An Empirical Evaluation of the Impact of Islamic Financing on Economic Growth in Saudi Arabia

Thesis submitted in partial fulfillment for the Degree of Master in Islamic Financial Management in accordance with the requirements of Effat University

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Declaration

This work is original and has not been previously submitted in support of any degree qualifications or course.

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Abstract

This research empirically investigates the relationship between the Islamic Banking and its contribution to economic growth in the Kingdom of Saudi Arabia (KSA). The majority of the literature on the relationship between banking system and economic growth concentrates on conventional banking. Recently, some studies have focused on Islamic banks in different countries, and current research examines the 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 research seeks the answer to the question on the long run and short-run relationship between Islamic bank financing and economic growth in Saudi Arabia. This study covers the annual time series data from 1990 - 2015 for the macroeconomic variables and data pertaining to Islamic financing, and employs the autoregressive distributed lag (ARDL) approach to examine the empirical relationship between the selected variables. This research identifies that Islamic bank financing positively affects the macro economy of Saudi Arabia as the majority of the variables in the sample demonstrate a positive and significant relationship with Islamic bank financing. Due to the significant impact of Islamic banks' financing on economic activity, this research provides an insight for policy makers to divert more resources for the development of Islamic financial system in the country.

Keywords: Islamic banking financing, economic growth, macroeconomics, ARDL, Saudi Arabia.

ملخص

يستعرض هذا البحث دراسة تجريبيه للعلاقة بين الصيرفة الإسلامية ومساهمتها في النمو الاقتصادي للمملكة العربية السعودية. أغلب الدراسات حول العلاقة بين النظام المصرفي والنمو الاقتصادي تركزعلى المصارف التقليدية. في الآونة الأخيرة، ركزت بعض الدراسات على المصارف الإسلامية في بلدان مختلفة. يهدف البحث الحالي لدراسة دور تمويل المصارف الإسلامية في المملكة العربية السعودية لتحفيز النمو الاقتصادي للبلاد من خلال تأثيره على الناتج المحلي الإجمالي, إجمالي تكوين رأس المال الثابت ,الاستثمار الأجنبي المباشر, التوظيف والتجارة. ويسعى هذا البحث إلى الإجابة على السؤال ماذا كان هنالك علاقة طويلة المدى بين تمويل المصارف الإسلامية والنمو الاقتصادي في المملكة العربية السعودية بالإعتماد على نموذج الانحدار الذاتي للمتباطئات الزمنية الموزعة Autoregressive Distributed lag model (ARDL) وذلك باستخدام بيانات سنوية للفترة 1990- 2015 لمتغيرات الاقتصاد الكلي والبيانات المتعلقة بالتمويل الإسلامي. وتؤكد نتائج هذه الدراسة أن التمويل المصرفي الإسلامي يؤثر بشكل إيجابي على الاقتصاد الكلي للمملكة العربية السعودية حيث أن غالبية المتغيرات في العينة تظهر علاقة قوية و إيجابية مع التمويل المصرفي الإسلامي. ونظراً للتأثير الكبير لتمويل البنوك الاسلامية على النشاط الاقتصادي فإن هذه الدراسة توفر رؤية لصانعي السياسات لتحويل المزيد من الموارد لتطوير النظام المالي الإسلامي في البلاد.

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1. Introduction

1.1.Relationship between Conventional Banks and Economic Growth:

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. 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. However, the difference between these interest rates is the profit of banks. Whatever the case, 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.

In fact, the subject of financing and economic development dates back to the 19th century when Schumpeter (1911) argued that the services of financial intermediaries enhance the economic growth by their impact on productivity growth. These services include; mobilization of savings, assessing the investment venture, making transactions easy, managing risks, monitoring firms, and allocating capital properly. His study suggested that technological innovation comes from servicing and financing investment ventures. However, the function of financial intermediaries appears directly by their support to productive enterprises or by their support to the technological innovation that enhances the productive enterprises and these two factors are the important determinants of the economic growth. McKinnon (1973) further confirmed the existence of relationship between the financial and real sector, henceforth development of financial sector leads to growth in the real sector. In his book, he presents a "financial sector led

growth theory" for developing economies and suggests that poor countries can develop their economies through financial sector's labialization and increasing both its opportunities and incentives.

El-Galfy and Khiyar (2012) suggested that 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. Levine (2005) highlighted that financial system offers many roles that encourage technological innovation and helps to decrease the cost arising from collecting information, executing transactions and taking decisions.

Empirical literature suggests that the financial system including financial intermediaries affects economic growth due to their following functions affecting the savings and investment decisions in the country:

First, preparation of information and allocation of resources; It is difficult and costly to get ex ante information and evaluate investments. Financial intermediaries are mediators in financial transactions between parties that may help to decrease these costs. The reason is that prior to lending, they generate information , evaluate , and contribute to better allocation of resources, henceforth these institutions play a vital role to increase the productivity and make the economy grow faster.

Second, surveillance of firms and better corporate governance; financial intermediaries enhance the corporate governance; they decrease the cost of surveillance which in turn has positive effects on capital allocation and economic growth.

Third, better control for risk; financial intermediaries help to reduce risks linked with individual or corporate projects and provide instruments for trading, pooling, and diversifying risk. This hedging contributes to better capital allocation and saving rates which has long term impact on economic growth. People who save money in banks don't tend to bear any risk that is different from risky investment in the stock market associated with high returns as well. Furthermore, investment in the stock market is characterized with inconsistent information, high costs of transactions and limited liquidity with increased liquidity risks. Whereas banks can raise liquidity and decrease the associated risk, therefore contributing to economic growth.

Fourth, pooling of savings; mobilization of funds from savers to investment is a costly process. It involves the transaction costs of collect the loanabl funds from savers and reduce the information asymmetries to create trust and confidence among savers. Henceforth, financial intermediaries enhance economic growth by pooling more savings and exploiting economies of scale.

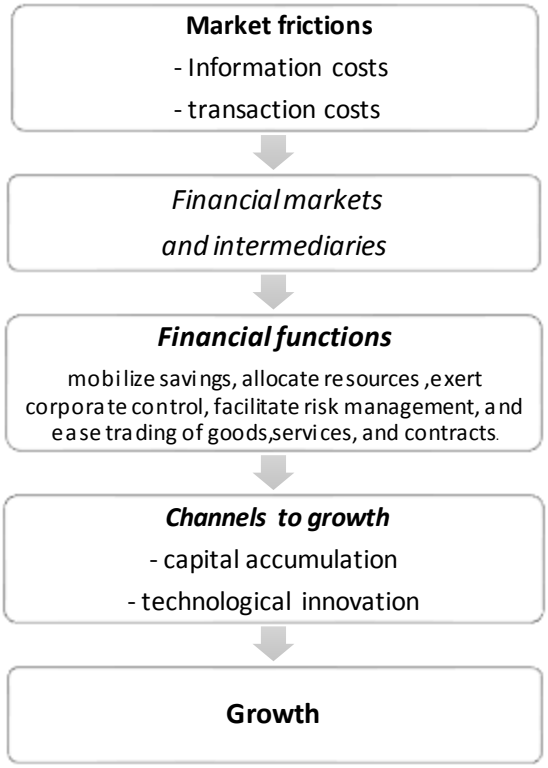


Figure 1. A theoretical Approach to Finance and Growth (Ross Levine 1997)

In contrast, Galindo and Micco (2004) classify the banking system as; the banks owned by government and the banks owned by the private sector and then examine the relationship between banks' financing and manufacturing sector growth. The study concludes that the government owned banks may stimulate political enterprises rather than promoting economic growth.

1.2.How Islamic Banking System Differ from Conventional Banking system

Islamic banking system is deferent from conventional banking system; it is established as an alternative to the posterior. El-Galfy and Khiyar (2012) summarize these features of banks who deal according to Islamic principles; prohibition of Riba, Garar, unethical investments, Darar, and impulse. Also, they indicate the important features of Islamic banking system that relate finance to real assets , focus on fair contracts, profit sharing principle, Zakah and Qard Hasan discussed as following;

1- Riba: that literally means an addition or increase which is prohibited in Islam to protect the poor people who needs money from the exploitation of the rich who has surplus ,however, riba's is mainly related to interest rate – an extra amount whether from lending or commodities trading (Khan 2011). Such dealings are prohibited in Islam and are not applied in Islamic banking and altered by profit-loss sharing while interest is an important feature of conventional banking. In Islamic banks, profit and loss should be divided between the parties. Provider of principle is not considered as a loan provider but as a partner, so bank share profit and loss with the other party because prohibition of Riba.

2- Prohibition of Garar (uncertainty): contractual parties should beforehand show a transparency of both intentions and information such as object, price and delivery, while keeping them fixed otherwise it will be perceived as uncertainty which is forbidden in Islam (Tatiana, Igor, Liliya 2015). Cheating as Garar appears when one of contractual parties does not disclose all the available information and leads to uncertainty for the second party, so Shariah principles prohibit it.

3- The prohibition of unethical investments: that are harmful for social interests and not follow Shariah law, so the investments related to products such as pork, alcohol, pornography, gambling and conventional instruments with fixed-income is prohibited (Tatiana, Igor, Liliya 2015). Also, investments that are permitted in its nature must be avoided if they contain prohibited activities as a part of them such as investment in hotel in western which has a part of its income from prohibited activities. If for necessity an investment in such investments is done, so purification for the income also must be done. All these investments are avoided by Islamic banking system.

4- Prohibition of Al-Darar: indicates that even if something is permissible, but it could bring harmful effects then it that is considered as prohibited action. In saying of prophet "there should be neither harming - Darar, nor reciprocating harm - Diraar".

5- Relates Islamic financing to real assets and exchange of goods and services: that explains a reason for the Islamic concept that money can't produce money where Maisir is forbidden which is defined by Muhammad Ayub as "wishing something valuable with ease and without paying an equivalent compensation for it or without working for it, or without undertaking any liability against it by way of a game of chance". However, Islamic banking should trade and invest in assets which have characteristics of Mudarabah and Musharakah products, so it could be considered as entity that aims productivity and economic welfare. Also, it should invest in

assets that have characteristics of Ijarah and Murabaha which have commodities or services exchange. However, using such instruments reflects a positive effect on economic growth.

6- The affirmation on fair contracts: Contractual parties should be willing for the contract "O you who believe! Eat not up your property among yourselves unjustly except it be a trade amongst you, by mutual consent. And do not kill yourselves (nor kill one another). Surely, Allah is Most Merciful to you" (**Al-Nisa verse No: 29)**. Also, both should fulfill the requirements of the contract between them, so each fulfills obligations of other and deserves his rights "O ye who believe! fulfill (all) contracts" (Al-Maidah verses No.120).

7-**Paying of Zakah**: According to accounting principle established by Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) , all Islamic banks should pay Zakah for wealth that is owned at least for one year, so banks are responsible to society through paying Zakah for poor peoples. Also, sometimes Islamic banks are supposed to offer Qard Hassan.

1.3. Role of Islamic Banking in Economic Growth

Gheeraert and Weill (2015) suggested that Islamic banks using Islamic financial products specially that based on profit-loss sharing such as Mudarabah and Musharakah contracts are more efficient to evaluate the projects proposals, therefore enhance the productivity by effective allocation of capital. Also, this study points out that some Muslims who are reluctant to use conventional banking to save their money are more inclined to use Islamic banks and henceforth Islamic banks contribute more to pool the savings. Through Islamic banking, both costs of information by depositors and cost of collecting savings by productive entities will be reduced which in turns enhance the growth.

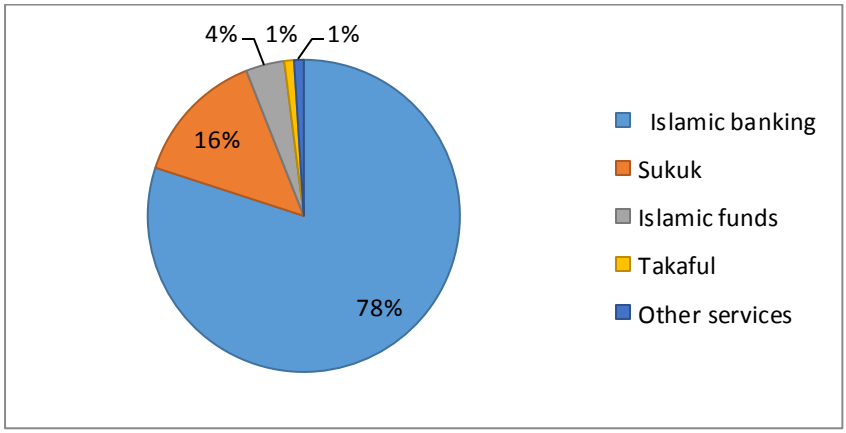
Siddiqi (1999) identifies many advantages of Islamic banks that prohibited interest over the conventional banks and how these advantages motivate economic growth. The study suggests that Islamic banks will be far from the game of chance which appears when exchange money to money, so such banks raises stability. Moreover, these banks synchronize both required returns and payments commitments which decrease instability in the markets, and they avoid the main source of instability because of profit and loss sharing. The Islamic banks as a financer will have to share the returns from the activities of users of financing, so optimal allocation of loanable funds for more valuable investments or projects. Islamic financing is linked with economy primarily because of profit and loss sharing feature, so the activities in economy should create value to be shared by parties of contracts .Also, Islamic banks includes contracts that do not depend on profit and loss sharing. Using such contracts, banks guarantee specified returns such as Ijarah, Murabaha, Salam, and Istisna'a still better than exchanging money for money which is a way of gambling. These contracts concentrate on exchanging money for goods and services which in turns helps to increase the economic activities.

To evaluate the role of profit and loss sharing (PLS) principle, Dahduli (2009) examines the question "*how would the Islamic finance cornerstone – the PLS – be the best solution for innovation and economic growth*?". He argues that although the capitalist economies are emerging, but economic and financial crisis appear usually as an outcome of poor management of liquidity or credit risk. However, Islamic banks practice profit and loss sharing through the actions of leading business and projects that makes such projects far from the troubles of cash risk management, so more projects will be financed by Islamic banks and more profit will be distributed to savers .Also, he concludes that Islamic banks mission statements supposed to include the welfare and the growth of the nation beside banks' own interest. On the other hand,

Johnson (2013) states that because Islamic banks conduct profit and loss sharing contracts, they bear more risks ,so banks may be more prudence in their financing which causes minimizing innovation. Also, the partners who take Islamic banks financing will not be highly encouraged to do their best work in the investment project because of the restricted size of risk they take.

1.4. Overview of financial Sector in Saudi Arabia

During the last few years, Islamic banking and finance (IBF) has got more importance because of the higher economic growth of countries with large Muslim population, however it has already been practiced from the beginning of Islam (Nichita, Kagitci ,Vulpoi, 2013). The development of Islamic banking and financing system is clear with respect to growth of economy all over the world where in the twenty-first century IBF showed a distinction in the global financial arena ,however, it was noted that IBF appeared more and more in Western nature of it with many theories that are probably used as perceptions for that Western nature during the last years ,so Islamic banking showed the ability to overcome the conventional banking in Europe (Nichita, Kagitci ,Vulpoi 2013).



Source: Islamic Finance Report (2015)

Figure 2. Structure of the Global Islamic Finance Industry

Figure two shows that Islamic finance represents about 1 percent market share in the global financial industry (Saudi Arabia – Islamic Finance Report November 2015). In 2014 ,Islamic finance industry globally includes many sectors which are Islamic banking that had the highest portion 78% than the other sectors, Sukuk came after that which took 16%,then Islamic funds with 4%,followed by Takaful which had just 1% market share and finally other services with again 1%. However, at the end of 2014 year over year Islamic banking had 75% still the highest portion, then sukuk by 14% and Islamic fund by 11% (Saudi Arabia – Islamic Finance Report November 2015).

The Kingdom of Saudi Arabia (KSA) is an Arab state specifically located in the south-west of the continent of Asia in the Arabian Peninsula, Middle East. Also, it is the largest country in the Middle East and situated between the Persian Gulf and the Red Sea. Saudi Arabia is a rich country in natural resources where its economy is highly depends on oil and natural gas. Moreover, it has an Islamic position among nations because of the presence of the Two Holy Mosques. Saudi Arabia has a population of 30886545 in 2014 (World Bank, 2015).

During the last years, Saudi Arabia experienced substantial growth in its economy. The gross domestic product (GDP) that indicates the production level of the country has growth rate of 1.41% and 1.28% in 2013 and 2014 of respectively (SAMA 2015). Also, total employment in the country has increased by 8.27% and 3.27% over the years 2013 and 2014 respectively (World Bank, 2015). Similarity, the gross fixed capital formation which display investment has increased from SAR724950 million in 2012 to worth of SAR732465.65 million in 2013 up to SAR771838.343 million in 2014(based on SAMA data). On contrast, the country's economic openness displayed by the foreign direct investment net inflow (% of GDP) has decreased over years 2012, 2013 and 2014 having 1.65, 1.19, and 1.06 respectively (World Bank, 2015), as well

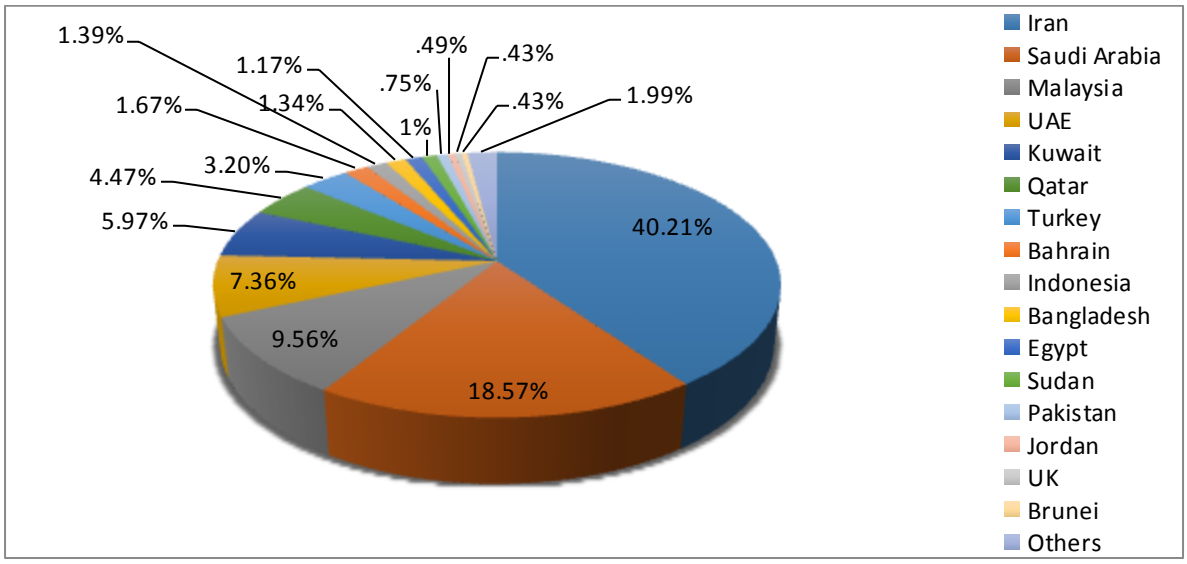
as for net export which has decreased from SAR 873029 million in 2012 to SAR 778942 million and SAR 632246 million in 2013 and 2014 (SAMA, 2015). However, the country generally has classified as one of the top countries around the world in terms of the high and strong macroeconomic stability having a little debt and a surplus in its budget where it classified in the 4th position (World Economic Forum, 2015).

Saudi Arabia financial system in terms of easily access to loans is rated as the 27th worldwide which is one of the advanced ranks while in term of the ability to use and obtain financial services, it is ranked the 48th (World Economic Forum, 2015). Saudi Arabia financial system rivals other systems not just in specific regions, but around the world. Saudi Arabia Banking system contains; Islamic banks, conventional banks with Islamic windows and foreign banks. There are twelve banks offering Islamic banking services, including both Islamic banks and conventional banks with Islamic windows in Saudi Arabia i.e. Saudi British Bank, Saudi Investment Bank, Bank Al-Ahli, Banque Saudi Fransi, Riyad Bank, Samba Financial Group, Arab National Bank, Saudi Hollandi Bank, Al-Rajhi Bank, Bank AlJazira, Bank Al-Bilad, Alinma Bank. The last four banks mentioned are totally Islamic banks. Al-Rajhi Bank is the biggest Islamic bank among Islamic banks in KSA and around the world. It was founded in 1957.In KSA; this bank has the higher spread of branches and automated teller machine. Also, it runs in Islamic countries that are Kuwait, Jordan, and Malaysia.

The macro economy of the Kingdom of Saudi Arabia largely relies on petroleum exports, so the economy at large as well as liquidity available to society perhaps affected because of the drop in petroleum prices since 2014 (Islamic Finance Report November, 2015). Recent decrease in price of oil also exerts a pressure on Islamic banking and finance (IBF) sector in the country. In Saudi Arabia, there is a growing demand for Islamic financial assets because of the pursuit of

the kingdom's government to make KSA strengthens its position as the most important center of Islamic financial industry and to make KSA the primary motivation to the growth of Islamic financial sector worldwide (Saudi Arabia – Islamic Finance Report November 2015).

Islamic financial market is a key component of the Saudi financial sector as higher percentage of assets belong to Islamic banks around half of Saudi Arabia financial market. During the past ten years, the growth of these assets was mostly related to rising investments that follow Islamic principles through conventional banks' Islamic windows (Saudi Arabia – Islamic Finance Report November 2015).



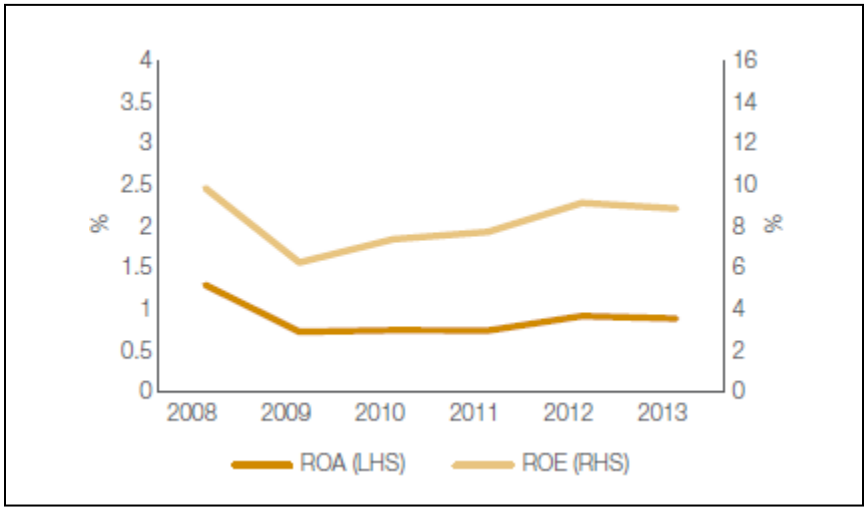
Source: *Source: Regulatory authorities, Bloomberg, Zawya, central banks, individual institutions, corporate communications, The Banker, KFHR. (Islamic Financial Services Board, 2015).*

Figure 3. Shares of Global Islamic Banking Assets (H12014)

In 2014, Malaysia was ranked as the largest Islamic finance economy; the Kingdom of Saudi Arabia follows the rank, having assets more than USD 338 billion. Compared to all countries around world, KSA Islamic banking has largest prevalence rate than the conventional because more than half of inhabitance are tended to it. Total Islamic banking assets has a growth

by 15% over the year in Saudi Arabia while from total non-Islamic Banking, it remained by 7%.Figure three show that all over the world, in the first half of 2014, these assets in Iran is about 40.21% the highest portion, then Saudi Arabia comes in the second place with about 18.6% and 51.3% of the total local financial banking assets (Islamic Financial Services Board, 2015).

Saudi Arabia banking industry growth is affected by the financial crisis, but still better than other. The most important factor that affects banking industry in Saudi Arabia positively and makes it more effective, is the imposition of Islamic laws that is attractive to many countries to follow in their operations (Nichita, Kagitci ,Vulpoi 2013).



Source: Islamic Banking Sample, KFHR. (Islamic Financial Services Board, 2015).

Figure 4. Average Return on Assets and Equity for Islamic Banking Sector

Figure f our shows a survey conducted by Islamic Financial Services Board (IFSB), while collecting a sample of 59 banks in eleven countries from 2008 to 2013. The aggregate assets of Islamic banking for these countries (except Iran because of the limitation of data) increased by compound annual growth rate of 16.6% during the sample period. During 2008, Islamic banking sector for the sampled countries, earned an average return on assets around 1.3% while average

return on equity remained around 9.9%. Compared to 2009 after the financial crisis, there was a clear decrease; it became 0.7% average return on assets and 6.3% on equity. Moreover, in 2013 sample showed average return on assets 0.9% and on equity equals to 8.9% .Otherwise in 2013, steady returns was shown in Saudi Arabia where return on asset about 1.84% and return on equity equal to 12.75% ,and cost-to-income ratio was a little decreasing (Islamic Financial Services Board, 2015).

1.5. Research Problem and Contribution

Since Saudi Arabian 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 in the country. This fact provides us a base to fill the gap in the limited literature by examining the relationship between Islamic financing and economic development of the country. Henceforth, this research explores the relationship between Islamic banking and economic growth in the kingdom of Saudi Arabia. Previously, studies pertaining to Saudi banking sector concentrate on conventional banking system and relate it to economic growth. However, recently, literature on the role of Islamic bank financing is rising in many Islamic countries. To the best of our knowledge, there is only one study available on Saudi Arabia Islamic banks which discusses the effects of Islamic banks on economic growth in Saudi Arabia, though our study distinguishes itself; while considering a different set of economic variables like employment and trade, also we select auto regressive distributed lags (ARDL) model, and finally this study differentiates itself in term of the selection of sample period.

1.6.Theoretical Concerns / Situating the Study in the Field and Research Questions

This research aims to investigate the long run relationship between the financing of Islamic banks and important macroeconomic factors such as trade, employment as well as the other factors i.e. gross domestic product, gross fixed capital formation, and foreign direct investment. This study is based on the main research question "Does Islamic banks financing in Saudi Arabia have an impact on the long-run growth of economy"? This research explores the impact of Islamic bank financing for various channels of economic growth by modeling these sub-questions:

- Do Islamic banks financing influence trade in Saudi Arabia?

- Do Islamic banks financing stimulates employment in Saudi Arabia?

- Do Islamic banks financing influences gross domestic product in Saudi Arabia?

- Do Islamic banks financing stimulates gross fixed capital formulation in Saudi Arabia?

- Do Islamic banks financing influences foreign direct investment inflow in Saudi Arabia?

This research comprises of five chapters. Chapter one outlines the introduction which provides background information on; the role of financial sector to promote economic growth, difference between Islamic and conventional banking systems, the relationship between the Islamic banking system and economic growth and an overview on the macro economy and the Islamic finance and banking sector in the Kingdom of Saudi Arabia .Also, the logical reason for the study is shown in this chapter. Chapter two includes a review of the literature that covers the types of the relationship between financial development and economic growth as well as empirical evidences on such relationships. Moreover, chapter three discusses the data,

methodology, estimation of results and analysis of the findings. The last chapter provides the conclusion and limitations of the study, and suggestions for future studies.

2. Literature Review

2.1.Finance-Growth Nexus and Empirical Evidence on Islamic Banking and Economic Growth

The theoretical literature dating back to Bagehot (1873) and Schumpeter (1911) and later broadened by Hicks (1969), McKinnon (1973), Shaw (1973) and Diamond (1984) highlights the importance of financial intermediation in facilitating economic activity. This fundamental link is straightforward, since the efficient allocation of financial resources decreased the transaction and information costs, facilitates entrepreneurship and motivates innovative ideas, which in turn set a path of economic development through the rapid accumulation of physical and human capital.

Patrick (1966) highlighted the "demand following" and "supply leading" phenomena to indicate the relationship between growth of financial system and economic growth. According to demand following hypothesis, economic growth leads to higher demand for financial services, which induces the larger supply of these services, and this higher demand transmits to the growth of financial sector. Therefore, low demand on such services in developing countries causes less financial institutions to be existing. On the other hand, the “supply-leading” hypothesis assumes that the financial system with more financial entities supplying more financial products and services before having demand for such resources ,helps in the growth of economy, so this theory attempts to increase the growth of an economy through the financial development. In addition, bi-directional relationship may exist which indicates that each of them, finance and growth, lead to the other, also, the relationship may not exist.

The financial services are considered as the main drivers of innovation and growth and McKinnon (1973) and Shaw (1973) supplemented this argument. The McKinnon - Shaw paradigm postulates that a poor functioning financial system slows down the economic growth in the country and a highly controlled financial system will further affect the quality and quantity of investments and therefore lower economic activity. Furthermore, King and Levine (1993) support this argument and investigate the long-run relationship between financial development and economic growth for the sample of 80 countries covering the period 1960-1989. The study finds that an increase in the development of financial system has a positive impact on the current and long run economic growth. The findings support the view of J. Schumpeter (1911) that the financial development stimulates the economic growth.

Moreover, Beck *et al.* (2000) showed additional empirical support of the significance of financial development to economic growth. The study employs the legal origin of each country as instruments to extract the exogenous component of financial intermediary development and uses the real GDP per capita growth and sources of growth including private savings rates, capital accumulation and total factor productivity growth. Data are averaged over the period 1960-1995 for 63 countries two econometric techniques are used that are pure cross-sectional instrumental variable estimator and the system dynamic-panel estimator. The study finds a strong positive long-run effect of the development of financial intermediary on both real per capita GDP growth and total factor productivity growth. While combining the financial markets and financial institutions as the financial sector, Beck and Levine (2004) investigated the independent effect of financial development on economic growth of a panel of 40 countries. This study considered both banks and stock markets as the indicators for financial development and gross domestic product as measure for economic growth and finds that the financial sector development has a

strong positive effect on economic growth and these findings are consistent with Levine and Zervos (1998).

To find the relationship between financial sector development and economic growth for emerging economies, Demerits & Hussein (1996) investigated the causality relationship between financial development and economic growth for 16 emerging economies and the study finds a very small evidence for the supply – led argument and estimates for few countries in the sample also reveal demand-following view. However, the study shows the bi-directional relationship between financial development and economic growth to a large extent.

On contrast, (Lucas, 1988) believes that there is no causality between finance and economic growth and argues " insofar as the development of financial institutions is a limiting factor in development more generally conceived I will be falsifying the picture, and I have no clear idea as to how badly. But one cannot theorize about everything at once. I had better get on with what I do have to say."Similarly, Chandavarkar (1992) points out that "none of the pioneers of development economics, including three Nobel Laureates (Bauer, Colin Clark, Hirschman. Lewis, Myrdal, Prebisch. Rosenstein Rodan. Rostow, Singer, and Tinbergen), even lists finance as a factor in development".

However, empirical evidences regarding the relationship of Islamic banking and economic growth are limited, the reason is that the interest of Islamic banking and finance has increased just in the last four decades, unlike conventional banking, but these studies have increased in the recent years having various orientations of the relationship as the following:

Furqani & Mulyany (2009) find long-term and causality relationship between Islamic banks and economic growth in Malaysia using quarterly data from Q1:1997 to Q4:2005, for the variables Islamic banks financing (as proxy of Islamic banks development), real gross domestic

product (GDP), real gross fixed capital formation (GFCF), and net exports. The results show the existence of long run relationship between Islamic bank financing and GDP and GFCF, and this study does not find long run relationship between the Islamic banks financing and trade. In a more recent study, Majid& Kassim (2015) find both short-run and long-run relationship between Islamic banks and financial institutions (IBFIs) and economic growth for Malaysia, covering the time period Q3; 1997 to Q1; 2009. The study indicates a long-run relationship between the Islamic banking sector development and economic growth, inflation and openness of economy This result are consistent with the findings of Manap et .al (2012) study that employs real GDP, real gross fixed capital formation GFCF and Islamic bank's total financing for time period 1998: Q1 to 2012: Q2, while using Toda-Yamamoto Wald test and bootstrap Granger causality test. The study supports the supply led hypothesis between Islamic banking development and economic growth in Malaysia.

In the same context Abduh and Chowdhury (2012) find long-run relationship between Islamic banking development and economic growth in Bangladesh using quarterly time series data from Q1:2004 to Q2:2011. Total deposits (TD) and total Islamic banks financing (TF) are used as proxies to the development of Islamic banking, and GDP is used as an indicator of economic growth. This research suggests bi-directional relationship between Islamic banks total financing and economic growth in both long and short runs.

Farahani and Hossein (2012) study aims to find the long-run and short run relationship between the development of Islamic banks and economic growth in Iran and Indonesia using quarterly and panel data covering the period from Q1:2000 to Q4:2010 . Total Islamic banks financing is the variable used to measure Islamic banks development, and both real gross domestic product (GDP) growth and gross fixed capital formation (GFCF) are the variables used

to measure economic growth. Given the results from the co-integration tests, ECM based causality test found a bi-directional relationship between the Islamic banks development and real GDP growth, and also between the Islamic banks development and investment for both countries.

Similarly, Abduh and Omar (2012) investigate both short and long run impact of Islamic banking development on economic growth in Indonesia. The study employs the quarterly data from Q1:2003 to Q2:2010. The variable Islamic banks financing IBF for total banks are used to measure the Islamic banking development and both GDP and gross fixed capital formation are used to measure the economic growth, while employing the ARDL and Granger causality approaches. The study concludes that there is a bi-directional relationship between Islamic banks financing and economic growth. In a multivariate transformation, the study finds a significant short-run and long-run relationship between IBF and selected macroeconomic variables. Also variance decomposition from error correction model is used to find proportional variation caused by the development of Islamic banking in the economic growth of the country.

To analyze the relationship between the development of Islamic financial system and economic growth, Tabash & Dhankar (2014) employ the total Islamic banks' financing by all Islamic banks in the kingdom of Saudi Arabia as the indicator of Islamic financial system whereas gross domestic product (GDP), gross fixed capital formation (GFCF), and foreign direct investment inflow (FDI) as the measures of economic growth. The study uses annually time series data from 1990 to 2010. The study finds a long-run relationship between Islamic banks financing and the selected economic variables. The causality test finds unidirectional relationship between Islamic banks financing and GDP, GFCF and FDI which indicates that Islamic banks financing contributes to the growth of country's economy through its impact on national income

and investment and induce more foreign direct investment inflows to the country, so this study findings supports the supply-leading theory.

Al-Oqool et al (2014) investigate the relationship between Islamic banking development and economic growth for Jordanian economy, while using the annually time series data for the period 1980 – 2012. Development in Islamic banking is represented by both total Islamic banks financing and total saving deposits and the country's real GDP is used to measure economic growth. The study finds a long-run relationship between total Islamic banks financing and real GDP. The relationship between total Islamic banks financing and real GDP is bi-directional, indicating that the Islamic banking system financing in Jordan can contribute to economic growth of the country, and it is unidirectional from real GDP to total saving deposits, reflecting that Islamic banks have constrained liquidity or have scarce tools of investment, or there is lack of investment opportunities in the country. Also, the short-run causality does not exist between real GDP and Islamic banking development variables.

Unlike previous studies, Goaied & Sassi (2011) negates the relationship between the bank development and economic growth for a panel of 16 Middle East and North Africa (MENA) countries, covering the time period 1962 to 2006. This study employs GDP per capita growth as the dependent variable and independent variables are both measures of macroeconomic stability, that are rate of export plus import to GDP or trade openness, inflation rate and rate of government consumption to GDP, and two financial measures are the rate of liquid liabilities to GDP and credit to private sector. The estimates reveal no relationship between bank development and economic growth. While focusing on Islamic financial system in particular, the study employs the same analytics for 15 MENA countries from 1993 to 2006 and explores the relationship between Islamic banks development and growth. Total credit by Islamic

banks is considered is used as an indicator for Islamic banking development. Estimates show that both conventional banking at one and two-steps estimation and Islamic banking at two-steps estimation has a negative effect on growth. To check the robustness study classifies the sampled countries as oil exporting and non-oil exporting countries and finds negative relationship between the credit expansion and economic growth. However, study identifies a positive and significant relationship between credit expansion and economic growth for non oil exporting countries.

More recent study Echchabi & Azouzi (2015) examine the relationship between Islamic finance development measured by total Islamic banks financing and economic growth which represented by total trade, gross fixed capital formation (GFCF), and real gross domestic product (GDP) in the United Arab Emirates, using quarterly data from 2004:Q1 to 2011:Q4. The study finds no linkages between the Islamic banking development and economic growth in UAE. Also, study doesn't find any short run relationship between total Islamic banks financing and real gross domestic product (GDP), gross fixed capital formation (GFCF), and trade.

Henceforth, both theoretical and empirical literature identify a positive relationship between financial sector development and economic growth, availability of well-developed financial services facilitates more investment , which in turns transmits to higher economic growth. This finance – growth nexus is also applicable for Islamic bank financing and economic growth relationship, as majority of the empirical literature on Islamic bank financing has augmented this postulate.

Current research is a preliminary study to examine the relationship between the Islamic banking and economic growth for Saudi Arabia. This study differentiates itself from the previous literature as it aims on to evaluate the role of Islamic banking to generate more employment

opportunities and enhance more trade flows in the country. This study also employs a time varying methodology – autoregressive distributed lags (ARDL) model to determine the linkages between the Islamic financing activities and the macroeconomic growth of Saudi Arabia.

Table 1: Empirical litruture on the relationship between Islamic Banking and Economic Growth

Author(s) Years/	Study Title	Region/ Country	Variables	Methodology	Direction of Causality
Furqani and Mulyany (2009)	Islamic banking and economic growth: empirical evidence from Malaysia	Malaysia	-Islamic banks financing (IBF) -Real GDP -Real GFCF -Trade	-Vector error correction model -Johansen and Juselius co-integration tests -Granger causality test augmented with ECM	- Long-run bi-directional relationship exists between IBF and GFCF. - Long-run demand-following relationship exists between IBF and GDP. - No long-run relationship between IBF and trade. - No short-run relationship between IBF and GDP. -Short-run unidirectional relationship exists from GFCF to IBF.
Manap et .al (2012)	Islamic Banking-Growth Nexus: Evidence from Toda Yamamoto and Bootstrap Granger Causality Test.	Malaysia	-GDP -GFCF -IBF	Toda-Yamamoto Wald test and Bootstrap Granger Causality test.	Supply-leading between Islamic banking development and economic growth.
Abduh and Chowdhury (2012)	Does Islamic Banking Matter for Economic Growth in Bangladesh?	Bangladesh	-Total deposits (TD) -Total Islamic banks financing (TF) -GDP	- Johansen co-integration test - A Granger causality test	Long run and short-run bi-directional relationship exists between Islamic banks financing and economic growth, but not exist for total deposits.
Farahani, and Hossein (2012)	Analysis of Islamic Bank's Financing and Economic Growth: Case Study Iran and Indonesia	Iran & Indonesia	-Total Islamic banks financing - Real GDP -GFCF)	-ARDL bounds testing approach for co-integration assuming the conditional error correction (EC) -Granger causality test.	Both hort and long-run bi-directional relationship between Islamic banks financing and economic growth and capital accumulation.

Abduh and Omar (2012)	Islamic banking and economic growth: the Indonesian experience	Indonesia	-Total Islamic banks financing - GDP - GFCF	- (ECMs) which is involved in Autoregressive distributed lag(ARDL) - Granger causality test	-Bi-directional relationship exists between Islamic bank development and economic growth in both short and long run.
Tabash and Dhankar (2014)	Islamic Finance and Economic Growth in the Kingdom of Saudi Arabia (KSA)	Saudi Arabia	- total Islamic banks' financing - GDP - GFCF - foreign direct investment inflow	- co-integration test - Granger causality test	-a long-run-relationship exists between-Islamic-banks and economic growth. -Unidirectional long-run supply-leading -causality from IBF to all GDP, GFCF, and FDI.
Al-Oqooll et al (2014)	Financial Islamic Banking Development and Economic Growth: A Case Study of Jordan	Jordan	- total Islamic banks financing (IBF) -total saving deposits -real GDP	- Co-Integration test using the Johansen approach. - Granger causality test.	-long run relationship between both total IBF and total saving deposits with real GDP. Bi-directional relationship between Total IBF and GDP while Unidirectional from real GDP to total saving deposits. -The short-run causality is not exist between the variables.
Echchabi a nd Azouzi (2015)	Islamic Finance Development and Economic Growth Nexus: The Case of the United Arab Emirates (UAE)	UAE	- total Islamic banks financing - total trade - GFCF - GDP	- Co-integration test. - Granger causality test.	. -No long-run and short-run relationship exist between development of Islamic banking and GDP, GFCF, and trade.

3. Data, Methodology and Results

3.1.Data

To analyze the impact of Islamic bank financing on the macro economy of Saudi Arabia, this study employs 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 is collected from the individual annual reports of each bank in the sample. We use the total net loans by the selected Islamic banks 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.

3.2.Methodology

The relationship between Islamic financing and macroeconomic variables is represented by the following equations;

$$\text{Trade} = \propto_0 + \propto_1 \text{IBF} + \varepsilon \quad (1)$$

$$\text{employment} = \beta_0 + \beta_1 \text{IBF} + \varepsilon \quad (2)$$

Gross domestic product = $\gamma_0 + \gamma_1 IBF + \varepsilon$ (3)

Gross fixed capital formulation = $\delta_0 + \delta_1 IBF + \varepsilon$ (4)

Foreign direct investment inflow = $\rho_0 + \rho_1 IBF + \varepsilon$ (5)

Where: IBF shows Islamic banks financing, $\propto_0, \propto_1, \beta_0, \beta_1, \gamma_0, \gamma_1, \delta_0, \delta_1, \rho_0$ and ρ_1 are related coefficients and ε is the disturbance term. These models test the following hypothesis.

Null Hypothesis: $\propto_1 = \beta_1 = \gamma_1 = \delta_1 = \rho_1 = 0$

Alternative hypothesis: $\alpha_1 \neq 0, \beta_1 \neq 0, \gamma_1 \neq 0, \delta_1 \neq 0, \rho_1 \neq 0$

Main hypothesis

There is a long-run relationship between Islamic banks financing and economic growth.

Sub hypothesis

- Hypothesis1: There is a positive relationship between Islamic banks financing and trade in Saudi Arabia.
- Hypothesis2: There is a positive relationship between Islamic banks financing and employment in Saudi Arabia.
- Hypothesis 3: There is a positive relationship between Islamic banks financing and gross domestic product in Saudi Arabia.
- Hypothesis4: There is a positive relationship between Islamic banks financing and gross fixed capital formulation in Saudi Arabia.
- Hypothesis 5: There is a positive relationship between Islamic banks financing foreign direct investment inflow in Saudi Arabia.

3.3. Estimation and Results

Figures five to ten show the graphical representation of the selected variables related to Saudi Arabian economy. Figure ten shows an evident that the economy saw a sharp increase in Islamic bank financing after 2006 which indicates that this industry grows recently.

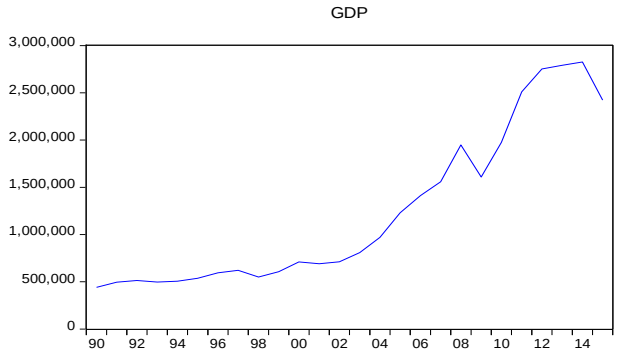


Figure 5. GDP Growth in KSA(1990-2015)

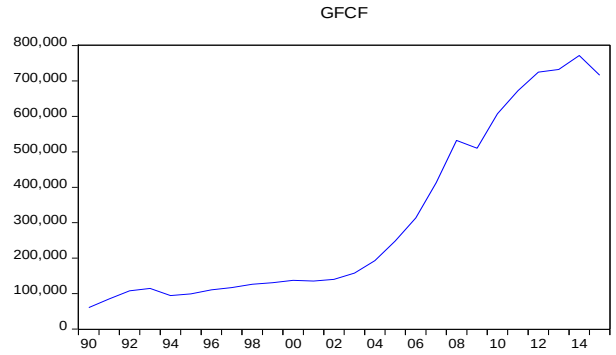


Figure 6. GFCF Growth in KSA(1990-2015)

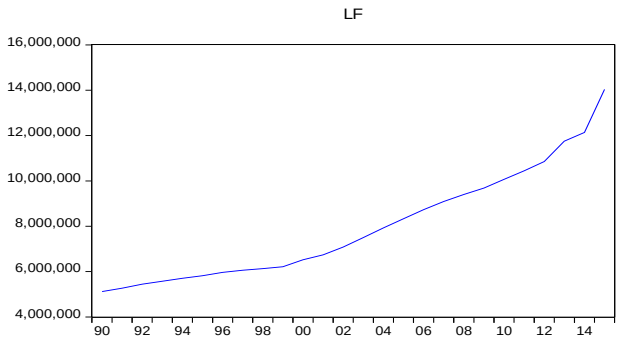


Figure 7. LF Growth in KSA(1990-2015)

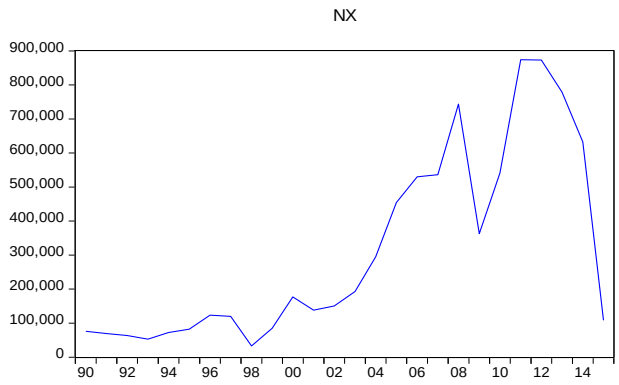


Figure 8. NX Growth in KSA(1990-2015)

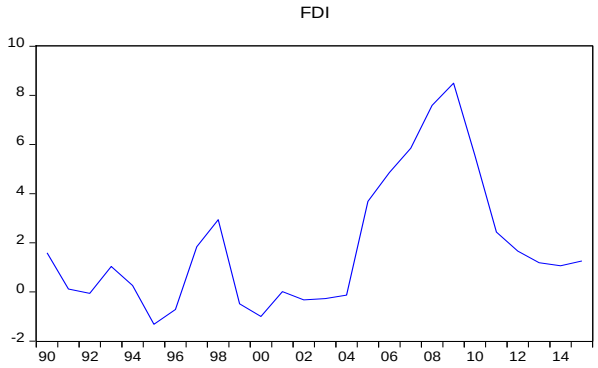


Figure 9. FDI Growth in KSA(1990-2015)

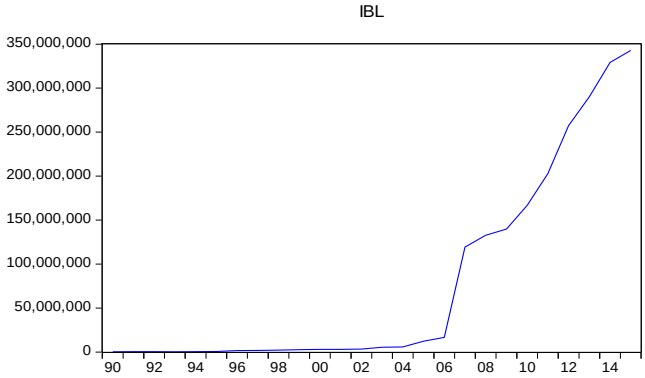


Figure 10. IBL Growth in KSA (1990-2015)

3.3.1. Descriptive Statistics

Table two shows the descriptive statistics of the data. We calculated the median value as the average of two middle scores and it is not the middle point of the data since number of observation for each variable is an even number (26). The range for the Islamic Banks Financing data is (342,723,878), which is near to the maximum financing indicating a very high growth in the field of Islamic financing in the last year compared to the early years. Skewness for most of the data series is around zero and kurtosis value surrounds 3, indicating the normal distribution for the selected variables in the sample.

Table 2: 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
Observations	26	26	26	26	26	26

Jarque-Bera test is conducted to determine if the variables are normally distributed. The test is defined as:

$$\frac{N}{6}\left(S^2+\frac{(K-3)^2}{4}\right) or\ N\left(\frac{s^2}{6}+\frac{(EK)^2}{24}\right) \quad (6)$$

where N is the number of observations, S is skewness of the sample, K is the kurtosis of the sample and EK is excess kurtosis (kurtosis - 3). The test considers the null hypothesis of normal distribution against the alternative hypothesis of non-normal distribution i.e. H_0 : 0, $H_1 \neq 0$, we can reject null hypothesis if the Jarque - Bera test statistic exceeds a critical value at the significance level of 1%, 5% and 10%. For 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.

3.3.2. Test of Stationarity - Unit root test

A time series is stationary when its statistical characteristics such as mean, variance, and autocorrelation are constant over time. On the other hand, it is not stationary when it has a changeable mean, variance, and autocorrelation. Therefore, it is important to convert the non-stationary time series into stationary to get a harmonious and trusted outcomes otherwise it cannot be used to predict and to forecast as it is expected to produce false outcomes about the relationship between variables.

To check the stationary of the data, we use Augmented Dickey-Fuller test which can be determined as in Equation (7):

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \alpha_i \sum_i^m \Delta Y_{t-1} + \varepsilon_t \quad (7)$$

We test the null hypotheses H0: $\delta = 0$ which means there is a unit root, so the data series is stationary against the alternative hypotheses H1: $\delta < 0$ which means there is no unit root, so the series is stationary. ADF is applied at level and at first difference. The lag-lengths for the test regressions are based on Schwarz Information Criterion (SIC) and results are represented in Table three.

Table 3: 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		

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). Since all the variables are integrated either I(0) or I(1), Pesaran Shin and Smith (2001) suggest ARDL approach to estimate the long term relationship between the variables.

3.3.3. Autoregressive Distributed Lag (ARDL) Approach

After checking for the properties of data, following Pesaran, Shin and Smith (2001), this research employs an autoregressive distributed lag approach (ARDL). A distributed lag model (also known as dynamic model) considers the effect of an explanatory variable over time rather than all at once. Although ARDL models have been used in econometrics for decades, they have gained popularity in recent years as a method of examining long-run and co-integrating relationships between variables (Pesaran and Shin, 1999).

An ARDL can be written as:

$$yt = \beta_0 + \beta_1 y_{t-1} + ...+ \beta_p y_{t-p} + \alpha_0 x_t + \alpha_1 x_{t-1} + \alpha_2 x_{t-2} + ... + \alpha_q x_{t-q} + \varepsilon t \quad (8)$$

where ε_t is a random "disturbance" term and explanatory variables with at least one lagged term are called dynamic regressors.

The ARDL / Bounds Testing approach of Pesaran and Shin (1999) and Pesaran *et al*. (2001) has some characteristics that make it preferable over conventional co-integration tests including;

- It tests variables that are integrated at level I(0), of order 1- I(1), or mutually integrated.
- It tests a small sample size of observations contrary to other co-integration tests.
- It only includes placing an equation which makes applying and interpreting such model is simple.
- It allocates various lag-lengths for the different variables included in the model.

To evaluate the impact of Islamic bank financing on selected macroeconomic variables through ARDL approach, we specify the following models as following;

$$LOGGDP_t = \beta_0 + \beta_1 LOGGDP_{t-1+} \beta_2 LOGGDP_{t-2+..+} \beta p LOGGDP_{t-p} + \alpha_0 LOGIBL_t + \alpha_1 LOGIBL_{t-1} + \alpha_2 LOGIBL_{t-2+ \ldots.+} \alpha_q LOGIBL_{t-q} + \varepsilon_t \quad (9)$$

$$LOGGFCF_t = \beta_0 + \beta_1 LOGGFCF_{t-1+} \beta_2 LOGGFCF_{t-2+\ldots.+} \beta p LOGGFCF_{t-p} + \alpha_0 LOGIBL_t + \alpha_1 LOGIBL_{t-1} + \alpha_2 LOGIBL_{t-2+ \ldots.+} \alpha_q LOGIBL_{t-q} + \varepsilon_t \quad (10)$$

$$LOGLF_t = \beta_0 + \beta_1 LOGLF_{t-1+} \beta_2 LOGLF_{t-2+\ldots.+} \beta p LOGLF_{t-p} + \alpha_0 LOGIBL_t + \alpha_1 LOGIBL_{t-1} + \alpha_2 LOGIBL_{t-2+ \ldots.+} \alpha_q LOGIBL_{t-q} + \varepsilon_t \quad (11)$$

$$LOGNX_t = \beta_0 + \beta_1 LOGNX_{t-1+} \beta_2 LOGNX_{t-2+\ldots.+} \beta p LOGNX_{t-p} + \alpha_0 LOGIBL_t + \alpha_1 LOGIBL_{t-1} + \alpha_2 LOGIBL_{t-2+ \ldots.+} \alpha_q LOGIBL_{t-q} + \varepsilon_t \quad (12)$$

$$FDI_t = \beta_0 + \beta_1 FDI_{t-1+} \beta_2 FDI_{t-2+\ldots.+} \beta p FDI_{t-p} + \alpha_0 LOGIBL_t + \alpha_1 LOGIBL_{t-1} + \alpha_2 LOGIBL_{t-2+ \ldots.+} \alpha_q LOGIBL_{t-q} + \varepsilon_t \quad (13)$$

3.3.4. Identification of the Long Run Relationship - ARDL Bounds Test

To examine the long run effect between the variables, we follow the Pesaran and Shin (1999) and Narayan (2004) and employ the ARDL "Bounds Test" approach. Pesaran, Shin, and Smith (2001) identify the lower bounds and upper bounds for the asymptotic critical values for the selected independent variables. The F statistics is estimated through the models specified above (equations 9 -13). If the F-statistic is greater than the upper bound at specific level of significance that indicates the existence of a long-run relationship between the

variables and if it is lower than the lower bound that indicates the absence of long-run relationship between the variables. Also, if it is in between that indicates non-determined relationship. Tables four, five and six show the estimated F statistics and their related critical values. The critical value bounds for F-statistic are specified by Pesaran et al. (2001) at significance level 1%, 5%, and 10% for both lower bound I (0) and the upper, bounds I (1).

Table 4: ARDL Bounds Test for Restricted Constant

Test statistic F		Significance level		
GDP	3.773	1%	I(0)	4.94
GFCF	3.141		I(1)	5.58
LF	1.539	5%	I(0)	3.62
NX	0.953		I(1)	4.16
FDI	3.584	10%	I(0)	3.02
			I(1)	3.51

Table 5: ARDL Bounds Test for Unrestricted Constant

Test statistic F		Significance level		
GDP	3.624	1%	I(0)	6.84
GFCF	4.685		I(1)	7.84
LF	2.298	5%	I(0)	4.94
NX	1.422		I(1)	5.73
FDI	5.176	10%	I(0)	4.04
			I(1)	4.78

Table 6: ARDL Bounds Test for Restricted and Liner Trend

Test statistic F		Significance level		
GDP	2.332	1%	I(0)	6.1
GFCF	4.819		I(1)	6.73
LF	12.169	5%	I(0)	4.68
NX	1.127		I(1)	5.15
FDI	7.086	10%	I(0)	4.05
			I(1)	4.49

Table four shows F statistics estimated through restricted constant and without linear trend, the value of our F-statistic for GDP and FDI are greater than the I(1) at 10% significant level which indicates that there is a long-run relationship exists between IBL and GDP, and also IBL relates with FDI. In table five, where model is estimated through unrestricted constant and the linear trend term does not exist. The value of our F-statistic for FDI is greater than the I(1) at 10% significant level which indicates that there is a long-run relationship between IBL and FDI at 10% significant level, however this model negates the long run relationship between IBL and rest of the macro variables. In table six where model is estimated through restricted and liner trend, the value of F-statistic for LF, FDI and GFCF are greater than the I(1) at 1%, 1% and 10% significant level that indicates a long-run relationship between these variables and IBF.

3.3.5. Estimation of Autoregressive Distributed Lag (ARDL) Model

After the confirmation of the long run relationship between the variables, we estimate an autoregressive distributed lag (ARDL) model to evaluate the impact of Islamic bank financing on selected variables, we estimate an ARDL models 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. The results obtained are the (standard least squares) obtained for the chosen models with relevant *t* statistics and *p* value. This model follows a general to specific approach, using ordinary least squares and eliminates all the insignificant variables except the lagged variables at level since these variables indicate the co-integrating relationship.

Table 7: 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 seven 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 of the Equation 9 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 8: 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 eight 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 of the Equation 10 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 9: 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 nine 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 of the Equation 11 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. Therefore, we conclude that there is a small negative impact of last year Islamic bank financing on current year employment.

Table 10: 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 ten 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 the Equation 12 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 11: 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	1.342	2.303	0.457	0.937	2.656	0.156
Prob.*	0.212	0.047	0.658	0.212	0.047	0.658	0.371	0.024	0.879

Finally, Table eleven 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 of the Equation 13 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%.

3.3.6. Conditional Error Correction Model and Long Run Form

Table twelve 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.

Table 1: Co-Integration and Long Run Form

Eq	Variable	Restricted constant			Unrestricted constant			Restricted and liner trend		
		Coefficient	t-Statistic	Prob.*	Coefficient	t-Statistic	Prob.*	Coefficient	t-Statistic	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 twelve 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 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 2: The long-run coefficients

		Restricted constant			Unrestricted constant		
	Variable	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

Table thirteen 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 our findings in the preceding sections.

4. Conclusion, Limitations and Recommendations

4.1.Conclusion

Although there is vast literature available to examine the relationship between the financial sectors' development and economic growth, however it focuses on the role of conventional banking. Literature to evaluate the impact of Islamic bank financing on economic growth is still growing and current research is an important contribution to the existing literature.

This study is empirical evidence on the 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. For this purpose, total Islamic banks net financing is used as proxy for Islamic banks financing while gross domestic product, gross fixed capital formation, employment, trade and foreign direct investment are used as the measures of economic growth.

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 earlier literature related to Saudi Arabia. Current research finds a positive but insignificant relationship between the trade and Islamic banks financing in Saudi Arabia as country is an oil exporting country and investment in oil industry does not rely on Islamic financing at large. However, over the time, integration and stabilization of Islamic financial system will enable it to contribute effectively to promote international trade. In addition, we

should encourage more foreign Islamic banks to invest in Saudi Arabia, which will further enhance the role of Islamic banks' financing to facilitate the international trade activities.

However, the study finds 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 finding motivates further research to look at micro level data of Islamic bank finance' allocation to determine its role for enhancing the employment in the country.

Therefore, 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. Current research identifies 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. Therefore, policy makers can specify some percentage of the total banking assets for Islamic banks as well as through fostering expansion of the purely Islamic banks branches and building up of purely Islamic banks or opening Islamic windows in conventional banks in the country.

This study further provides an insight for the government to design profound short run and long run economic policies to develop Islamic financial infrastructure for promoting the Islamic financial system. The government should facilitate the projects to encourage profitable investment opportunities in Saudi Arabia. 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. The authorities should also create favourable conditions to utilize the Islamic bank

financing into productive investment through, thus creating employment and economic growth opportunities.

4.2. Possible Obstacles and Recommendations:

Although this research is an important contributions, but it bears some limitations yet .This research is constrained by the facts; that availability of the data related to Islamic financing is limited. Also, limited empirical literature on the evaluation of Islamic financing' role in the economic development of Saudi Arabia ,so the study concentrate on Saudi Arabia, but the results should be treated with caution as it might not be valid for generalization for other countries to determine the relation between Islamic banks financing and economic growth. In addition, the sample period of the study has experienced some crisis, which was neglected during this paper.

Based on the previous limitations of the study, it is recommended to Specify the effect of both Profit/ loss sharing products financing and the products of specific profit on economic growth and to examine the relationship between Islamic bank financing and economic growth for different countries in the region to generalize the findings of this study. Also, it is recommended to compare the impact of financing of Islamic and conventional banking systems on economic growth.

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