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AN EMPIRICAL EVALUATION OF THE IMPACT OF ISLAMIC FINANCING ON ECONOMIC GROWTH IN SAUDI ARABIA

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ABSTRACT

This work has empirically investigated the relationship between the Islamic banking and its contribution to economic growth in the Kingdom of Saudi Arabia (KSA). This work has examined role of Islamic banks financing in Saudi Arabia to stimulate economic growth by affecting the gross domestic product, gross fixed capital formation, foreign direct investment, employment, and trade volumes. This study has utilized the annual time series data from 1990 - 2015 for the macroeconomic variables and data pertaining to Islamic financing for analysis. This study has employed the autoregressive distributed lag (ARDL) approach to examine the empirical relationship between the selected variables. The outcome of this work has identified that Islamic bank financing positively affects the macro economy of Saudi Arabia as gross domestic product, gross fixed capital formation, foreign direct investment and trade volumes demonstrate a positive and significant relationship with Islamic bank financing. Furthermore, results showed a negative and significant relationship between the Islamic banks financing and employment. Thus, it is concluded that Islamic banking has positive effects on economic growth.

INTRODUCTION

Banks as an intermediary play an important role in promoting savings and investments, and banking sector is a main source of financing in an economy [1]. Banks pool deposits from households and as a financial intermediary lend this money to the corporate sector or borrowers who have deficit and charge them an interest rate while banks provide an interest rate on the deposits [2]. However, the difference between these interest rates is the profit of bank. Furthermore, banks facilitate the business on both savers and borrowers by pooling savings and providing credit which allows more investment in the

productive projects which in turns increases the output in a country [3]. In addition, a banking system, characterized by good discipline, effectiveness, and efficiency leads many sectors of economy to grow fast by encouraging capital formulation, new investments, trade, industry and agriculture [4].

Moreover, financial intermediaries enhance the economic growth by their impact on productivity growth. This is executed through mobilization of savings, simplifying easy transactions, managing risks, assessing the investment venture, monitoring firms, and allocating capital properly [5]. Thus, financial system, which includes financial intermediaries, affects economic growth due to their following functions that affects the savings and investment decisions in the country [6].

Islamic banking system is deferent from conventional banking system, where it is established as an alternative to the conventional banking system [7]. These banks deal according to Islamic principles, which includes prohibition of *Riba* (interest), *Garar* (uncertainty), unethical investments, *Darar* (detriment), and impulse [8]. Islamic banking is gradually moving into conventional financial systems. Furthermore, the important features of Islamic banking system is it relates finance to real assets, focus on fair contracts, profit sharing principle, *Zakah* (donation of wealth) and *Qard Hasan* (marketable wealth) [9].

Several studies have analyzed the role of Islamic banking in economic growth. Gheeraert et al. [10] explored whether the improvement of Islamic financial impacts macroeconomic productivity, and found Islamic financial advancement favors macroeconomic proficiency. Kassim [11] inspected the impact of Islamic banking and economic development in Malaysia and found that Islamic banking has begun to make significant commitments to the economy growth by adequately completing the budgetary intermediation job of pooling and diverting assets. Grassa et al. [12] scrutinized the impacts of Islamic banking related improvement on economic development for five GCC nations which were UAE, Saudi Arabia, Qatar, Kuwait and Bahrain, and found that Islamic banking prompts economic development in the five GCC nations. Abedifar et al. [13] examined the significance of Islamic finance in economic growth and found that Islamic finance influence monetary investment positively, which has caused a positive effect on economic growth. Abd. Majid et al. [14] evaluated the commitment of the Islamic banking to economic development in Malaysia, and found noteworthy unidirectional causality from Islamic banking towards the monetary development. Karim et al. [15] analyzed the role of Islamic banking on economic advancement and found that Islamic banking is strong towards market trends due to its accentuation on risk sharing, and it displays positive effect on the economic growth. Hachicha et al. [16] explored the effect of the Islamic banking on Malaysia's economic development, and found that Islamic banking impacts the economic growth in short term, as Islamic finance connects substantially more in non-participatory exercises. Tabash et al. [17] examined the connection between the advancement of Islamic banking and economic development in the Middle East, and found that over the long-haul Islamic financing is certain and fundamentally corresponded with economic development in the Middle

East. Imam et al. [18] investigated whether the evolution of Islamic banking is useful for economic development, and found that Islamic financing is firmly connected with economic development.

Since Saudi Arabia's economy complies with Islamic Shariah, and the country is one of the top countries in the field of Islamic finance where the number of banks with Islamic financing is rising [19]. Previously, studies pertaining to Saudi banking sector concentrated on conventional banking system and relate it to economic growth [20]. Thus, the authors would life to fill the gap in the limited literature by examining the relationship between Islamic financing and economic development of the country. Therefore, this work was done to analyze the relationship between Islamic banking and economic growth in the kingdom of Saudi Arabia. This work has analyzed long run relationship between the financing of Islamic banks and important macroeconomic factors such as trade, employment, gross domestic product, gross fixed capital formation, and foreign direct investment.

METHODOLOGY

This work has analyzed the impact of Islamic bank financing on the macro economy of Saudi Arabia. This study employed the annual time series data related to Islamic banks financing (IBF), gross domestic product (GDP), gross fixed capital formulation (GFCF), employment (LF), trade (NX) and foreign direct investment inflow (FDI), covering the period from 1990 till 2015. The data series related to the following macroeconomic variables; GDP, GFCF, and NX are obtained from Saudi Arabian Monetary Agency (SAMA) database. Data series pertaining to employment (LF) and foreign direct investment (FDI) are obtained from World Bank database, and (FDI) variable is expressed as the percentage of GDP. Whereas data related to Islamic bank financing was collected from the individual annual reports of each bank in the sample. In addition, the total net loans by the selected Islamic banks were used in the sample as the proxy for Islamic bank financing in Saudi Arabia. All the variables are transformed into logarithm (LOG) except for foreign direct investment, which contains negative values over the sample period. The following hypotheses were analyzed in this work. 1. There is a positive relationship between Islamic banks financing and trade in Saudi Arabia. 2.

There is a positive relationship between Islamic banks financing and employment in Saudi Arabia. 3. There is a positive relationship between Islamic banks financing and gross domestic product in Saudi Arabia. 4. There is a positive relationship between Islamic banks financing and gross fixed capital formulation in Saudi Arabia.5. There is a positive relationship between Islamic banks financing foreign direct investment inflow in Saudi Arabia. The stationary of the data was analyzed using Augmented Dickey-Fuller (ADF) test. In addition, autoregressive distributed lag (ARDL) model was used to evaluate the impact of Islamic bank financing on selected variables. ARDL models was estimated with foreign direct investment (FDI), gross domestic product (GDP), gross fixed capital formation (GFCF), labor force (LF) and net exports (NX) as the dependent variables while taking Islamic bank financing (IBL) as the independent variable.

RESULT AND DISCUSSION

Descriptive Statistics

Table 1 shows the descriptive statistics of the data. Based on Table 1, the range for the Islamic banks financing data is (342,723,878), which is near to the maximum financing, and it indicates a very high growth in the field of Islamic financing in the year of 2015 compared to the early years. Skewness for most of the data series is around the value of 0.748 to 1.180 and kurtosis value is 3.245, indicating the normal distribution for the selected variables in the sample. Furthermore, to valid this, Jarque-Bera test was conducted to determine if the variables are normally distributed. The test considers the null hypothesis of normal distribution against the alternative hypothesis of non-normal distribution i.e. H_0: 0, $H_1 \neq 0$, then null hypothesis is rejected if the Jarque - Bera test statistic exceeds a critical value at the significance level of 1%, 5% and 10%. Based on Table 1, GDP, GFCF, LF and NX, the calculated p-values are higher than any usual significance level and their test statistics are lower than any critical value which indicates that there is no reason to reject the null hypothesis of a normal distribution. For foreign direct investment series, Jarque - Bera test statistic (5.319) is greater than the critical value (4.61), so FDI has 10% level of significant, and it has a relatively thick-tailed distribution because kurtosis is 3.24.

Table 1. Descriptive Statistic

	FDI	GDP	GFCF	IBL	LF	NX
Mean	1.813	1242041	309637.3	78498194	7984780	314109.6
Median	1.127	760150.9	148885.5	4457986	7292097	163982.5
Maximum	8.496	2826869	771838	3.43E+08	14034929	874171
Minimum	-1.316	440525	60645	182137	5119391	32991
Std Dev	2.674	839952.1	253352	1.16E+08	2451519	282584.6
Skewness	1.101	0.793	0.748	1.18	0.759	0.792
Kurtosis	3.245	2.109	1.879	2.917	2.627	2.166
EK	0.245	-0.891	-1.121	-0.083	-0.373	-0.834
Jarque-Bera	5.319	3.584	3.784	6.043	2.651	3.472
Probability	0.069	0.166	0.151	0.049	0.266	0.176
Sum	47.144	32293069	8050571	2.04E+09	2.08E+08	8166850
Sum Sq. Dev	178.762	1.76E+13	1.60E+12	3.37E+17	1.50E+14	2.00E+12
Observation	26	26	26	26	26	26

Test of Stationarity - Unit Root Test

The stationary of the data was analyzed using Augmented Dickey-Fuller (ADF) test. ADF is applied at level and at first difference. The lag-lengths for the test regressions are based on Schwarz Information Criterion (SIC). Based on Table 2, the ADF estimates show that all variables in the sample are not stationary at level except the FDI which is stationary at 10% level of significance. However, all these variables are stationary at first difference, showing an order of integration I (1).

Table 2. Unit Root Test

Variable	Level	First difference
LOGGDP	-1.836	-4.026**
LOGGFCF	-0.324	-3.135**
LOGLF	-1.092	-4.114**
LOGNX	-1.556	-3.792**
FDI	-3.576***	-
LOGIBL	-2.019	-4.924*
*, **, *** significant at 1%, 5%, 10% level of significant		

Estimation Of Autoregressive Distributed Lag (ARDL) Model

Table 3 shows the long-term relationship between the Islamic banks financing and Gross Domestic Product, estimating the coefficient with restricted constant, unrestricted constant and restricted linear trend models. The estimates show a positive and significant impact of Islamic bank financing (IBL) on GDP. The estimated coefficient of IBL is 0.11 which shows a 1% increase in IBL will increase the GDP by 0.11%. The estimated coefficient of IBL (-1) is positive but statistically insignificant, indicating a positive impact of last year Islamic bank financing on current year GDP. However, magnitude of the coefficient is small just around 0.02. The estimated coefficient of GDP (-1) is 0.87 under the restricted constant model and it indicates that a 1% increase in last year GDP will increase the current year GDP by 0.87% and the estimated coefficients of GDP (-1) for unrestricted and restricted and linear trend are consistent with this value.

Table 3. Relationship Between the Islamic Bank Financing And GDP

	Restricted constant			Unrestricted constant			Restricted liner trend		
Variable	GDP(-1)	IBL	IBL(-1)	GDP(-1)	IBL	IBL(-1)	GDP(-1)	IBL	IBL(-1)
Coefficient	0.874	0.119	0.023	0.874	0.119	0.023	0.904	0.129	0.022
t-Statistic	4.252	2.709	0.387	4.252	2.709	0.387	3.996	2.480	0.367
Prob.*	0.001	0.016	0.704	0.001	0.016	0.704	0.001	0.026	0.719

Table 4 shows the long-term relationship between the Islamic banks financing and gross fixed capital formation, estimating the coefficient with restricted constant, unrestricted constant and restricted linear trend models. The estimates show a positive and significant impact of Islamic bank financing (IBL) on gross fixed capital formation (GFCF). The estimated coefficient of IBL for restricted and unrestricted constant is 0.13, which shows a 1% increase in IBL will increase the GFCF by 0.13% and it is .16% when the model is restricted and linear trend. The estimated coefficient of IBL (-1) is positive but statistically insignificant, indicating a positive impact of last year Islamic bank financing on current year GFCF. However, magnitude of the coefficient is small just around 0.02 which indicates a 1% increase in IBL (-1) will increase the GFCF by 0.02% while it is negative and not significant with a very small magnitude for the restricted and linear trend model. The

estimated coefficient of GFCF (-1) is 0.99 under the restricted constant model and it indicates that a 1% increase in last year gross fixed capital formation GFCF (-1) will increase the current year GFCF by 0.99% and the estimated coefficients of GFCF (-1) for unrestricted and restricted linear trend are consistent with this value.

Table 4. Relationship Between the Islamic Bank Financing And GFCF

	Restricted constant			Unrestricted constant			Restricted liner trend		
Variable	GFCF(-1)	IBL	IBL(-1)	GFCF(-1)	IBL	IBL(-1)	GFCF(-1)	IBL	IBL(-1)
Coefficient	0.998	0.137	0.024	0.998	0.137	0.024	0.828	0.169	-0.004
t-Statistic	4.455	3.841	0.476	4.455	3.841	0.476	3.566	3.775	-0.079
Prob.*	0.001	0.002	0.641	0.001	0.002	0.641	0.003	0.002	0.938

Table 5 shows the long-term relationship between the Islamic Banks financing (IBL) and employment (LF), estimating the coefficient with restricted constant, unrestricted constant and restricted linear trend models. The estimates show a negative and significant impact of Islamic bank financing on employment; however, the estimated coefficient value is 0.02 which shows a relatively small impact of Islamic bank financing on labor force. The estimated coefficient of IBL (-1) also shows a negative and statically significant impact on LF, estimated through the given three models. Thus, it is concluded that there is a small negative impact of previous year Islamic bank financing on current year employment.

Table 5. Relationship Between the Islamic Bank Financing And LF

	Restricted constant			Unrestricted constant			Restricted liner trend		
Variable	LF(-1)	IBL	IBL(-1)	LF(-1)	IBL	IBL(-1)	LF(-1)	IBL	IBL(-1)
Coefficient	0.574	-0.021	-	0.574	-0.021	-	0.258	-0.026	-0.009
t-Statistic	2.077	-2.326	-	2.077	-2.326	-	0.834	-2.718	-0.813
Prob.*	0.052	0.032	-	0.052	0.032	-	0.416	0.015	0.428

Table 6 shows the long-term relationship between the Islamic Banks financing (IBL) and Trade (NX), estimating the coefficient with restricted constant, unrestricted constant and restricted linear trend models. The estimates of show a positive impact of Islamic bank financing (IBL) on net exports. However, it is statically insignificant. The estimated coefficient of IBL is 0.16 for restricted constant model, which shows a 1% increase in IBL will increase the NX by 0.16% and the estimated coefficients of IBL for unrestricted and restricted and linear trend are consistent with this value. The estimated coefficient of NX (-1) is 0.44 for the given three models which indicate a 1% increase in the last year trade NX (-1) will increase the current year trade NX by 44%.

Table 6. Relationship Between the Islamic Bank Financing And NX

	Restricted constant			Unrestricted constant			Restricted liner trend		
Variable	NX(-1)	IBL	IBL(-1)	NX(-1)	IBL	IBL(-1)	NX(-1)	IBL	IBL(-1)
Coefficient	0.444	0.168	-	0.444	0.168	-	0.446	0.185	-
t-Statistic	1.416	1.301	-	1.416	1.301	-	1.385	0.759	-
Prob.*	0.171	0.207	-	0.171	0.207	-	0.181	0.456	-

Table 7 shows the long-term relationship between the Islamic banks financing (IBL) and foreign direct investment (FDI), estimating the coefficient with restricted constant, unrestricted constant and restricted and linear trend models. The estimates show a positive and significant impact of Islamic bank financing (IBL) on FDI. The estimated coefficient of IBL is 2.34 for restricted and unrestricted constant models and 2.11 for restricted and linear trend model, which shows a 1% increase in IBL will increase the NX by 2.34% and 2.11%. The estimated coefficient of IBL (-1) is positive but statistically insignificant, indicating a positive impact of last year Islamic bank financing on current year FDI. However, magnitude of the coefficient is around 0.44, which indicates a 1% increase in IBL (-1) will increase the FDI by 0.44% for the restricted and unrestricted constant models while the coefficient is just 0.10 for the restricted and linear trend model. The estimated coefficient of FDI (-1) is 0.43 under the restricted and unrestricted constant models and it indicates that a 1% increase in last year foreign direct investment FDI (-1) will increase the current foreign direct investment FDI by 0.43%.

Table 7. Relationship Between the Islamic Bank Financing And FDI

	Restricted constant			Unrestricted constant			Restricted liner trend		
Variable	FDI(-1)	IBL	IBL(-1)	FDI(-1)	IBL	IBL(-1)	FDI(-1)	IBL	IBL(-1)
Coefficient	0.432	2.348	0.449	0.432	2.348	0.449	0.241	2.110	0.103
t-Statistic	1.342	2.303	0.457	1.416	2.303	0.457	0.937	2.656	0.156
Prob.*	0.212	0.047	0.658	0.171	0.047	0.658	0.371	0.024	0.879

Conditional Error Correction Model and Long Run Form

Table 8 shows the co-integration results estimated through the specified ARDL model. It is important to look at the error correction term (ECT) coefficient to test the long run relationship between the variables, the coefficient of error correction term (ECT) is supposed to be negative, significant, and its magnitude should be between 0 and -1 which indicates the existence of long run relationship. Based on Table 8, results indicates that the estimated coefficient of the error-correction term ECT (-1) is negative and significant for GDP, GFCF and NX models which indicates a long-term relationship between the Islamic bank financing and these macroeconomic variables. The error correction term for employment model (LX) is positive and significant, indicating no long-term effect of Islamic bank financing on

employment, whereas for FDI the error correction term is smaller than -1 which shows no long-term effect of Islamic bank financing on foreign direct investment in Saudi Arabia.

Table 8. Co-Integration and Long Run Form

Eq	Variable	Restricted constant			Unrestricted constant			Restricted and liner trend		
		Coefficient	t-Stat	Prob.*	Coefficient	t-Stat	Prob.*	Coefficient	t-Stat	Prob.*
GDP	ECT(-1)	-0.458	-3.568	0.003	-0.458	-2.775	0.014	-0.459	-2.816	0.013
GFCF	ECT(-1)	-0.404	-3.268	0.005	-0.404	-3.161	0.007	-0.402	-4.084	0.001
LF	ECT(-1)	0.281	2.863	0.010	0.282	2.776	0.013	0.353	6.388	0
NX	ECT(-1)	-0.553	-2.102	0.047	-0.563	-2.104	0.047	-0.556	-2.085	0.049
FDI	ECT(-1)	-1.232	-3.625	0.006	-1.232	-3.391	0.008	-0.885	-5.051	0.001

Table 9 presents the long-run coefficients from the co-integrating equation with their t-statistics, and p-values, it reveals there is a positive and significant long-term relationship between the Islamic banks financing and all the selected macroeconomic variables which supports all of the findings in the preceding sections.

Table 9. The Long-Run Coefficients

Eq	Variable	Restricted constant			Unrestricted constant		
		Coefficient	t-Statistic	Prob.*	Coefficient	t-Statistic	Prob.*
GDP	LOGIBL	0.263	14.923	0.000	0.263	14.923	0.000
GFCF	LOGIBL	0.329	19.840	0.000	0.329	19.840	0.000
LF	LOGIBL	0.086	9.903	0.000	0.086	9.903	0.000
NX	LOGIBL	0.302	3.188	0.004	0.302	3.188	0.004
FDI	LOGIBL	0.556	4.932	0.001	0.556	4.932	0.001

OVERALL DISCUSSION

In general, the findings reveal a positive and significant long-term relationship between the Islamic bank financing and selected macroeconomic variables i.e., gross domestic product, capital accumulation and foreign direct investment net inflows in Saudi Arabia. These results are consistent with the work of Gudarzi Farahani et al. [21] and Goaied et al. [22] where both studies have confirmed that Islamic financing has a positive and long-term influence on economic growth in terms of gross domestic product and foreign investments.

Furthermore, the outcome of this work has shown that a negative and significant relationship between the Islamic banks financing and employment, but the magnitude of the coefficient is very small. Due to the under development of Islamic banking sector in Saudi Arabia, most of the economic activities rely on conventional banking system and any divergence brings the inefficient allocation of loanable funds and henceforth lower employment opportunities. This outcome is consistent with the work of Iqbal et al. [23] where it was stated that the development of Islamic banking was slow due to the well establishment of conventional banking system, and it has affected the Islamic bank finance allocation.

CONCLUSION

This study has evaluated long run relationship between the Islamic bank financing and economic growth for Saudi Arabia, covering the time period 1990-2015 while employing the autoregressive distributed lags (ARDL) approach. The outcome of the work showed that the Islamic banking system as a channel that positively affects country's economic development process through national income, investments and foreign direct investment net inflows. Furthermore, the outcome of this work showed that negative and significant relationship between the Islamic banks financing and employment. This study suggests that the Kingdom of Saudi should strengthens its position to be the most substantial center of Islamic financial industry and to become as the main motivation for the growth of Islamic financial sector worldwide. The government should design a profound short run and long run economic policies to develop Islamic financial infrastructure for promoting the Islamic financial system. These economic policies should focus on the long-term financing by Islamic banks and increased level of profit and loss sharing activities in the country. For future works, the authors recommend to compare the impact of financing of Islamic and conventional banking systems on economic growth.

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