF becomes more effective on the macroeconomic in Saudi Arabia rather than TF. This is shown by the IBF data of growth equation that granger causes an impact on the unemployment rate. The results are in support of the most objectives that the IBF or TF has a positive impression exposed on the GDP growth, GFCF, and international trade facilitators in Saudi Arabia.

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