

**THE SIGNIFICANCE OF ISLAMIC BANKING ON INDONESIA'S
ECONOMIC GROWTH**

UNDERGRADUATE THESIS

Presented as Partial Fulfillment of the Requirements
to Obtain a Bachelor's Degree in Department of Economics



By:

SYARIFAH 'AMIRAH Wafa

Student Number: 13313294

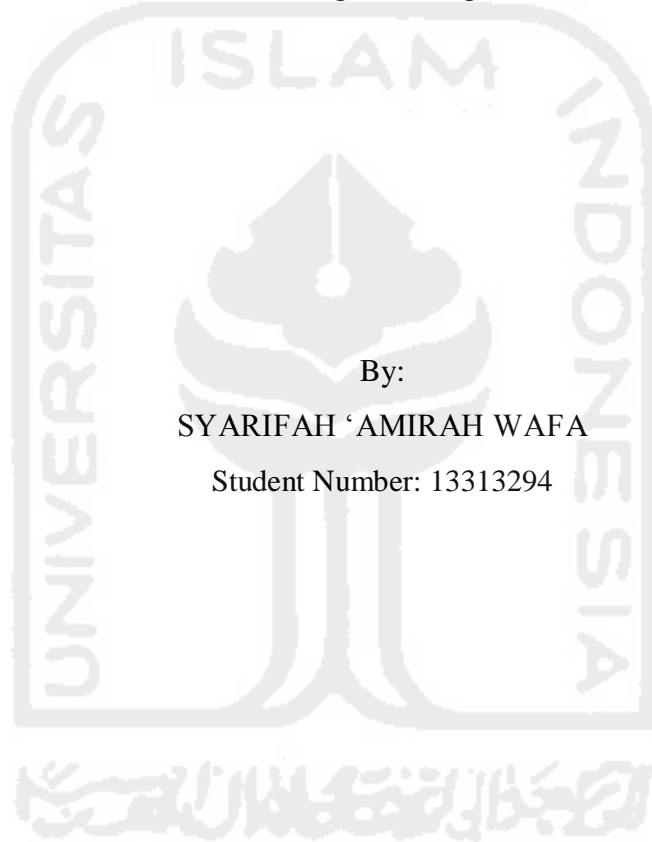
DEPARTMENT OF ECONOMICS
FACULTY OF ECONOMICS AND BUSINESS
UNIVERSITAS ISLAM INDONESIA
YOGYAKARTA

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DECLARATION OF AUTHENTICITY

Herein I declare the originality of this thesis. I have not presented anyone else's work to obtain a degree from my university, nor have I presented anyone else's words, ideas or expressions without acknowledgement. All quotations are cited and listed in the bibliography of this thesis. If in the future this statement is proven false, I am willing to accept any sanction complying with the determined regulations or its consequences.



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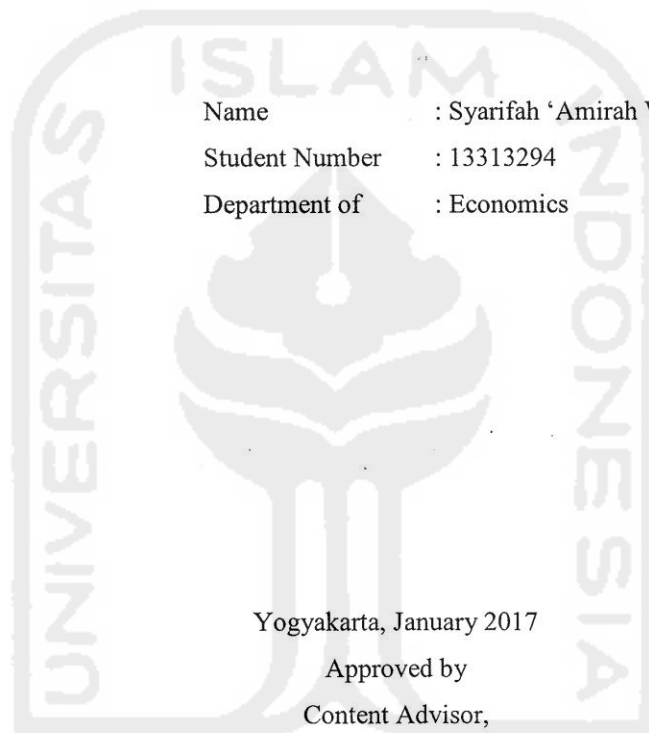
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ATTESTATION OF THESIS

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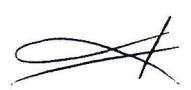

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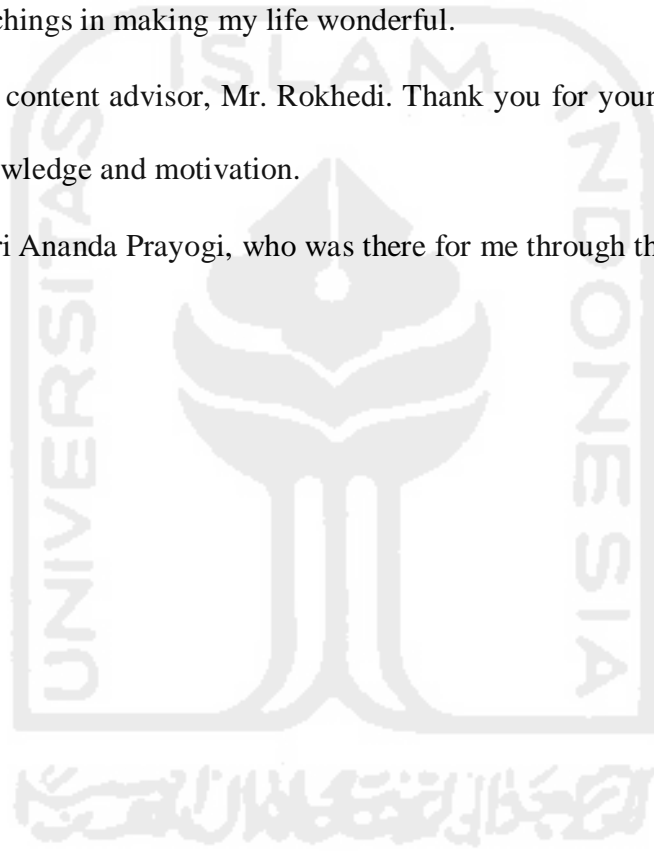


Dr. D. Agus Harjito, M.Si.

DEDICATION

Praise to Allah SWT for His mercy and guidance as well as the facilities He provided until this thesis can be completed by the author. This thesis is dedicated to:

- Beloved mother and father, thank you for all your love, support and your teachings in making my life wonderful.
- My content advisor, Mr. Rokhedi. Thank you for your patience, immense knowledge and motivation.
- Nuri Ananda Prayogi, who was there for me through thick and thin.



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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Assalamu'alaikum Warahmatullah Wabarakatuh

Praise to Allah SWT for His mercy and guidance as well as the facilities He provided until this thesis can be completed by the author. Blessings and greeting to Prophet Muhammad PBUH. This thesis, entitled, “The Significance of Islamic Banking on Indonesia’s Economic Growth” is one of the requirements to achieve an undergraduate degree from Faculty of Economics, Universitas Islam Indonesia.

The author realises this thesis is far from perfect and there are still a lot of errors. Any corrections, constructive criticism and good suggestions are welcomed for the perfection of this thesis. On this occasion the author would like to thank:

1. Allah SWT for His endless kindness, mercy and love. Prophet Muhammad PBUH for being the greatest role model a man could ever ask for.
2. Content advisor, Mr. Rokhedi. Thank you for your patience, immense knowledge and motivation.
3. Beloved mother and father who was and always will be there for me.

This research is far from perfect but, hopefully, this research may be useful for those who will read it.

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Yogyakarta, January 2017

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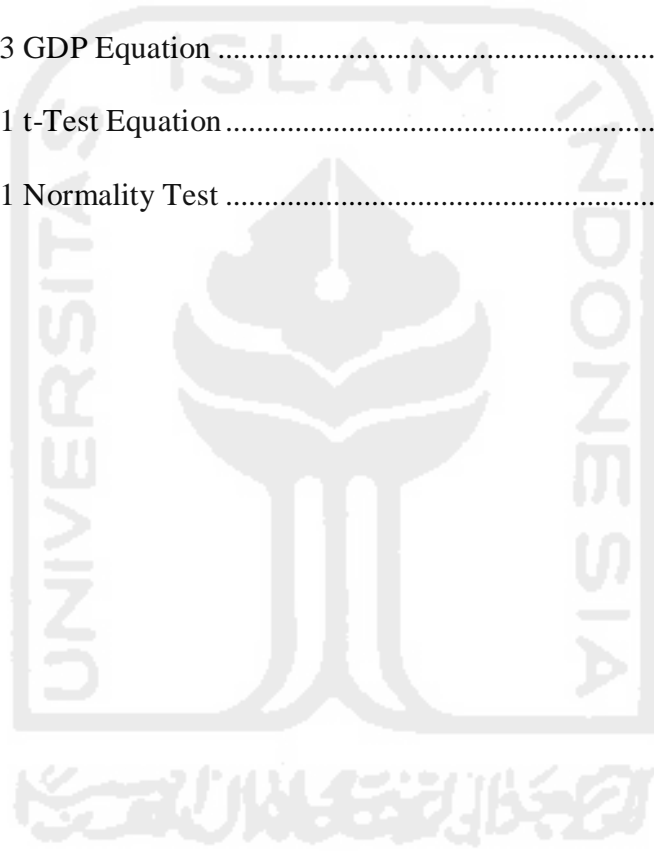
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THE SIGNIFICANCE OF ISLAMIC BANKING ON INDONESIA'S ECONOMIC GROWTH

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ABSTRACT

This paper study the significance of Islamic banking on Indonesia economic growth from the year of 2009 until 2015. Unit Root Test and Error Correction Model (ECM) have been used to analyse whether the financial system has an effect on economic growth in the long-run period. Variables used in this study are Gross Domestic Product (GDP), Total Investment (INV), Total Financing (TF) represents Islamic banking, Inflation (I), Export (EX) and Import (IM) as openness of economy. This study found that there is a long-run relationship between Islamic banking and economic growth. If there is a growth in the Islamic financial sector, it will somehow has a positive impact on economic growth. Likewise, the economic growth will affect positively on the development of Islamic banking. In Indonesia, the government has a policy that encourage investment, which in turn is able to develop the financial sector, both conventional and Islamic banking.

Keyword: *Gross Domestic Product, Total Investment, Total Financing, Inflation, Export, Import*

CHAPTER I

INTRODUCTION

1.1 Background

The word bank was inspired from the Italian word “*banco*” which means tables, desks or counters. It can also be defined as an institution that offer financial services such as being the custody of the money, foreign exchange, loan and receivable bills of exchange. According to Qamus al- Fi al- Lughah Munjid wa al- Ahlam, bank is best known as a place to put properties for the purposes of certain jobs under special maintenance. Not long after the establishment of conventional bank, a new term of bank has been introduces with a slightly different on how they operate, it is known as the Islamic bank.

Islamic banking or sharia compliant finance in general is defines as banking system based on sharia law. The main principle of sharia law is to ensure fairness in any kind of economy activities and therefore, any activities involved *riba* (interest), *maisir* (gambling) and *gharar* (speculative trading) are strictly prohibited. Perwataatmadja and Siamat Dahlam said the operation of Islamic banking is based on the provisions of the Quran and Hadith. Schaik on the other hand stated that Islamic banking is a form of modern bank based on Islamic law. In the time of Prophet Muhammad PBUH, banks are institutions that carry out three main functions; accept deposits, lend money and provide money transfer services.

In short, we can conclude that conventional and Islamic banks have the same role as a financial institution. But there are some clear differences on how these two institutions operate, based on the systems they are using and other things as shown in the table below:

Table 1.1

COMPARISONS OF ISLAMIC AND CONVENTIONAL BANK

Conventional Bank (interest rate system)	Differences	Islamic Bank (profit-sharing system)
Agreements are made based on positive law.	Agreement/ Akad	Agreements are made based on sharia law.
The determination of interest rate is made at the beginning of the agreements with assumption, must always in a profitable state. Fixed interest payments regardless of profit or loss. Lastly, interest payments do not increase even if the amount of profits increased.	System	The estimation of risk of profit-sharing is made during <i>akad</i> are based on the possibilities of profit and loss. The amount of the profit sharing ratio based on the amount of profits earned and any losses will be shared by both parties. Lastly, distribution of profits increases with an increase in revenue.
There is no supervisory board.	Supervisory Board	There is a supervisory board that is responsible for overseeing and monitoring the bank's operations and all of its products in accordance with sharia law.
Customers are creditor-debtor	Relationship Between Bank and its Customers	Customers are partnerships.

A brief history of modern Islamic banking took part way back in the year of 1963 in Egypt during the reign of Ahlam el Najjar. There was a bank operated using sharia law system as an experiment to study the impact of the savings bank to the country. Even though they did not claim themselves as an Islamic bank, their activities show us something else in which way, the bank does not receive any kind of interest. Most of their investment concentrated on industrial and commercial sectors where they ended up forming a partnership with their customers and profit- sharing system has been their main system. This so called experiment lasted until 1967 and at the very same moment, nine banks with similar concept used in Egypt have been established (*“Sejarah Perbankan Syariah di Dunia dan Masuk ke Indonesia,”* 2016).

By 1970's, Islamic- based banks are widely known and many of them have been established across the globe. In the Middle East as example, there are several Islamic banks such as Dubai Islamic Bank (1975), Faisal Islamic Bank of Sudan and Faisal Islamic Bank of Egypt (1977) and Bahrain Islamic Bank (1979). As for Asia Pacific, Philippine Amanah Bank officially operated in the year of 1973 and was established under presidential decree. Malaysia in 1983, founded the Muslim Pilgrims Savings Corporation with an aim to help those in need to save up their money to perform Hajj and Umrah (Dermawan Budi, 2016).

COUNTRIES WITH HIGH MUSLIM POPULATIONS

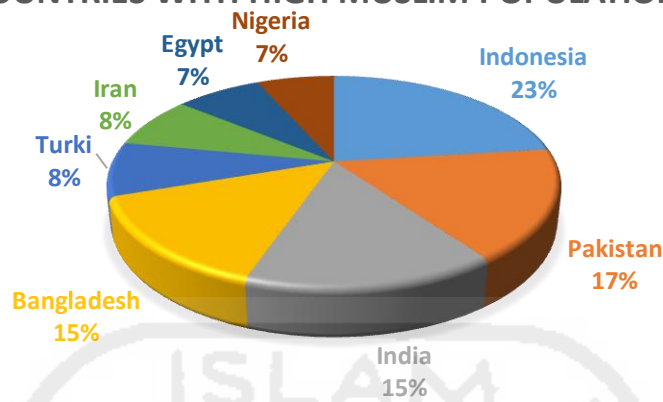


Diagram 1.1 Muslim Majority Countries
Source: The Pew Forum on Religion and Public Life

As for Indonesia stated from the diagram above, they holds the title as being the most majority of Muslim population compared to other countries. From this statement, the presence of Islamic banking in this country has become an obsession to many people long before Indonesia's independence. K.H Mansyur, board chairman of Muhammadiyah 1937- 1944 stated his opinion by saying Muslims of Indonesia were forced to use the services of conventional banks because there were no free interest financial institutions during that time. Thus, in 1990 Majelis Ulama Indonesia (MUI) formed a teamwork in order to establish an Islamic bank and a year after, Bank Muamalat Indonesia (BMI) is established and has been the first Islamic bank in Indonesia ever since then (*"Sejarah dan Perkembangan Bank Syariah di Indonesia,"* 2015).

As smooth as it might seemed for both conventional and Islamic banks, the year 1990's has welcomed a nightmare for almost all nations in the world. There were many hectic things happened in the world of economy with negative impact on most of the countries across the globe. Especially in the year of 1998

where countries in Asia went through an economic crisis. Indonesia's economy on the other hand, before facing the economic crisis, showed an excellent performance with growth rates ranging from 6% to 8% and seemed to be calmed with what will happen in the future. Logic reason behind of this is because Indonesia has a strong economic fundamentals to withstand external shock caused by the collapsed of South Korean and Thailand economy. On August 1997, everything changed after a policy of free- floating exchange rate has been issued by Indonesia's government. Ever since the monetary policy is conducted, the banking crisis began to emerge and became a full- blown banking crisis affecting both financial and real sectors of Indonesia (I Putu Soebowo, 2003 as cited in Basyir Asyhar 2014).

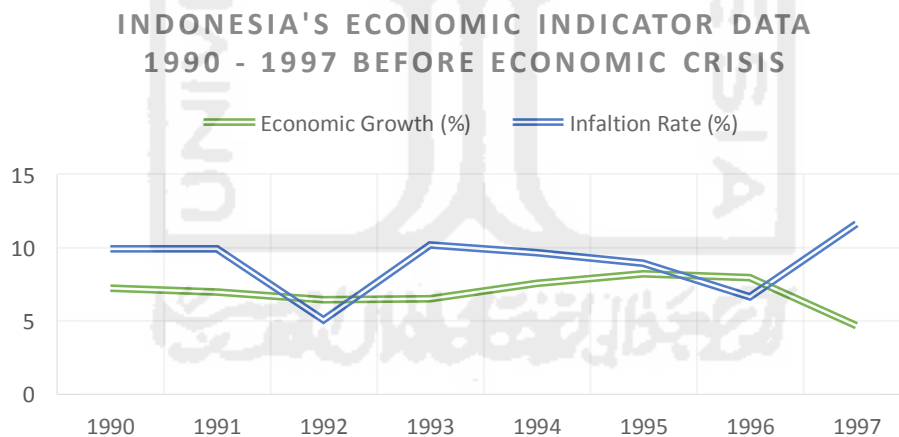


Diagram 1.2

Source: BPS, Indikator Ekonomi: Bank Indonesia, Statistik Ekonomi Keuangan Indonesia; World Bank, Indonesia in Crisis, July 2nd, 1998 (Krisis Moneter Indonesia: Sebab, Dampak dan Peram IMF)

In 1997, Indonesia's economic growth has decreased drastically with high inflation rate as shown in Diagram 1.1. Huge and short term of stock of private external is one of the reasons for Indonesia to hit economic crisis (Putra, 2008 as

cited in Basyir Asyhar, 2014). Weak banking system used in Indonesia back then had caused the external private debt problems as domestic banking problems. Related to the previous issue on Indonesia's banking system, there seemed to be some vulnerabilities and uncertainty in the banking systems they used that somehow does not suit with the country (*"Penyebab Krisis Ekonomi Tahun 1997- 1998,"* 2012).

In the bustle of economic crisis that affected the financial sector so badly, Indonesia's first Islamic bank, BMI, has proven its resistance despite decrease in profit. BMI implemented the principle of profit- sharing concept in their banking system and surprisingly survived from economic crisis due to varieties products offered by them. *Murabahah* for example, does not affected by the fluctuations of Bank Indonesia's (BI) rate and any real sectors that uses this kind of transaction will be secure from the negativity of BI's rate. As stated by Widodo Romi (2012), Islamic banks is known for its resistant to the crisis while conventional banks have become a parasite for the economy of a country. It is proved by the unsettled issues related to Bank Indonesia Liquidity Support, Recap Bonds and Indonesian Bank Restructuring Program that caused Indonesia a total loss of more than Rp. 650 trillion.

From the previous statement, we can see how Islamic banking played an important role on Indonesia's development when the country was hit by harsh financial crisis back in 1998. The contribution can be seen when Islamic banks are the ones who attracted Middle East investors because of the varieties Islamic investment offered by them that can be invest in Indonesia. Other than that,

Islamic finance institutions contributed to the development of rill sector. From the prohibition of interest rate and speculation, funds managed by Islamic banks are required to be channelled to the real sector and halal sector, being the main reason for its contribution to rill sector. By doing so, some of the funds given to the rill sector will help the development of the nation's economy (Uzum Ramona, 2012).

The positive achievement gained by Islamic banking led to the formation of *UU No. 21 tahun 2008* that regulates Islamic bank in Indonesia. Under this law, Islamic financial institutions do not only accept deposits from the public but they also work as a distributor for public funds as well as social functions for: (1) receive zakat funds, (2) receive cash *waqf* and distribute it to *nadzhir*¹. These social functions are entrusted to them because of the differences that lies in the intensity of practice between Islamic and conventional banks. However, there are several conventional banks that contribute to social activities but not in periodically way as the Islamic banks.

On the economic front, Islamic banking took part in taking care of the people's welfare and economic justice. Profits taken by conventional banks have discredited many parties especially those with weak economy background. A simple example for an instant, someone with low income has decided to open an account via conventional bank. He will have to be willing to cut a small amount of saving for the services that were not likely to be charge by Islamic banks for it does not go right with sharia law. By looking at this example, government has

made some progression by working on to develop Islamic banking because of its benefits bring justice to all levels of society.

Transactions based on sharia law has contributed to the stability of economy. From this, when the entire banking sectors switch side by implementing sharia law as the backbones of their systems, the amount of money and goods will be well balanced. This stability is significant enough to reduce the level of price when there is a shortage of goods happening in the market (Fuad, 2016). Lastly, all the facilities provided by Islamic banking has somehow give out some hope for those who wanted to start up a business. It means, to establish an enterprise and providing job opportunities and income at the same time. With so, the welfare of the people will be lifted.

Since the performance of Indonesia's economy is getting better compared to the one they had during the rough year of 1998. The potential of Islamic finance market is still wide open and it will lead to a bright future for sharia industry in Indonesia. Islamic banking has become one of the nation's banking system and the growth of Islamic financial institutions have increased in number since economic crisis. The question is now, does it really contributes to the growth of Indonesia's economy in long-run period? This study will analyses the dynamic interactions between finance and growth, whether Islamic banking has an impact on economic growth or the other way round.

This study, **The Significance of Islamic Banking on Indonesia's Economic Growth** is inspired from a journal written by Ali Rama entitled *Analisis Kontribusi Perbankan Syariah Terhadap Pertumbuhan Ekonomi*.

1.2 Problem Formulation

Based on the reading above, the problem of this study can be listed as below:

- i) Does Islamic banking affects the economic growth of Indonesia?
- ii) Is there any long- run relationship between Islamic financial sector and Indonesia's economic growth?

1.3 Purpose of Research

Based on the problem formulation above, the goal of this study are listed as below:

- i) To analyses the contribution of Islamic banking on Indonesia's economic growth.
- ii) To test whether is there any long- run relationship between Islamic financial sectors and economic growth of Indonesia.

1.4 Benefits of Research

- i) For the author, this study has helped solving the question about the position of Islamic banking in Indonesia. Total Financing (TF) and Total Deposits (TD) as the main variables in this study have answered the main issue of this study, Indonesia's economic growth. From the

data collected by the author, the result of Islamic banking in Indonesia is quite surprise, especially on their performance throughout the years.

- ii) For readers, this study may be handy for those who wanted to know what Islamic banking is and what makes this financial institution strong when facing economic crisis.

1.5 Writing System

Chapter I Introduction. This very first chapter of a study will be explaining on the background, problem formulation, purposes and benefits of a study and last but not least, the writing system. **Chapter II Literature Review and Theoretical Framework.** Literature review describes previous studies that are related with current study which is Islamic banking on economic growth. As for theoretical framework of this study, it is divided into two, theories from conventional and Islamic point of view.

Chapter III Research Methodology. In this chapter, type and method of data collection, operational definition of variables and method of analysis will be elaborated.

Chapter IV Results and Analysis. In this chapter, the results of data research and the analysis if the data will be presented. **Chapter V Conclusion and Recommendation.** This study will be end with a conclusion that sums up what the study is all about and recommendation on this study will be written.

CHAPTER II

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Literature Review

In writing this study, researcher has obtained the information from previous research and studies as a reference and comparison, both in terms of advantages and disadvantages. In addition, researcher also get the information from books and theses in order to obtain a pre-existing information on theories that are related to the tile of this study, The Significance of Islamic Banking on Indonesia's Economic Growth.

El- Galfy Ahmed and Khiyar Khiyar Abdallah (2012), “Islamic Banking and Economic Growth: A Review”. Journal of Applied Business Research

This study is conducted in order to see the impact of Islamic banking on economic growth of a country. It is done by writing down on previous studies on Islamic banking and economic growth but more focused on the characteristics, advantages and the main instruments provided by Islamic banks. The main characteristics of Islamic banking is to ensure fairness in any kind of economy activities and therefor, activities which involve *riba* (interest), *maisir* (gambling) and *gharar* (speculative trading) are prohibited. As for the advantages, Islamic banking is more efficient and stable, more conducive to property alleviation and known best for reduction of moral hazard because of its systems are based on Quran and Hadith. Key instruments of Islamic banking are the products offered

by them, namely; *mudharaba*, *musyaraka*, *ijara*, and *murabaha*, where each of the products has its own specialties and advantages.

Other than that, literature review on previous studies about relationship between Islamic financing in general and Islamic banking is particular are the main focus of this study. Comparative performance between Islamic and conventional banking is part of main focus of this paper as well. By implementing Islamic banking as part of a country's policy turned out to be positive to economic growth. When the entire banking sector switch side by implementing sharia law, the amount of money and goods will be well balanced and end up with balanced economy. In a nutshell, the results of this study are hypothesis and research studies on previous studies. For hypothesis, there is no evidence saying that Islamic banking is the main component for economic growth, even though previous studies tried to prove it. Previous research studies have some difficulties to make a conclusion that suits the whole world economy because most of the studies were tested on a single- country economy.

Rama Ali (2013), “Perbankan Syariah dan Pertumbuhan Ekonomi Indonesia”

The author conducted a study on the contribution of Islamic banking on the growth of Indonesian economy. There are few problems that are stated in this paper and was the main reasons for this paper to be made:

- To analyse whether Islamic financial institutions has an impact on Indonesia's economic growth or vice versa? Is there any relationship between these two factors?
- Is there a long- run relationship between the Islamic financial sectors with Indonesia's economic growth?
- How big is the variation of the variable in case there is an innovation to the other variables in the model used in this study?
- How is the response of a variable in case of shock on the other variables in the model used in this study?

By identifying the existing problems, the objectives of this study are:

- To analyse the impact and contribution of Islamic banking on Indonesia's economic growth.
- To investigate the relationship between the Islamic financial sectors with Indonesia's economic growth.
- To test whether there is a long- run relationship between Islamic financial institutions and Indonesia's economic growth.
- To analyse the response of each variables in case of shock on the other variables in the model used in this study.

The methodology used to conduct this study is by using time series data with Gross Domestic Product (GDP), Total Finance (TF), Total Deposits (TD),

Consumer Price Index (CPI) and Openness of Economy as variables. Collected data is then analysed using unit root test, Johansen test, Granger Causality test, error correction model, variance decomposition and impulse response function. Unit root test results showed that GDP, TF, TD, CPI and OE, each variable integrate the first order. So it is possible for the time series data used in this study will co-integrated in long- run relationship.

The results from Johansen test, the variables tends to move towards the long-run equilibrium. In other words, by using this test with maximum likelihood, the results showed that H_0 is rejected. In each short period of time, GDP, TF, TD and other variables tend to adjust themselves to achieve a balance (equilibrium) long-run relationship. On the Granger Causality test results show that there is a relationship pattern finance-led growth in the first test models and bidirectional causality in the second test model. That is, financing and deposits in Islamic banking as a significant role in explaining the variations that occur in economic growth and the real sector.

To sum up everything, by improving financial institutions such as increasing the quality and quantity of human resources in order to fulfil the demand of Islamic finance industry that has been predicted to grow rapidly in the coming years. Providing adequate legal tools as a form of regulatory framework for the perpetrators of the Islamic finance industry. Next, the risk management system is also important to support the development of this industry in long- run period. Lastly, the stability of Islamic financial industry need to be stable for it will affect the stability of macroeconomic in Indonesia. Islamic banking should increase the

financing scheme of *mudharabah* for this scheme has proven to reduce poverty, unemployment and keep its eyes on inflation.

Benhayoun Chairi, Gonnouni and Lyhyaoui (2014), “Islamic Banking Challenges Lie in the Growth of Islamic Economy Despite of the Free Interest Loan and Policy: Evidence from Support Vector Machine Approach”. CAN Journal of Finance and Risks Perspectives

This study was conducted to investigate whether the practice of Islamic finance does give a great impact or the other way round on the financial health of companies. In order to do so, they used linear regression model as well as support vector machine model with financial data of 20 companies from the year of 2009 up till 2011. Assume that the financial health of a company is in a good shape, it will contribute to build a strong foundation for an economic growth. From the result, it is proved that the model used in this study has a good measuring effect with an accuracy result of creditworthiness risk up to 80%. Prohibition of interest loans are well known when it comes to sharia law, if we take this matter seriously and try to apply it, the number of debt in financial sector can be reduced by using risk-sharing concept. In our current state of economic crisis, ironically it will somehow give a positive impact on Islamic financial institutions for they're quite resistant with this situation. Lastly, some words from the writers of this journal somehow inspire me and give hope to Islamic economy, they wrote “to improve firm's solvency and eradicate financial crisis, policy makers need to start welcoming risk-sharing and free interest loan”.

Lo Ching Wing and Leow Chee Seng (2014), “Islamic Banking in Malaysia: A Sustainable Growth of the Consumer Growth”. International Journal of Trade and Finance

The objective of this journal is to discuss on the sustainable growth of Islamic banking consumer market in Malaysia by using analytical literature review. The Malaysian Islamic banking sector including DFIs shared 13% of the total global Islamic banking assets according to the report made by Malaysia Islamic International Financial Centre in the year of 2013. Other than that, the Malaysian Islamic banking sector has also grown equally fast as the global Islamic banking development. In terms of assets and customers, if we were to compare it with conventional banking sector, the Malaysian Islamic banking sector can be considered as a beginner.

The stability of economy that Islamic banking created is soon to be realised when the global financial crisis happened in 2009. Islamic banks are considered as a better alternative banking in terms of fundamental risk- sharing. Furthermore, Islamic banking offered a great potential and opportunities from the overall banking market size. Back in 2002, the Malaysian government launched the first Islamic *sukuk* in the world and has attracted a wide geographical distribution of investors that contributed to the growth of Malaysia’s economic. As for the result for this study, how the Malaysian customers select Islamic banking products are because of their fast and efficient service, speed of transaction and friendliness of bank staff which is top priorities for customers.

Hachicha Nejib and Ben Amar Amine (2015), “Does Islamic Bank Financing Contribute to Economic Growth? The Malaysian Case”. *International Journal of Islamic and Middle Eastern Finance and Management*

The main purpose of this paper is to analyse the impact of Islamic Bank Financing on Malaysia’s economic growth from the year of 2000 until 2011. The theoretical framework for empirical investigation conducted by this study is to use neoclassical production function with several financial indicators (PRIVATE, PRIVIS and INVIS) of Islamic bank. The PRIVATE ratio makes it possible to measure the contribution of Islamic banks in financing the economy. PRIVIS ratio is used as a measure of Islamic banking sector development. The INVIS ratio allows us to complete the PRIVIS ratio, it is to assess the contribution of the Islamic Financial Intermediaries in the capital accumulation of the economy. Other variables such as Gross Fixed Capital Formation (GFCF), GDP, Consumer Price Index (CPI) and labour force. The authors also used Thomson- Reuters for MYR/USD exchange rates data.

To examine the statistical properties of the time series data, the authors conducted three different unit root test; augmented Dickey- Fuller (ADF), Phillips- Perron (PP) and Kwiatkowski- Phillips- Schmidt- Shin (KPSS). The first two unit root test (ADF and PP) were used to test the null hypothesis of unit root against the alternative stationarity. KPSS on the other hand tested the null hypothesis of stationarity against the alternative unit root test. The results from the unit root test showed that all the variables used in this study are integrated with order one. When the authors used Johansen and Juselius test, the results

showed an existence of a single cointegration relationship between GDP, investment, labour force and Islamic bank finance indicators. Economically, the results showed the insensitivity of Malaysia's elasticity for the long-run growth for it reacted differently on each Islamic banking financing indicators. A one percent increased of Islamic financing indicators, the chance of Malaysia to grow is so little, between 0.148% - 0.206% only.

This shows that the effects of different Islamic financing indicators on economic growth in the long run is not so important if to be compared with the effects in the short run. Econometric results summarise the reality of Malaysia's economy where Islamic banking is much more involved in a matter that does not have a major impact on economic growth in long-run period. In order to improve the efficiency of the Malaysian Islamic banks as financial intermediaries that facilitate the capital accumulation and the economic, the authors suggested to strengthen the weight of the PLS-based instruments in the loan portfolios of the Malaysian Islamic banks. By doing this, it will somehow reduce the inequalities that is happening around us and also to improve the economic opportunities for those who have high potential to contribute to the capital accumulation that will contribute to the growth of Malaysia.

Zirek Duygu, Celebi Fusun and Hassan M. Kabir (2016), “The Islamic Banking and Economic Growth Nexus: A Panel VAR Analysis for Organization of Islamic Cooperation (OIC) Countries”. Journal of Economic Cooperation and Development

The purpose of this study is to analyse the impact of Islamic banking variables on economic growth of 14 OIC countries from 1999 to 2011. By using VAR method and fixed effects regression, there is a significant and positive relationship for both short- run and long-run. The result of this study showed a strong connection between Islamic banking variables and the other variables which are capital stock, unemployment, inflation and government expenditure. The result also showed a positive reaction on economic growth to shock Islamic instruments (Islamic deposits, investments and size) in the long- run. This shock contributed more than 3% of the forecast error in economic growth for the next 10 years period. Increased in Islamic banking activities will contribute to the increase in economic growth. This explained why the relationship between Islamic deposit, size and investment is significant and positive. Other variables such as capital stock and investment also contributed to economic growth.

Results from three regression of this study showed a positive and significant answers. Relationship between economic growth and unemployment is negative. As economic growth increase, the number of unemployment will decrease and there will be new opportunities wide open for them. For government expenditure, the result showed a negative and significant relationship. When the share of government decreased, the share of private sector will increase

depending on short- run. Inflation result showed a positive and significant with an increase of inflation, unemployment decreases. According to Phillips curve approach depending on the Keynesian model in short term. As for lending interest rate, the result is insignificant in the sense of economic growth. There is no relationship between economic growth and other indicators of human development.

Hayati Safaah Restuning (without year), “Peran Perbankan Syariah Terhadap Pertumbuhan Ekonomi Indonesia”.

This paper analyses the role of Islamic banking on Indonesia’s economic growth by using Ordinary Least Squares (OLS) to determine how much Islamic banking influenced the Gross Domestic Product (GDP) which is for this study, GDP represents the growth. The result showed the total assets of Islamic banking has zero significant effect on GDP, while the Islamic financing process on the other hand, had a significant effect on GDP. As for the total assets and total financing, the variables of Islamic banking can explained the 33.8% effect it had on GDP variable. This means that Islamic banking has a very small role related to economic growth in Indonesia. The causes of this to happen because of the market share of Islamic banking is relatively small compared to conventional banks. Even though the number of Islamic banking assets continued to grow each year. Strategies need to be made by Islamic banking in order to boost their market share among others. One of them is simply by improving the quality and the quantity of human resources, strengthen the regulation and adapting the development of technologies.

2.2 Theoretical Framework

2.2.1 Theory of Economic Growth

Economic growth in general is known as a process of change in a country's economy on an ongoing basis towards a better state for a certain period. It can also be defined as increase in production capacity of an economy in the form of an increase in national income. According to Sukirno (2000) as cited in *Teori Pertumbuhan Ekonomi*, 2016, economic growth can be interpreted as an outgrowth of an activity in the economy that could lead to a positive production of goods and services in the community to increase and followed by increased of affluence by the society. The achievement of high economic growth is one of the four main objectives of macroeconomic policymakers. Growth is highly desirable because it will allows people to consume more goods and service and also contribute to the provision of goods and polishes the social life (health, education and etc.) and thus improving the stand of living.

Theory of economic growth is developed based on empirical experiences so that the theory can be used as a basis for predicting and creating a policy of general theory of economic growth. Experts said this theory can be divided into two categories, namely, the theory of historical economic growth and theory of classical and neoclassical economic growth. The theoretical framework of this study will be discussed on conventional and Islamic point of view.

2.2.2 The Solow- Swan Growth Model

Robert Solow from Harvard University and Trevor Swan from University of Sydney independently developed a model of economic growth that falls under neoclassical growth model and known as Solow- Swan's theory. Solow- Swan model focuses on how the population growth, capital accumulation, technological progress and outputs interact in the process of economic growth. The model used in this theory is general production function that can accommodate a wide range of possibilities for substitution between capitals (K) and labour (L). The form of production function is $Q = F(K, L)$. Q is the total output, F is function, K and L have been explained. This model allows the use of various combination of K and L to obtain an output level. Even though Solow- Swan model is similar to the model of Harrod- Domar, Solow- Swan model can be said as more flexible due to some reasons. Firstly, this model avoids the instability problem which is one of the characteristics in Harrod- Domar's model. Secondly, it is more flexible on explaining the problems of income distribution.

Mujahidin Muhammad (2011) stated, in the Harrod- Domar model, output and capital, labour and capital, each one of them is connected by a production function with coefficients that cannot be changed, that is $Q^p = hK$ and $Q^n = nN$. The Solow- Swan growth model avoids the problem of instability by taking new conclusions related to the distribution of income in the growth process. By using this production function, there will be a consequence in which, all factors that are available, both K and L will always be used fully. This is because the production function of the neoclassical, no matter how many K and L provided, it will be

combined for the sake of the production process and there is no possibility of excess and deficiency factor in the model. As for this neoclassical model, the growth process can be divided into four stages (Mujahidin Muhammad, 2011):

- i) Labour (L) grows with a certain rate, for example, p per year.
- ii) The production function $Q = F(K, L)$ applicable to each production.
- iii) There is a propensity to save by the society that can be describe as a proportion (s) of a particular output (Q). Society savings, $S = sQ$, increased on S depend on the increase and decrease of Q .
- iv) All public savings have been invested, $S = I = \Delta K$. In neoclassical model, there is no questions on how S and I achieved their balanced state. In other words, problem involves warranted rate of growth is no longer relevant. The growth in the neoclassical model always qualify warranted rate of growth because S is deemed to be the same as I .

Neoclassical economy will lead to a long- run equilibrium position. Assume that $Q = F(K, L)$ has the constant return to scale characteristic, meaning that if K and L respectively increased by $x\%$, then Q will also increase by $x\%$. If the constant return to scale is valid, then we can express the production function in a simpler form. Next, $F(k, l)$, can be assume as another function, $F(k)$ has just one variable (K) because number one is a constant (not variable), so that the production function becomes $q = f(k) \dots \dots \dots (1)$. This equation says that output per labour is a function of per capita labour, or output per capita is a function of capital per capita. Next, the population (or labour) are considered to

be grown with p a year and the public has shown propensity to save. All the saving will then invested in order to increase the capital stock with $\Delta IQ = sQ$. After experiencing manipulation algebraic equation becomes: $K = K.L \dots \dots \dots (2)$. Equation (2) states that the growth rate of capital per capita is equal to the growth rate of capital stock (total) minus the rate of population growth or labour (Mujahidin Muhamad, 2011).

In a nutshell, Solow stated that to achieve a long run equilibrium state is when K reach a stable level, meaning no more changes in its value. When K is constant, then the long run equilibrium will be achieve. The position of long run equilibrium can also be said as steady state position. This requirement has consequences that $k = 0$. Solow-Swan model uses a production function where output is a function of capital and labour and capital can be substituted for labour but with varying degree of perfection that shows a declining returns. So when capital is increased in relative comparison with the labour, hence increase output data become progressively smaller.

2.2.3 Harrod and Domar on Economic Growth

Roy Harrod and Evsey Domar are two economist who are working independently, with a same conclusion where both stated that economic growth is determined by the high savings and investments. If the savings and investments are in a low position, economic growth of a country will also be affected by some negativity impact. If there is a high level of saving in a country, it provides funds for firms to borrow and invest. Investment can increase the capital stock of an

economy and generate economic growth through the increase in production of goods and services (Cheung Vanessa, 2013). Harrod- Domar theory is said to be the extension of short- term analysis introduced by Keynes on full employment and income theory. This growth model provides a long- term theory of output. Harrod- Domar have provided a model that focuses on the requirements necessary for steady economic growth. According to them, capital accumulation constitutes a major factor for the growth of an economy (“Theories of Economic Growth- Discussed,” 2016).

As time goes by, this theory has experienced a lot of modifications to reach a better state but still remain using the main formula of development made by Harrod- Domar. This formula is based on the assumption that the problem of development is basically caused by adding capital investment. If there is capital and the capital is used for investment, the result is economic growth. Based on the model, economists in the Third World countries are trying to solve the problem of underdevelopment by seeking additional capital, both domestic and internationally (by cultivate and increase domestic savings through capital and investment and external debt).

Harrod- Domar Theory have several assumptions (as cited in Donderdag, 2013):

- i) Economy in a state of full employment and capital goods are used fully.
- ii) Consists of two sectors, the household sector (*sektor rumah tangga*) and the corporate sector, means the government and foreign trade does not exist.

- iii) The amount of public savings is proportional to the magnitude of national income, meaning savings function starting from zero point.
- iv) The tendency to save fixed amount of cash (Marginal Propensity to Save = MPS), as well as between the capital- output ratio (COR) and increase the capital- output ration (Incremental Capital- Output Ratio or ICOR).

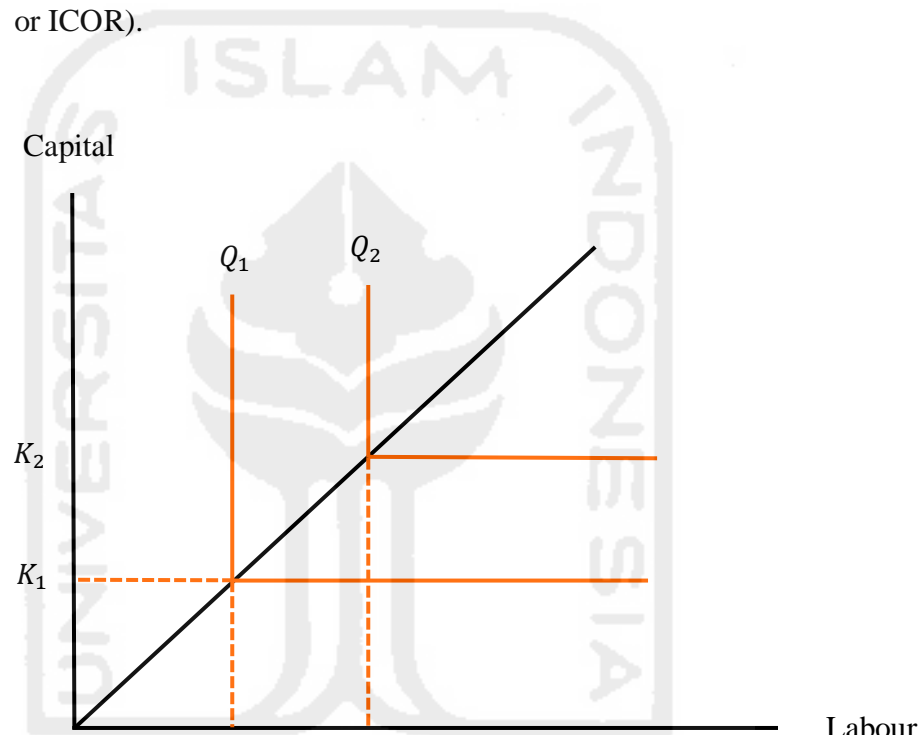


Diagram 2.1 L- Shaped Production Function

The L- shaped production function in Harrod- Domar's is due to the amount of capital that can only create a certain level of output. To produce an output of Q_1 , it requires capital and labour, and any changes in this combination will contribute to the changes of the output. Q_2 can only be achieved when the capital stock is equal to K_2 (as shown in Diagram 2.1). According to Harrod- Domar, every economy can set aside a certain proportion of national income with

certain requirements such as, if the damages of capital goods for example buildings and so forth can be replaced. However, in order to grow the economy, new investments are required as additional stock.

For example, assume that there is an economy relationship between capital and output, if \$300 is needed to produce a total output of \$100, then every increase in new stock investment will have an impact on the increase number of total output. Lincoly (2004) as cited in Donderdag (2013) said it is known as capital output ratio (COR). As said in the theory, in order to grow, economies need to save up and invest certain proportion of its total output. When the amount of savings and investments increased, economic growth will grow as well. The newly generated income from capital accumulation produces demand for goods and services. According to Harrod-Domar theory, the most necessary condition for the growth of an economy is that the demand created due to the newly generated income that should be sufficient enough, so that the output produced by the new investment should be fully absorbed. If the output is not fully absorbed, there would be excess or idle production capacity. This condition should be satisfies consecutively to maintain full employment level and achieve steady economic growth in the long term (“Theories of Economic Growth- Discussed,” 2016).

As said in Domar’s model, the growth of aggregate demand equals investment (I) multiplied by multiplier scale ($\frac{1}{s}$). While the production of capacity growth is equals to investment (I) divided by capital output ratio (K). According to the last point as mentioned before on the assumptions of Harrod-

Domar theory, through manipulation using mathematical methods, the growth rate of investment needed in order to equalize the growth rate of aggregate demand with supply has been obtained and can be expressed by the following equation: $\frac{\Delta Y}{Y} = \frac{\Delta K}{K} = \frac{\Delta I}{I} = \frac{s}{k}$, where $\frac{\Delta Y}{Y}$ is the output or the growth rate of aggregate demand, $\frac{\Delta K}{K}$ is the rate of increase in capital stock and lastly $\frac{\Delta I}{I}$ is the rate of increase in investment. Harrod stated that economic growth can be differentiated by the actual growth rate, the growth that has been log and natural growth.

The actual growth ($\Delta Y/Y$) is determined by the saving-output ratio (S/Y) and additional capital-output ratio ($\Delta K/\Delta Y$). Both of them are considered constant and through mathematical manipulation will be equal to the savings. At the level of the actual growth rate, actual output is not always equal to the output potential. The desired growth rate is the growth rate that is considered adequate by the investor to ensure the achievement of full capacity or the balance of demand and production in the longer term. Aggregate demand is considered quite high by the investors in this growth rate so as to ensure the group sell the entire capacity of the existing plant. The actual output will be equal to the potential output so there is no cyclical variations in economic growth. This growth rate is achieved when the output (actual and potential), aggregate demand, capital stock, and investment grew at the same rate.

In conclusion, stability of economic growth in the long run can only be achieved through government intervention through fiscal and monetary policies to tackle harassment irregularities and instability. These policies are very

important in a way to increase investment in the infrastructure sector which will boost aggregate demand in the short term and expand production capacity and ensure the sustainability of economic growth in the long term.

2.2.4 Economic Growth from Islamic Perspective

Conventional economics defined economic growth as a largely devoted to prosperity and material which can only last in a short- term dimension, or in other words, we dedicated ourselves for the sake of unbalanced state between life and hereafter. When spiritual satisfaction is used in this study, any mathematical problems will not be included for it is intangible. Anyways, in an Islamic point of view, Islam has considers economic growth as a means of ensuring social justice which it output will somehow contribute to human welfare. What makes the differences of definition of economic growth from Islamic and conventional minds are in Islam we have the prohibition of *riba* and *zakat* whereas these two points are can nowhere be find in conventional concepts.

From the reading above, a conclusion can be made where the fundamental difference between Islamic and conventional point of view lies on its ultimate goal. Conventional economics background is oriented with high growth of economic activities without accompanying to the equitable distribution of output produced. With this, the output produced will ended up with a product of uneven distribution of human welfare. In contrast with the concept of conventional perception, Islamic economics sees economic growth as a means to improve the material well- being of mankind regardless of race, religion and race. In addition,

Islamic perspective has a dual orientation in terms of economics, namely, the welfare of material (worldly) and inner satisfaction (hereafter).

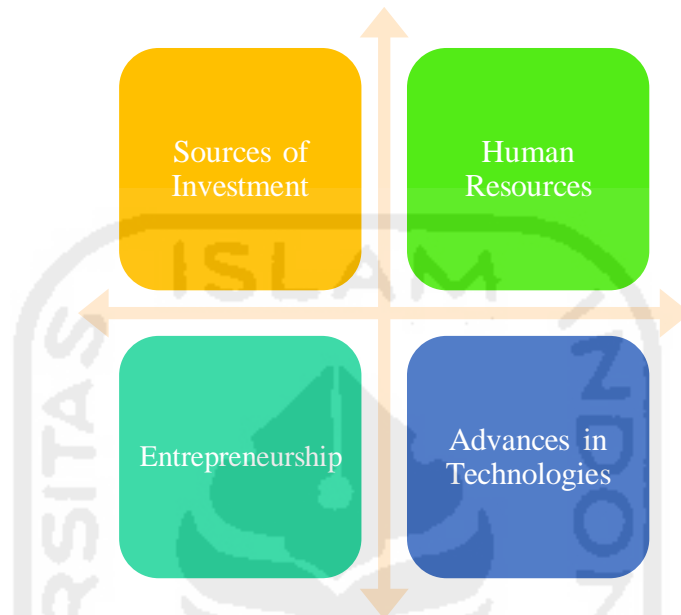


Diagram 2.2 Factors of Economic Growth According to Islam

As shown in Diagram 2.2, sources of investment, human resources, entrepreneurship and advances in technologies are four main factors of economic growth according to Islamic perspective. First point explains that growth requires investment resources (domestic and foreign investor) in order to increase the production of physical assets that generate future revenue streams. Physical assets mentioned before including factories and industrial machines that assist the growth of production. In connection with sources from external capital, it is important to cooperate with other Islamic countries, especially countries which took the prohibition of *riba* seriously in their financial management and freeing themselves from the influence of social, cultural and political slavery of Western's mind-set. By doing so, the potential significance of Islamic economics

on how to mobilize domestic resources for economic growth can be seen (Abidin Zainal, 2012).

The second factor of economic growth according to Islam, human resources, played as one of the important roles for economic growth. We, humans, are the only living things who are active on economic activity, the one who exploit natural resources and the one who is taking care of capital accumulation, social development, economic and political institutions. We are best known as the one who contribute the most to the growth process. This is due to the special qualities inside us where no other living things have, professionalism and moral attitude. These two qualities are very important to achieve maximum contribution to the growth of economy. Example, professional workers without honesty might not be contribute anything to the process of growth and vice versa with workers who are honest. Same goes with having sincerity but no skills, it does not contribute much for economic growth. Abidin Zainal (2012) said this situation as two sides of a coin that cannot be separated from one another.

Moving on to the third point, entrepreneurship, some economist asserted their opinion by saying entrepreneurship as one of the most important factors in economic growth. It is so important until it has been mentioned in the Holy Quran and Prophet Muhammad PBUH. He said, “nine out of ten (or 90%) of sustenance is derived from commercial business”. In the Holy Quran, verse 275 of chapter two surah al- Baqarah stated “but Allah has permitted trade and has forbidden interest”. From these two statements, we can see how supportive Islam

is on the growth- development of entrepreneurship. Islam provides positive motivation to obtain halal livelihood by encouraging Muslims to work hard (working for other or it can be done independently) as long it does not breaks the sharia law. Allah has ordered us to find *rezk* that He has prepared for everyone (Abidin Zainal, 2012).

Last but not least, advancement of technology. It is something so undeniable that technological progress has contributed so much on our daily life and of course, to the growth of economic. Islam is not opposed to the concept of technological progress. As a reality, these technologies must be accepted and utilized as it provides significant contribution to growths. Verses from Quran guide people to find and earned new things or by experiences they had to benefit many people. New discoveries can be used to explore natural resources that Allah has provided for man's welfare. Other than the four factors mentioned before, economic growth can be measure by Gross National Product (GNP). GNP measures the flow of national income during a certain period of time. Generally, to calculate the growth, we use the same model as the conventional economics but adding the letter "Z" at the back of the model to differentiate Islamic and conventional economics. The letter Z represents *zakat* and the model can be expressed as $GNP = C + I + G(E - M) + Z$.

2.2.5 Islamic Bank

Islamic banking or sharia compliant finance in general is defines as banking system based on sharia law. The main principle of sharia law is to ensure

fairness in any kind of economy activities and therefore, any activities involved *riba* (interest), *maisir* (gambling) and *gharar* (speculative trading) are strictly prohibited. Islamic banking has a significant influence on other Islamic financial practices such as *takaful* (Islamic insurance), Islamic bonds, Islamic mutual funds, sharia finance companies and Islamic capital market. In 2011, the global growth of Islamic banking decreased by 25%. Islamic banking in Indonesia on the other hand increased by $\pm 49\%$. Other than that, total deposits of Indonesian Islamic banking was also at the highest number back in 2011 with an increase of $\pm 51\%$ (Bank Indonesia, “*Outlook Perbankan Syariah 2014*”).

2.2.6 Gross Domestic Product (GDP)

The gross domestic product (GDP) is one of the primary indicators used to gauge the health of a country’s economy. It represents the total dollar value of all goods and services produced over a specific time period. Usually, GDP is expressed as a comparison to the previous quarter or year (“What is GDP and Why is it So Important to Economist and Investors?,” 2016).

$$GDP = C + I + G + (X - M)$$

Diagram 2.3 Equation Used to Calculate GDP

Diagram 2.3 shows the equation used to calculate GDP where C is known as private consumption, I is gross investments, G represents government spending and (X-M) is exports and imports. Real GDP accounts for inflation and

deflation. It transforms the money-value measure, nominal GDP, into an index for quantity of total output (“Calculating Real GDP,” 2016).

2.3 Research Hypothesis

The hypothesis of this study can be formulated based on what has been described above:

1. H_1 : Total Financing (TF) has a negative and significant effect on GDP.



CHAPTER III

RESEARCH METHODOLOGY

3.1 Type and Method of Data Collection

There are two types of data, primary and secondary. Both data has the same function in which they collected information to make a basic conclusion of a study. Primary data is obtained directly from its original source such as form an interview, polls of individuals or groups of people as well as the results of observations of an object, even or test results. Secondary data is obtained through an intermediary or indirectly from books, records, evidence, anything that are available and require researches to visit the library, research center, archives or read lots of book related to his or her research in order to obtain the data needed.

Based on the reading above, this study is using time series data which falls under secondary data from the year of 2009.Q1 until 2015.Q2. The time series data are obtained through the website monthly report from World Bank, *Bank Indonesia*, *Pusat Badan Statistik* and Trading Economics.

3.2 Operational Definition of Variables

Variables that are used in this study are inspired from a journal written by Ali Rama entitled *Analisis Kontribusi Perbankan Syariah Terhadap Pertumbuhan Ekonomi*. The variables are Gross Domestic Product (GDP), Total Investment (INV), Total Financing (TF), Inflation (I), Export (EX) and Import (IM).

$$GDP_t = \beta_0 + \beta_1 INV_t + \beta_2 TF_t + \beta_3 I_t + \beta_4 EX_t + \beta_5 IM_t + \varepsilon$$

- Gross Domestic Product (GDP) as economic growth.
- Total Investment (INV) represents Indonesia's investment.
- Total Financing (TF) represents Islamic Banking.
- Inflation (I) as inflation rate.
- Export (EX) and Import (IM) as openness of economy.

3.3 Analysis Method

Methods of analysis used in this study are multiple linear regression, stationarity test, error correction model (ECM) and statistical analysis (coefficient of determination, f test and t test).

3.3.1 Multiple Linear Regression

Multiple linear regression is a statistical analysis used to determine the effect of several independent variables on the dependent variable. The model of multiple linear regression used in this study is formulated as shown below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 \log X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

- Y represents GDP (dependent variable).
- β_0 is a constant.
- β_1 until β_5 is known as regression coefficient.
- X_1 until X_5 are the independent variables.

- X_1 represents Total Investment (INV).
- X_2 represents Total Financing (TF).
- X_3 represents Inflation (I).
- X_4 represents Export (EX).
- X_5 represents Import (IM).
- ε is standard error.

3.3.2 Statistical Analysis

3.3.2.1 Coefficient of Determination

The coefficient of determination or also known as R squared is a number that indicated the proportion of the variance in the dependent variable that is predicted from the independent variable (“Coefficient of Determination,” 2017). In other words mean, how big the regression line describes the data.

3.3.2.2 F-test

F-test is a test conducted by comparing the result of F calculated with table F in order to see the effect of all independent variables on the dependent variables. If the probability is smaller than 0.05, it means there is a significant relationship between dependent and independent variables. Vice versa, if the probability is higher than 0.05, both dependent and independent variables are insignificant (Hidayat Anwar, 2013).

3.3.2.3 t- Test

In conducting a research, we have to create research hypothesis that can be divided into two categories; null and alternative hypothesis (Widarjono, 2013, p. 42). Null hypothesis (H_0) represents the confidence level of researcher in proving his or her research by using sample data. Alternative hypothesis (H_a) is the opposite of H_0 . T – test is a procedure in which the result of the samples can be used to verify the truth and the falsity of H_0 . Problem in hypothesis test is to determine whether to use two-sided or one- sided test. Two- sided hypothesis test is chosen when we did not have strong theoretical basis in research and one- sided hypothesis test is use when strong theoretical basis is use in a research (p. 42).

Two sided hypothesis test:

$$H_0 : \beta_1 = 0$$

$$H_a : \beta_1 \neq 0$$

One- sided hypothesis test (positive):

$$H_0 : \beta_1 = 0$$

$$H_a : \beta_1 > 0$$

One- sided hypothesis test (negative):

$$H_0 : \beta_1 = 0$$

$$H_0 : \beta_1 < 0$$

To calculate the value of t- statistic and to find the t- critical value from t- distribution table is by using α and degree of freedom by using the formula stated below. Compare the value of t- statistic with critical values and as for the result, if the value of t- statistic $>$ the value of t- critical value, H_0 is rejected and H_a is accepted. If the value of t- statistic $<$ the value of t- critical value, H_0 is not rejected.

$$t = \frac{\hat{\beta}_1 - \beta_1}{se(\hat{\beta}_1)}$$

Diagram 3.1 Mathematical Equation to Find the Value of t

3.3.3 Classical Assumption Test

Classical assumption test is conducted in conjunction with the process of regression that measures taken in the classical assumption test using the same working step by regression. There are four assumption test that must be done on the regression model; normality, multicollinearity, heteroscedasticity and autocorrelation test.

3.3.3.1 Normality Test

Normality test is a test that was conducted to evaluate the distribution of the data on a group or variable data, whether the distribution of the data is normally distributed or not. Data with more than 30 ($n > 30$) can be assumed as normal distribution. The regression result can determine whether it contains

normal residual or not by looking at the probability of the result. If the probability is greater than 0.05 (> 0.05), then there is a presence of normal distribution. Vice versa, if the probability is less than 0.05 ($0.05 <$), there is no normal distribution.

3.3.3.2 Multicollinearity Test

Multicollinearity test is conducted to determine the relationship between some or all of the variables. If the model contains multicollinearity, then the model has a large standard errors and the coefficients cannot be estimated with high accuracy. There are ways to detect multicollinearity and one of them is by looking at the value of the determination coefficient. Widarjono (2013) stated, if the value of the determination coefficient is greater than 0.8 (> 0.8), it means the result has multicollinearity and vice versa and when most of the problem largely effected by multicollinearity, then it has no effect on the study.

3.3.3.3 Heteroscedasticity Test

Heteroscedasticity test occurs when there is a disturbance that appears in the regression function that has a variant that does not comply with the OLS estimators and inefficient both in small samples and large samples (but still unbiased and consistent). One of the ways to detect heteroscedasticity problem is by using Park test with t test. The criteria of the test is when $t \text{ test} < t \text{ table}$, then between the independent variables, no heteroscedasticity will be effected, the rest or regression model with variance residual is homogenous and vice versa. Other than that, we can also use white test to determine the presence of heteroscedasticity by comparing the probability of chi- square value with degree

of error. If chi- square is less than then the degree of error (chi- square < degree of error), it contains heteroscedasticity. When chi- square > degree of error, it does not contain any heteroscedasticity (Widarjono, 2013).

3.3.3.4 Autocorrelation Test

Autocorrelation test is to determine the correlation between disorders that are no longer efficient to estimators in small samples or models with large samples. The presence of autocorrelation can be detect by using Durbin- Watson test (DW). The result is then will be compared with F table. When the result of DW is smaller than F table (DW < F table), then there is no autocorrelation in the regression and vice versa.

3.3.4 Unit Root Test

In statistics and econometrics, the unit root test is used to test whether the time series data used in a study is stationary or not. Augmented Dickey- Fuller test is commonly used in unit root test. Another similar test with same function is known as Phillips- Perron test where both indicate the presence of a unit root null hypothesis (Ariyoso, 2009).

3.3.5 Error Correction Mechanism (ECM)

ECM is an analysis of time series data with variables that have a dependency or often referred as cointegration. ECM method used to balance short run economic relationship variables that have a balance/ long run economic relationship (Marwadi Muhammad Chalik, 2014).

CHAPTER IV

DATA ANALYSIS AND DISCUSSION

This chapter represents the results and discussion of research and analysis of the data that has been processed by using EViews.

Study Case on The Significance of Islamic Banking on Indonesia's Economic Growth

The result of the time series data (quarterly) from World Bank, Bank Indonesia, Badan Pusat Statistik and Trading Economics such as Gross Domestic Product (GDP) as the dependent variable, Total Investment (INV), Total Financing (TF), Inflation (I), Export (EX) and Import (IM) as independent variables are shown below:

4.1 Multiple Linear Regression

The result of multiple linear regression equation is shown as follow:

$$GDP_t = \beta_0 + \beta_1 INV_t + \beta_2 TF_t + \beta_3 I_t + \beta_4 EX_t + \beta_5 IM_t + \varepsilon$$

$$\widehat{GDP}_t = -1185651 + 1.417 + 2.331 + 3196.782 + 2.489 + 32.642$$

4.2 Normality Test

This test examines whether the dependent and independent variables have a normal distribution relationship which will determine whether the data used in this study is valid or not. The result of this study can be explained as shown in diagram below:

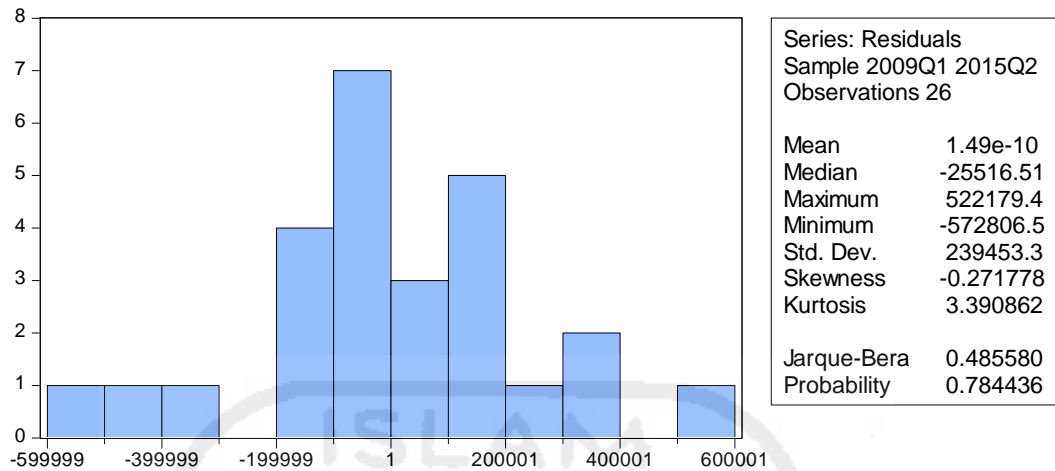


Diagram 4.1 Normality Test Result

As shown in the diagram above, the probability of normality test is higher than 0.05 ($0.784 > 0.05$). With this, a conclusion has been made, the data used in this study is valid.

4.2.1 Multicollinearity Test

Table 4.2.1

THE RESULT OF MULTICOLLINEARITY TEST

Variable	Centered VIF
INV	1.305
TF	2.810
I	1.764
EX	3.150
IM	4.844

The results of multicollinearity test can be seen in column Centered VIF. The value for variable INV, TF, I, EX and IM are 1.305, 2.810, 1.764, 3.150 and 4.844. Because of the value of each variable is not more than 10, it can be said that multicollinearity does not exist.

4.2.2 Heteroscedasticity Test

Table 4.2.2

THE RESULT OF HETEROSCEDASTICITY TEST

Prob. F	0.0001
Prob. Chi- Square (5)	0.0025
Prob. Chi Square (5)	0.0057

When the value of Prob. F is greater than α 5% (0.05), then H_0 is accepted, which means there is no heteroscedasticity, whereas when the value of Prob. F is smaller than α 5%, then it is known that H_0 is rejected and the presence of heteroscedasticity can be found. As shown in the diagram above, the value of Prob. F is smaller than α 5% ($0.0001 < 0.005$). Based on hypothesis, H_0 is rejected and there is heteroscedasticity. Since it contains heteroscedasticity problem, it needed to be “heal”. In order to make the result free from heteroscedasticity problem, one of the ways that can be use id to transform the linear model into a log- linear. The result of the log- linear model is shown as below:

$$\log(GDP_t) = \beta_0 + \log(INV_t) + \log(TF_t) + \log(I_t) + \log(EX_t) + \log(IM_t) + \varepsilon$$

Table 4.2.2.1

THE RESULT OF LOG LINEAR HETEROSCEDASTICITY TEST

Prob. F	0.0000
Prob. Chi- Square (5)	0.0009
Prob. Chi Square (5)	0.0008

The results as shown in Table 4.2.2.1 show the presence of heteroscedasticity after went through a healing process by turning a linear model into a log- linear model. Another healing process result is shown as below:

Table 4.2.2.2

THE RESULT OF WHITE HETEROSCEDASTICITY TEST

Dependent Variable : GDP
 Method : Least Squares
 Sample : 2009Q1 2015Q2
 White heteroscedasticity- consistent standard errors & covariance

Variable	Coefficient	St. Error	t- Statistic	Prob.
INV	1.417	1.097	1.292	0.2109
TF	2.331	0.543	4.290	0.0004
I	3196.782	49123.560	0.065	0.9488
EX	2.409	9.742	0.247	0.8072
IM	32.642	6.503	5.020	0.0001

By comparing α 5% with the value of probability, we can conclude whether the variables used in this study are significance towards the dependent variable or not. If the value of probability is greater than α 5%, it means the independent variables do not have a significance effect on dependent variable and vice versa. As shown in Table 4.4, independent variable TF and IM, both probability values are smaller than 0.05 ($0.0004 < 0.05$) and ($0.0001 < 0.05$), showed a significance effect on dependent variable, GDP. As for the other independent variables, INV, I and EX, the probability of each variable is greater than α 5% which ended up with not being significance towards dependent variable.

In long- run period, we can estimate all variables tent to move towards it equilibrium. In other words, in short- run period, variable which represents

Islamic Banking (TF) and other independent variables and dependent variable (GDP) are tend to adjust each other to each a balance equilibrium.

4.2.3 Autocorrelation Test

This test is done in order to detect if there is a correlation problem in this study and the result is shown below:

Table 4.2.3

THE RESULT OF AUTOCORRELATION TEST

Breusch- Godfrey Serial Correlation LM Test	
Prob. F	1.8722
Obs*R- squared	4.4772

From the diagram above, the results show no presence of autocorrelation. This is because the value of Prob. F and Obs*R- squared are greater than 0.05 ($1.8722 > 0.05$) and ($4.4772 > 0.05$). We can conclude it by saying the data used is free from autocorrelation.

4.3 Statistical Analysis

4.3.1 Coefficient of Determination

The coefficient (R squared) indicated the proportion of the variance in the dependent variable that is predicted from the independent variables.

Table 4.3.1

THE RESULT OF COEFFICIENT OF DETERMINATION

R- squared	0.8854
------------	--------

From the table above, the variation of independent variables (INV, TF, I, EX and IM) are able to explain the dependent variable (GDP) by 88.54% and the remaining 11.46% is explained by other variables.

4.3.2 F- test

F- test is conducted by comparing the result of Prob. F with table F in order to see the effect of all independent variables on the dependent variable and the result of this study is shown as below:

Table 4.3.2

THE RESULT OF F TEST

Prob (F- statistic)	0.0000	Significant
---------------------	--------	-------------

The result of Prob (F- statistic) is smaller than 0.05 ($0.0000 < 0.05$), it means that the independent variables (INV, TF, I, EX and IM) simultaneously significance on dependent variable (GDP).

4.3.3 t- Test

The result of this study is observed through the probability of each independent variable from t- test. Thus, when the probability is significance or

the other way round, we can make our conclusion with hypothesis of this study that once made in previous chapter.

$$\widehat{GDP}_t = 1.4175INV_t + 2.3315TF_t + 3196.782I_t + 2.4087EX_t + 32.6423IM_t$$

(1.0968) (0.5435) (49123.56) (9.7423) (6.5027)

$R^2 = 0.8854$

Table 4.3.3

THE REGRESSION RESULT FROM EIEWS

Dependent Variable : GDP
 Method : Least Squares
 Sample : 2009Q1 2015Q2

Variable	Coefficient	St. Error	t-Statistic	Prob.
INV	1.417	1.097	1.292	0.2109
TF	2.331	0.543	4.290	0.0004
I	3196.782	49123.560	0.065	0.9488
EX	2.409	9.742	0.247	0.8072
IM	32.642	6.503	5.020	0.0001

R^2 values is 0.8854 (88.54%), which means that the independent variables are able to explain the impact of 88.54% on dependent variable. From the above results, we can see independent variable TF has a positive result (2.331), meaning total financing is significance to GDP. The statistical result above, a comparison between α 5% and the value of probability can made. If the value of probability is greater than α 5%, it means there is no significance relationship between dependent and independent variables and vice versa. As for the result as shown in Table 4.8, a further explanation is shown below:

- The probability of INV is higher than α 5% ($0.2109 > 0.05$), it means INV does not have a significance effect on dependent variable, GDP.

- The probability of TF is smaller than α 5% ($0.004 < 0.05$). It means TF is significance on dependent variable, GDP. If variable TD increased by 1%, then GDP will increase by 0.2331 (note that other variables are constant) and vice versa.
- The probability of I is higher than α 5% ($0.9488 > 0.05$), it means I does not have a significance effect on dependent variable, GDP.
- The probability of EX is higher than α 5% ($0.8072 > 0.05$), it means EX does not have a significance effect on dependent variable, GDP.
- The probability of IM is greater than α 5% ($0.0001 < 0.05$), it means IM do have a significance effect on dependent variable, GDP.

Based on the probability values that have been compared with α 5%, we can conclude that independent variables TF and IM have a significance effect on GDP. Both variables contribute to the growth of Indonesia's economic and mutually influence between each other. Focusing on Islamic banking (TF), if there is a growth in the Islamic financial sector, it will somehow has a positive impact on economic growth. Likewise, the economic growth will affect positively on the development of Islamic banking. In Indonesia, the government has a policy that encourage investment, which in turn is able to develop the financial sector, both conventional and Islamic banking.

4.4 Unit Root Test

In statistics and econometrics, the unit root test is used to test whether the time series data used in a study is stationary or not. Augmented Dickey- Fuller test is commonly used in unit root test. The result of each variable will be shown below:

Table 4.4

THE VALUE OF PROBABILITY OF UNIT ROOT TEST

Variable	Level	1 st difference
GDP	0.6362	0.0008
INV	0.0712	0.0327
TF	0.0000	0.0000
I	0.1039	0.0000
EX	0.1888	0.0000
IM	0.0582	0.0001

From the table above, most of the variables used in this study are not stationer at level since the probability of each variable is greater than α 5%, except for independent variable, total financing (TF). TF is stationer at level as shown in the table where the value of probability is smaller than α 5% ($0.0000 < 0.05$). Then, a second stationarity test has been made by testing each variable on first difference. As for the result, all variables are stationer at first difference.

4.5 Error Correction Model (ECM)

4.5.1 Estimation of Long- term Equation

Table 4.5.1

THE RESULT OF LONG- TERM EQUATION

Variable	Probability
INV	0.3323
TF	0.0001
I	0.9382
EX	0.8418
IM	0.0247
Prob (F-statistic): 0.0000	

The value of Prob (F-statistic) is smaller than 0.05 ($0.0000 < 0.05$), it means the independent variables are simultaneously significance to dependent variable. The significance of each variable does not need to be below 0.05 because it depends on the theoretical of a study. In this case, this study will focus on total financing (TF) for it is a variable which represents Islamic banking. Based on the probability values as shown in Table 4.10 that have been compared with α 5%, we can conclude that independent variables TF and IM have a significance effect on GDP.

Both variables contribute to the growth of Indonesia's economic and mutually influence between each other. Focusing on Islamic banking (TF), if there is a growth in the Islamic financial sector, it will somehow has a positive impact on economic growth. Likewise, the economic growth will affect

positively on the development of Islamic banking. In Indonesia, the government has a policy that encourage investment, which in turn is able to develop the financial sector, both conventional and Islamic banking.

4.5.2 Cointegration

Table 4.5.2

THE PROBABILITY VALUE OF RES

Phillips-Perron Unit Root Test on RES	
Prob.	0.0217

The result above showed res variable is stationer at level or in other words, stating that variable GDP, INV, TF, I, EX and IM are cointegrated with each other.

4.5.3 Estimation of Short- term Equation

Table 4.5.3

THE RESULT OF SHORT TERM EQUATION

Variable	Probability
D(INV)	0.2496
D(TF)	0.3020
D(I)	0.2375
D(EX)	0.4801
D(IM)	0.3124
RES(-1)	0.0055
Prob (F-statistic) 0.1308	

The value of Prob (F-statistic) is greater than 0.05 ($0.1308 > 0.05$), it means the independent variables are not simultaneously significance to dependent

variable. Based on the probability values as shown in Table 4.5.3 that have been compared with α 5%, we can conclude that none of the variables used in this study are significance to dependent variable on a short- run economic growth. In a nutshell, there is a 65% of imbalance on a short- term effect on INV, TF, I, EX and IM on GDP that have been corrected every period.



CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The test results of the regression model turned out significance for main independent variable (TF) and insignificant for the other independent variables except IM. Variable total financing of Islamic bank and other variables are able to explain the effect of 88.54% on GDP variable. This means that the role of Islamic banking for economic growth is doing well even though it is not fully participate on the growth of economic. Probably because of the market share of Islamic banking is still low compared with conventional banks even though the number of Islamic banking assets continued to increase is one of the reasons on why it still can't fully compete in financial sector. Focusing on Islamic banking (TF), if there is a growth in the Islamic financial sector, it will somehow has a positive impact on economic growth. Likewise, the economic growth will affect positively on the development of Islamic banking. In Indonesia, the government has a policy that encourage investment, which in turn is able to develop the financial sector, both conventional and Islamic banking.

5.2 Recommendation

There are various strategies that can be done by Islamic banking in order to boost up their market shares among other. One of it is by improving the quality and quantity of human resources. Next, Islamic banking need to consider to

increase financing scheme of *mudharabah* for it is proven reduce poverty, unemployment, and inflation. This thesis is far from perfect and there are still a lot of errors. Any corrections, constructive criticism and good suggestions are welcomed for the perfection of this thesis.



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APPENDICES

APPENDICES I: VARIABLES DATA

Dependent Variable

Indonesia's GDP (Billion Rp.)				
Year	Q1	Q2	Q3	Q4
2009	493,103.0	505,579.0	525,618.2	512,385.3
2010	523,902.1	538,799.7	558,226.1	550,185.6
2011	1,748,731.2	1,816,268.2	1,881,849.7	1,840,786.2
2012	1,855,580.2	1,929,018.7	1,993,632.3	1,948,852.2
2013	1,958,395.5	2,036,816.6	2,103,598.1	2,057,687.6
2014	2,058,984.7	2,137,771.9	2,208,106.7	2,161,407.9
2015	2,156,469.1	2,237,413.3	2,312,692.5	2,270,356.6

Independent Variables

Total Investment (Billion Rp.)				
Year	Q1	Q2	Q3	Q4
2009	392,435	427,356	462,486	454,816
2010	482,144	513,652	562,692	524,871
2011	577,345	598,954	637,744	629,497
2012	729,076	774,225	762,874	755,490
2013	773,100	847,260	803,840	804,390
2014	873,540	940,150	928,570	910,180
2015	973,990	1,015,320	1,056,810	942,610

Total Financing (Billion Rp.)				
Year	Q1	Q2	Q3	Q4
2009	115992	122636	131241	137858
2010	145825	160675	178878	197118
2011	215426	236961	267935	298887
2012	309641	339203	376213	423404
2013	464825	501893	526343	544239
2014	548134	570711	584625	594197
2015	595348	609314		

Indonesia's Inflation Rate				
Year	Q1	Q2	Q3	Q4
2009	7.92	3.65	2.83	2.78
2010	3.43	5.05	5.8	6.96
2011	6.65	5.54	4.61	3.79
2012	3.97	4.53	4.31	4.30
2013	5.9	5.9	8.40	8.38
2014	7.32	6.7	4.53	8.36
2015	6.38	7.26	6.83	3.35

Indonesia's Export (\$ Million)				
Year	Q1	Q2	Q3	Q4
2009	23029.16	27044.21	30070.50	36366.16
2010	35536.69	36984.49	38395.12	46862.81
2011	45387.48	53228.54	53609.71	51270.89
2012	48517.03	48444.20	33395.73	47034.90
2013	31901.70	45653.07	42878.35	48604.69
2014	44298.99	44526.50	43881.50	43586.50
2015	39052.50	39300.00	36781.00	35149.40

Indonesia's Import (\$ Million)				
Year	Q1	Q2	Q3	Q4
2009	19093.74	22283.52	26907.54	28544.74
2010	29961.24	32976.14	34451.62	38274.29
2011	38794.79	44786.15	46451.77	47402.85
2012	45747.07	50702.14	45516.89	49724.92
2013	45650.61	48760.05	45938.81	46279.21
2014	43230.63	46747.70	44421.00	43804.10
2015	36731.10	37218.00	33976.70	34705.70

APPENDICES II: REGRESSION RESULTS

Normality Test

Dependent Variable: GDP
 Method: Least Squares
 Date: 03/05/17 Time: 20:56
 Sample: 2009Q1 2015Q2
 Included observations: 26

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1185651.	570208.3	-2.079329	0.0507
INV	1.417484	1.426700	0.993540	0.3323
TF	2.331453	0.497920	4.682385	0.0001
I	3196.782	40711.92	0.078522	0.9382
EX	2.408674	11.91473	0.202159	0.8418
IM	32.64229	13.43844	2.429024	0.0247
R-squared	0.885418	Mean dependent var		1551507.
Adjusted R-squared	0.856773	S.D. dependent var		707396.3
S.E. of regression	267716.9	Akaike info criterion		28.03242
Sum squared resid	1.43E+12	Schwarz criterion		28.32275
Log likelihood	-358.4215	Hannan-Quinn criter.		28.11603
F-statistic	30.90954	Durbin-Watson stat		1.187171
Prob(F-statistic)	0.000000			

Multicollinearity Test

Variance Inflation Factors
 Date: 03/05/17 Time: 21:32
 Sample: 2009Q1 2015Q2
 Included observations: 26

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	3.25E+11	117.9476	NA
INV	2.035472	88.96675	1.305339
TF	0.247924	14.06482	2.810076
I	1.66E+09	20.52882	1.763737
EX	141.9607	91.81815	3.148593
IM	180.5916	109.7439	4.844310

Heteroscedasticity Test

Heteroskedasticity Test: Glejser

F-statistic	9.631395	Prob. F(5,20)	0.0001
Obs*R-squared	18.37055	Prob. Chi-Square(5)	0.0025
Scaled explained SS	16.43313	Prob. Chi-Square(5)	0.0057

The Healing Process of Heteroscedasticity (by changing linear model to log linear)

$$\log(GDP_t) = \beta_0 + \log(INV_t) + \log(TF_t) + \log(I_t) + \log(EX_t) + \log(IM_t) + \varepsilon$$

Dependent Variable: LOG(GDP)

Method: Least Squares

Date: 03/06/17 Time: 22:09

Sample: 2009Q1 2015Q2

Included observations: 26

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7.292485	5.587912	-1.305047	0.2067
LOG(INV)	0.309376	0.465229	0.664997	0.5136
LOG(TF)	0.713619	0.178877	3.989444	0.0007
LOG(I)	-0.008378	0.203680	-0.041131	0.9676
LOG(EX)	0.062290	0.481123	0.129468	0.8983
LOG(IM)	0.737117	0.552327	1.334566	0.1970
R-squared	0.866166	Mean dependent var		14.09827
Adjusted R-squared	0.832708	S.D. dependent var		0.632806
S.E. of regression	0.258826	Akaike info criterion		0.333855
Sum squared resid	1.339821	Schwarz criterion		0.624185
Log likelihood	1.659882	Hannan-Quinn criter.		0.417460
F-statistic	25.88779	Durbin-Watson stat		1.019920
Prob(F-statistic)	0.000000			

Heteroskedasticity Test: Glejser

F-statistic	15.52470	Prob. F(5,20)	0.0000
Obs*R-squared	20.67341	Prob. Chi-Square(5)	0.0009
Scaled explained SS	21.14375	Prob. Chi-Square(5)	0.0008

Autocorrelation Test

Method: Least Squares

Date: 03/05/17 Time: 21:45

Sample: 2009Q1 2015Q2

Included observations: 26

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1185651.	500083.3	-2.370907	0.0279
INV	1.417484	1.096760	1.292428	0.2109
TF	2.331453	0.543476	4.289893	0.0004
I	3196.782	49123.56	0.065076	0.9488
EX	2.408674	9.742256	0.247240	0.8072
IM	32.64229	6.502694	5.019810	0.0001

R-squared	0.885418	Mean dependent var	1551507.
Adjusted R-squared	0.856773	S.D. dependent var	707396.3
S.E. of regression	267716.9	Akaike info criterion	28.03242
Sum squared resid	1.43E+12	Schwarz criterion	28.32275
Log likelihood	-358.4215	Hannan-Quinn criter.	28.11603
F-statistic	30.90954	Durbin-Watson stat	1.187171
Prob(F-statistic)	0.000000	Wald F-statistic	72.00785
Prob(Wald F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.872203	Prob. F(2,18)	0.1825
Obs*R-squared	4.477224	Prob. Chi-Square(2)	0.1066

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 03/06/17 Time: 22:42

Sample: 2009Q1 2015Q2

Included observations: 26

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-186240.7	573627.7	-0.324672	0.7492
INV	0.424168	1.388359	0.305517	0.7635
TF	-0.180848	0.489673	-0.369323	0.7162
I	35380.24	46681.54	0.757906	0.4583
EX	-4.460394	12.05698	-0.369943	0.7157
IM	2.329823	13.14701	0.177213	0.8613
RESID(-1)	0.464763	0.248870	1.867490	0.0782
RESID(-2)	0.006463	0.269667	0.023967	0.9811

R-squared	0.172201	Mean dependent var	1.49E-10
Adjusted R-squared	-0.149721	S.D. dependent var	239453.3
S.E. of regression	256753.9	Akaike info criterion	27.99728
Sum squared resid	1.19E+12	Schwarz criterion	28.38439
Log likelihood	-355.9647	Hannan-Quinn criter.	28.10876
F-statistic	0.534915	Durbin-Watson stat	1.999355

Prob(F-statistic) 0.796953

Unit Root Test

GDP

Level

Null Hypothesis: GDP has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=5)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.249361	0.6362
Test critical values:		
1% level	-3.724070	
5% level	-2.986225	
10% level	-2.632604	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(GDP)

Method: Least Squares

Date: 03/06/17 Time: 23:59

Sample (adjusted): 2009Q2 2015Q2

Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.085149	0.068154	-1.249361	0.2241
C	199545.1	114117.0	1.748601	0.0937

R-squared	0.063552	Mean dependent var	69772.41
Adjusted R-squared	0.022837	S.D. dependent var	239043.1
S.E. of regression	236297.8	Akaike info criterion	27.66019
Sum squared resid	1.28E+12	Schwarz criterion	27.75770
Log likelihood	-343.7524	Hannan-Quinn criter.	27.68724
F-statistic	1.560904	Durbin-Watson stat	2.017139
Prob(F-statistic)	0.224098		

1st difference

Null Hypothesis: D(GDP) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=5)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.834718	0.0008
Test critical values:		
1% level	-3.737853	
5% level	-2.991878	
10% level	-2.635542	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(GDP,2)
 Method: Least Squares
 Date: 03/07/17 Time: 00:01
 Sample (adjusted): 2009Q3 2015Q2
 Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP(-1))	-1.029091	0.212854	-4.834718	0.0001
C	74176.00	52974.53	1.400220	0.1754
R-squared	0.515146	Mean dependent var		2852.842
Adjusted R-squared	0.493107	S.D. dependent var		350095.1
S.E. of regression	249255.1	Akaike info criterion		27.77000
Sum squared resid	1.37E+12	Schwarz criterion		27.86817
Log likelihood	-331.2400	Hannan-Quinn criter.		27.79604
F-statistic	23.37450	Durbin-Watson stat		2.004595
Prob(F-statistic)	0.000079			

Total Investment

Level

Null Hypothesis: INV has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=5)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.809730	0.0712
Test critical values:		
1% level	-3.724070	
5% level	-2.986225	
10% level	-2.632604	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(INV)
 Method: Least Squares
 Date: 03/07/17 Time: 10:21
 Sample (adjusted): 2009Q2 2015Q2
 Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INV(-1)	-0.500151	0.178007	-2.809730	0.0099
C	176283.7	61331.84	2.874260	0.0086
R-squared	0.255533	Mean dependent var		5182.520

Adjusted R-squared	0.223165	S.D. dependent var	41407.94
S.E. of regression	36496.23	Akaike info criterion	23.92442
Sum squared resid	3.06E+10	Schwarz criterion	24.02193
Log likelihood	-297.0553	Hannan-Quinn criter.	23.95147
F-statistic	7.894583	Durbin-Watson stat	1.767305
Prob(F-statistic)	0.009945		

1st difference

Null Hypothesis: D(INV) has a unit root

Exogenous: Constant

Lag Length: 5 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.247900	0.0327
Test critical values:	1% level	-3.831511	
	5% level	-3.029970	
	10% level	-2.655194	

*MacKinnon (1996) one-sided p-values.

Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 19

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(INV,2)

Method: Least Squares

Date: 03/07/17 Time: 10:21

Sample (adjusted): 2010Q4 2015Q2

Included observations: 19 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INV(-1))	-2.333544	0.718478	-3.247900	0.0070
D(INV(-1),2)	1.145181	0.648778	1.765134	0.1030
D(INV(-2),2)	0.978770	0.586316	1.669355	0.1209
D(INV(-3),2)	0.687795	0.469691	1.464355	0.1688
D(INV(-4),2)	0.933074	0.357245	2.611858	0.0227
D(INV(-5),2)	0.633097	0.248328	2.549435	0.0255
C	948.2868	8207.386	0.115541	0.9099

R-squared	0.820269	Mean dependent var	-182.7895
Adjusted R-squared	0.730403	S.D. dependent var	68638.61
S.E. of regression	35639.03	Akaike info criterion	24.07758
Sum squared resid	1.52E+10	Schwarz criterion	24.42553
Log likelihood	-221.7370	Hannan-Quinn criter.	24.13647
F-statistic	9.127725	Durbin-Watson stat	1.823712
Prob(F-statistic)	0.000676		

Inflation

Level

Null Hypothesis: I has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=5)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.611837	0.1039
Test critical values:		
1% level	-3.724070	
5% level	-2.986225	
10% level	-2.632604	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(I)

Method: Least Squares

Date: 03/07/17 Time: 10:29

Sample (adjusted): 2009Q2 2015Q2

Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
I(-1)	-0.437914	0.167665	-2.611837	0.0156
C	2.390708	0.968985	2.467230	0.0215
R-squared	0.228749	Mean dependent var		-0.026400
Adjusted R-squared	0.195217	S.D. dependent var		1.600734
S.E. of regression	1.436014	Akaike info criterion		3.638238
Sum squared resid	47.42912	Schwarz criterion		3.735748
Log likelihood	-43.47797	Hannan-Quinn criter.		3.665283
F-statistic	6.821693	Durbin-Watson stat		1.493005
Prob(F-statistic)	0.015591			

1st difference

Null Hypothesis: D(I) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=5)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.312601	0.0000
Test critical values:		
1% level	-3.737853	
5% level	-2.991878	
10% level	-2.635542	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(I,2)
 Method: Least Squares
 Date: 03/07/17 Time: 10:33
 Sample (adjusted): 2009Q3 2015Q2
 Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(I(-1))	-1.118534	0.177191	-6.312601	0.0000
C	0.142811	0.281884	0.506629	0.6175
R-squared	0.644295	Mean dependent var		0.214583
Adjusted R-squared	0.628126	S.D. dependent var		2.262688
S.E. of regression	1.379820	Akaike info criterion		3.561439
Sum squared resid	41.88588	Schwarz criterion		3.659610
Log likelihood	-40.73726	Hannan-Quinn criter.		3.587484
F-statistic	39.84893	Durbin-Watson stat		2.201939
Prob(F-statistic)	0.000002			

Export

Level

Null Hypothesis: EX has a unit root
 Exogenous: Constant
 Lag Length: 3 (Automatic - based on SIC, maxlag=5)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.272552	0.1888
Test critical values:		
1% level	-3.769597	
5% level	-3.004861	
10% level	-2.642242	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(EX)
 Method: Least Squares
 Date: 03/07/17 Time: 10:36
 Sample (adjusted): 2010Q1 2015Q2
 Included observations: 22 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EX(-1)	-0.449294	0.197705	-2.272552	0.0363
D(EX(-1))	-0.329953	0.216708	-1.522565	0.1463
D(EX(-2))	0.449481	0.208398	2.156835	0.0456
D(EX(-3))	0.264826	0.204397	1.295647	0.2124
C	19272.74	8620.951	2.235570	0.0391
R-squared	0.628000	Mean dependent var		133.3564
Adjusted R-squared	0.540471	S.D. dependent var		7117.207
S.E. of regression	4824.655	Akaike info criterion		19.99758

Sum squared resid	3.96E+08	Schwarz criterion	20.24555
Log likelihood	-214.9734	Hannan-Quinn criter.	20.05600
F-statistic	7.174733	Durbin-Watson stat	1.939903
Prob(F-statistic)	0.001418		

1st difference

Null Hypothesis: D(EX) has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.618946	0.0000
Test critical values:	1% level	-3.737853	
	5% level	-2.991878	
	10% level	-2.635542	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(EX,2)
 Method: Least Squares
 Date: 03/07/17 Time: 10:37
 Sample (adjusted): 2009Q3 2015Q2
 Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EX(-1))	-1.610589	0.167439	-9.618946	0.0000
C	918.3112	1148.410	0.799637	0.4325
R-squared	0.807901	Mean dependent var		-156.9813
Adjusted R-squared	0.799169	S.D. dependent var		12494.53
S.E. of regression	5599.320	Akaike info criterion		20.17833
Sum squared resid	6.90E+08	Schwarz criterion		20.27650
Log likelihood	-240.1400	Hannan-Quinn criter.		20.20438
F-statistic	92.52412	Durbin-Watson stat		1.546309
Prob(F-statistic)	0.000000			

Import

Level

Null Hypothesis: IM has a unit root
 Exogenous: Constant
 Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-2.911456	0.0582
Test critical values:	1% level	-3.724070	

5% level	-2.986225
10% level	-2.632604

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	8204502.
HAC corrected variance (Bartlett kernel)	6432401.

Phillips-Perron Test Equation

Dependent Variable: D(IM)

Method: Least Squares

Date: 03/07/17 Time: 18:08

Sample (adjusted): 2009Q2 2015Q2

Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IM(-1)	-0.188010	0.068251	-2.754674	0.0113
C	8269.300	2803.105	2.950050	0.0072
R-squared	0.248077	Mean dependent var		724.9704
Adjusted R-squared	0.215384	S.D. dependent var		3371.349
S.E. of regression	2986.291	Akaike info criterion		18.91807
Sum squared resid	2.05E+08	Schwarz criterion		19.01558
Log likelihood	-234.4759	Hannan-Quinn criter.		18.94512
F-statistic	7.588230	Durbin-Watson stat		2.727915
Prob(F-statistic)	0.011283			

1st difference

Null Hypothesis: D(IM) has a unit root

Exogenous: Constant

Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-5.985644	0.0001
Test critical values:		
1% level	-3.737853	
5% level	-2.991878	
10% level	-2.635542	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	10359416
HAC corrected variance (Bartlett kernel)	16869440

Phillips-Perron Test Equation

Dependent Variable: D(IM,2)

Method: Least Squares

Date: 03/07/17 Time: 18:09
 Sample (adjusted): 2009Q3 2015Q2
 Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IM(-1))	-1.255686	0.203563	-6.168528	0.0000
C	810.1711	702.3259	1.153554	0.2611
R-squared	0.633643	Mean dependent var		-112.6200
Adjusted R-squared	0.616991	S.D. dependent var		5431.967
S.E. of regression	3361.723	Akaike info criterion		19.15795
Sum squared resid	2.49E+08	Schwarz criterion		19.25612
Log likelihood	-227.8954	Hannan-Quinn criter.		19.18400
F-statistic	38.05073	Durbin-Watson stat		1.705587
Prob(F-statistic)	0.000003			

Total Financing

Level

Null Hypothesis: TF is stationary
 Exogenous: Constant
 Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

	LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic	0.737100
Asymptotic critical values*:	
1% level	0.739000
5% level	0.463000
10% level	0.347000
*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)	
Residual variance (no correction)	3.12E+10
HAC corrected variance (Bartlett kernel)	1.11E+11

KPSS Test Equation
 Dependent Variable: TF
 Method: Least Squares
 Date: 03/07/17 Time: 18:10
 Sample: 2009Q1 2015Q2
 Included observations: 26

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	353750.8	35352.37	10.00642	0.0000
R-squared	0.000000	Mean dependent var		353750.8
Adjusted R-squared	0.000000	S.D. dependent var		180262.4
S.E. of regression	180262.4	Akaike info criterion		27.07992
Sum squared resid	8.12E+11	Schwarz criterion		27.12831

Log likelihood	-351.0389	Hannan-Quinn criter.	27.09385
Durbin-Watson stat	0.016528		

1st difference

Null Hypothesis: D(TF) is stationary
 Exogenous: Constant
 Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

	LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic	0.176466
Asymptotic critical values*:	
1% level	0.739000
5% level	0.463000
10% level	0.347000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Residual variance (no correction)	1.48E+08
HAC corrected variance (Bartlett kernel)	3.75E+08

KPSS Test Equation
 Dependent Variable: D(TF)
 Method: Least Squares
 Date: 03/07/17 Time: 18:11
 Sample (adjusted): 2009Q2 2015Q2
 Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19732.88	2480.689	7.954597	0.0000

R-squared	0.000000	Mean dependent var	19732.88
Adjusted R-squared	0.000000	S.D. dependent var	12403.44
S.E. of regression	12403.44	Akaike info criterion	21.72851
Sum squared resid	3.69E+09	Schwarz criterion	21.77727
Log likelihood	-270.6064	Hannan-Quinn criter.	21.74204
Durbin-Watson stat	0.600460		

Error Correction Model (ECM)

Estimation of long term equation

Dependent Variable: GDP
 Method: Least Squares
 Date: 03/07/17 Time: 19:01
 Sample: 2009Q1 2015Q2
 Included observations: 26

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1185651.	570208.3	-2.079329	0.0507
INV	1.417484	1.426700	0.993540	0.3323
TF	2.331453	0.497920	4.682385	0.0001
I	3196.782	40711.92	0.078522	0.9382
EX	2.408674	11.91473	0.202159	0.8418
IM	32.64229	13.43844	2.429024	0.0247
R-squared	0.885418	Mean dependent var		1551507.
Adjusted R-squared	0.856773	S.D. dependent var		707396.3
S.E. of regression	267716.9	Akaike info criterion		28.03242
Sum squared resid	1.43E+12	Schwarz criterion		28.32275
Log likelihood	-358.4215	Hannan-Quinn criter.		28.11603
F-statistic	30.90954	Durbin-Watson stat		1.187171
Prob(F-statistic)	0.000000			

Cointegration

Null Hypothesis: RES has a unit root
 Exogenous: Constant
 Bandwidth: 1 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-3.380288	0.0217
Test critical values:		
1% level	-3.724070	
5% level	-2.986225	
10% level	-2.632604	

*Mackinnon (1996) one-sided p-values.

Residual variance (no correction)	4.54E+10
HAC corrected variance (Bartlett kernel)	4.56E+10

Phillips-Perron Test Equation
 Dependent Variable: D(RES)
 Method: Least Squares
 Date: 03/07/17 Time: 21:57

Sample (adjusted): 2009Q2 2015Q2
 Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RES(-1)	-0.629161	0.186231	-3.378387	0.0026
C	-11099.14	44455.34	-0.249669	0.8051
R-squared	0.331658	Mean dependent var		-8727.944
Adjusted R-squared	0.302599	S.D. dependent var		266133.0
S.E. of regression	222249.0	Akaike info criterion		27.53760
Sum squared resid	1.14E+12	Schwarz criterion		27.63511
Log likelihood	-342.2200	Hannan-Quinn criter.		27.56465
F-statistic	11.41350	Durbin-Watson stat		1.985436
Prob(F-statistic)	0.002591			

Short- term

Dependent Variable: D(GDP)
 Method: Least Squares
 Date: 03/07/17 Time: 22:14
 Sample (adjusted): 2009Q2 2015Q2
 Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-41923.11	96975.78	-0.432305	0.6707
D(INV)	1.537387	1.292327	1.189627	0.2496
D(TF)	4.534822	4.267326	1.062685	0.3020
D(I)	-38710.91	31679.56	-1.221952	0.2375
D(EX)	-7.091226	9.833374	-0.721139	0.4801
D(IM)	21.22686	20.42142	1.039440	0.3124
RES(-1)	-0.649351	0.206111	-3.150485	0.0055
R-squared	0.391402	Mean dependent var		69772.41
Adjusted R-squared	0.188535	S.D. dependent var		239043.1
S.E. of regression	215333.2	Akaike info criterion		27.62926
Sum squared resid	8.35E+11	Schwarz criterion		27.97054
Log likelihood	-338.3657	Hannan-Quinn criter.		27.72391
F-statistic	1.929358	Durbin-Watson stat		1.613049
Prob(F-statistic)	0.130770			