ISLAMIC BANK FINANCING AND ECONOMIC GROWTH: THE MALAYSIA EXPERIENCE

BY

CHONG SU CHEING
KE WAN PING
KOH CHENG LIN
KOH HUI SYIN
LIM KAI XIN

A research project submitted in partial fulfilment of the requirement for the degree of

BACHELOR OF BUSINESS ADMINISTRATION
(HONS) BANKING AND FINANCE

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE
DEPARTMENT OF FINANCE

MAY 2020

DECLARATION

We hereby declare that:

(1) This undergraduate FYP is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this FYP has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the FYP.

(4) The word count of this research report is _____19753_____.

Name of Student:	Student ID:	Signature:
1. CHONG SU CHEING	16ABB03547	
2. KE WAN PING	16ABB04530	
3. KOH CHENG LIN	16ABB04634	
4. KOH HUI SYIN	16ABB04041	
5. LIM KAI XIN	16ABB04693	

Date:

ACKNOWLEDGEMENT

This research has been successfully accomplished with the assistance and guidance of various authorities. We are appreciated to have this great opportunity to study this research and this research would not have been possible without the encouragement and support from them. We would like to express our sincere appreciation to the people who have made and provided involvement along this research project.

First of all, we would like to thank to Universiti Tunku Abdul Rahman (UTAR) for providing an opportunity for us to conduct this research project. We had gained a lot of experience and knowledge along the process. We are grateful that our university is always providing us the excellent study environment and facilities that assisted us to the completion of this study. Moreover, we are able to access the journals as well as reading materials easily from the library with the assistance of the staffs.

Besides, we would like to express our deep and sincere gratitude to our research supervisor, Mr William Choo Keng Soon, for giving a lot of invaluable support throughout this research. His sincerity and motivation have deeply inspired us and he is willing to spend his time on providing us guidance and useful advice even though he had a really busy schedule. This research project would not be possible without his supervision and enlightenment.

At the same time, we feel thankful to our examiner, Mr. Mahmond Saidek Bin Sulaiman for the valuable comments and useful advices on our research project. His guidance and comments have guided us to a better direction and enhance the performance of our research study.

Furthermore, we would like to deliver our gratefulness to all the lectures and tutor in Universiti Tunku Abdul Rahman (UTAR) for delivering the knowledge throughout the classes. Last but not least, a special thanks to all our group members who unveil their efforts, hard work and corporation in accomplishing this research.

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ADF   Augmented Dickey-Fuller Test

ARCH   Autoregressive Conditional Heteroskedasticity

FDI   Foreign Direct Investment

GDP   Gross Domestic Product

GFCF   Gross Fixed Capital Formation

HAC   Heteroskedasticity and Autocorrelation Corrected

IBF   Islamic Banks' Financing

INF   Inflation

JB   Jarque-Bera Test

OLS   Ordinary Least Squares

PP   Phillips-Perron Test

TRADE   Trade

VECM   Vector Error Correction Model

VIF   Variance Inflation Factors

PREFACE

Islamic bank's financing is a financing activity that refers to the Islamic Law (Shariah) and its sources are the Quran and Sunnah. It emphasizes the profit and loss sharing and prohibits the interest as well as the activities that are related to the risks, uncertainty and speculation. Islamic finance also prohibits the harmful activities such as investment in businesses dealing with alcohol, drug and gambling. In addition, Islamic bank's financing always a question that do Islamic bank's financing promote the economic growth in Malaysia.

According to the research, Islamic bank's financing (IBF) is selected as the dependent variable, while the independent variables are Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF), Foreign Direct Investment (FDI), Trade (TRADE) and Inflation (INF). These independent variables are used to determine whether there is a cointegration and long run relationship with Islamic bank's financing.

This study can provide a lot of useful information to the parties like policymaker, government and also investor. They are able to have a clear understanding about the connection between the Islamic finance and also the macroeconomic variables.

ABSTARCT

The main purpose of this research is to determine the cointegration and long run relationship between the Islamic banks' financing and macroeconomic variables in Malaysia. The macroeconomic variables consist of Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF), Foreign Direct Investment (FDI), Trade (TRADE) and Inflation (INF). This study also examines the causal relationship between the independent variables and dependent variables. There are 36 sample size and the quarterly data are collected from Bank Negara Malaysia and IMF's International Financial Statistics from period 2010 Q1 to 2018 Q4. In addition, for the review of methodology of framework, the relationship between the variables is investigated by using Johansen Cointegration test, Vector Error Correction Model (VECM), Granger Causality test and also Impulse Response Function. The result showed that IBF with both GDP and TRADE have cointegration in long run. Furthermore, IBF are cointegrated with FDI and INF in a short run. However, there is no cointegration relationship between IBF and GFCF. Not only that, the results of these findings can convey a lot of useful information to some parties like policymakers, investors and also government.

CHAPTER 1: RESEARCH OVERVIEW

1.0   Introduction

The objective of this research is to determine whether the Islamic Banks' Financing (IBF) with economic growth indicators which are Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF), Foreign Direct Investment (FDI), Trade (TRADE), Inflation (INF) in Malaysia have relationship in the long run and short run from the period 2010 Q1 to 2018 Q4. There are 36 sample sizes in total.

The research background will be presented in this chapter to explain the introduction of this research, followed by problem statements, research objectives and research questions. Besides that, the hypotheses of research identified in this study and continued with the significance of study. According to the result or finding, it will be important to policy makers, investors, and the government. The better understanding of this research can help to discover the short run and long-run impact of economic growth indicators on IBF.

1.1 Research Background

1.1.1 Development of Islamic Banking

Islamic banking is a banking system that refers to Shariah principles and guided by Islamic Muamalat ("What is Islamic Banking? Its Introduction and Concepts", 2019). Shariah principles defined as an Islamic law that contains the difference between conventional finance and Islamic finance. Islamic banking

also known as a banking system that is non interest, involved the principles that follow the Islamic rules. Shariah law stated that the Islamic banking's principles refers to the profit and loss sharing basis as well as the inhibition of receiving and counting of interests. The utilization of money for the reasons for earning money is explicitly illegal hence the wealth must be created from the asset-based investment and real exchange ("Introduction to Islamic finance", n. d.). Any collateral or bonds that involve interests are disposed from the framework due to the prohibition of interest. Hence, the funds providers become investors instead of creditors.

The origin of Islam in the seventh century was the beginning of Islamic banking. Prophet Muhammad worked as an agent for his first wife's business, who is Khadija. A large number of similar standards was utilized in the business (Lim, 2019). The standards used were the same as the principles that contemporary Islamic banking are applying nowadays. Islamic banking standards were determined by the exchange and business action in the Muslim world in the middle ages. Through the Mediterranean, Spain and other countries were spreading their banking standards. Hence, the basis of the western baking standards as well as principles were apparently based on these principles and standards.

In the year of 1963, the time of Islamic banking in Malaysia started with an investment funds body was made to set aside money for future pilgrims of Haj also known Haj Pilgrims Fund or Tabung Haji. The aim for establishing this institution is to help the Muslims to finance the savings in a non interest places so that they can save their money to perform Haji. However, the development of Islamic banking was established in 1980 which same as the Islamic banking people are aware today. Islamic Banking Act 1983 was officially set up and guide the Bank Islam Malaysia Bhd (BIMB) (Abdullah, 2019). This act diagrams the guidelines which must adjust to the Islamic banks that desire to

work in Malaysia, and entrusting the powers of Central Bank in controlling and administrating Islamic banks in Malaysia.

A policy that is known as Interest free Banking Scheme was introduced to the society in 1993. The development of Islamic banking system increased in a large number once the policy was launched to the public. The scheme is allowing the banking institutions as well as finance companies to provide the Islamic banking services and products. Hence, Islamic banking are preferred by the Muslim and non-Muslims and encouraging them to invest this sector. Total amount of 20 financial institutions began to provide Islamic banking services in 1993 (Nakagawa, 2009). In the year of 1994, for the purpose of allowing Islamic banking to operate as smooth as completely banking system, Islamic Interbank Money was established. Besides, Malaysia experienced a dual banking system in 1995. The number of banking institutions increased to 48 that offered Islamic banking in the year of 1998 (Nakagawa, 2009). However, the total amount of conventional banks that offer Islamic banking services and products was influenced because of the Central bank adjust program after the currency crisis of 1997. However, Islamic banks branches were increasing after the currency crisis. The amounts of branches accelerated from 80 to 128, and then increased sharply to the amount of 1,161 branches between the years 1998 to 2006 (Nakagawa, 2009). In 2005, domestic conventional banks were allowed to acquire full-fledged of Islamic banking licenses.

Malaysia has kept up its situation as the worldwide leader in Islamic finance. As the first country to issue Islamic bond, which is known as sukuk, Malaysia kept on being the primary driver for the market of sukuk. In addition, Malaysia occupied 51 percent of the total worldwide outstanding sukuk with the amount of US$396 billion (Bernama, 2018). At the end of 2017, Malaysia was proceeding to lead in the industry of Islamic wealth management with 36.5 percent worldwide. Nowadays, there are 16 Islamic banking institutions and five foreign Islamic Banks operating in Malaysia. In the year of 2017, the total

assets of the Islamic bank in Malaysia have grown to RM610.5 billion and with the total financing of RM 448.6 billion (Ng, 2017).

1.1.2 Malaysia's Economic Growth

Figure 1:

GDP and IBF
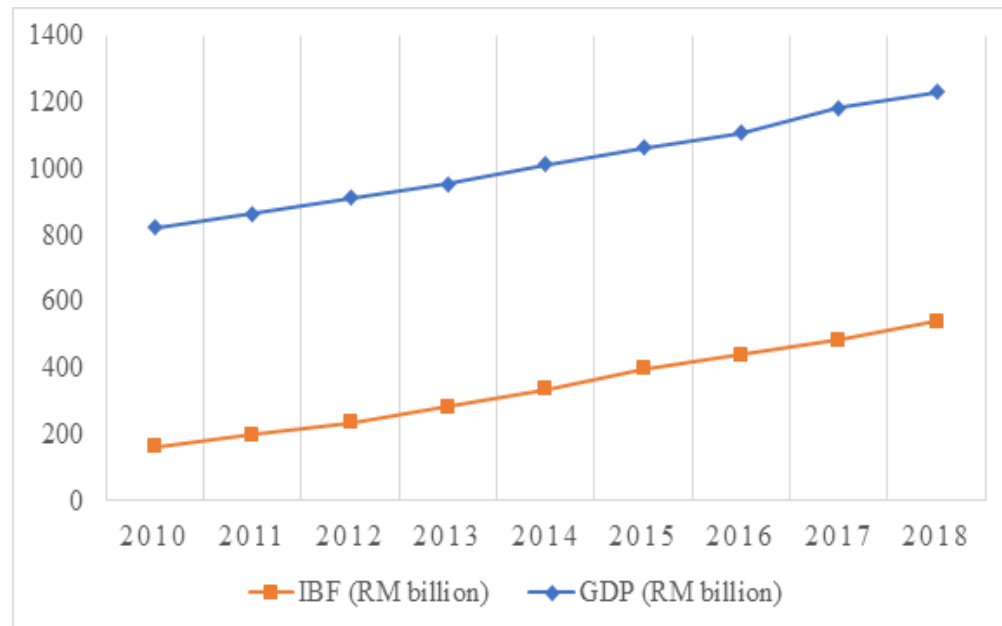
Note. Sources from Bloomberg, IMF's International Financial Statistics.

According to Figure 1, IBF and GDP show an upward trend from year 2010 to year 2018. GDP had a marginal increase of RM 821.44 billion from year 2010 before it faced a significant rise of RM 117.43 billion in 2018. On the other hand, IBF stood at RM 162.23 billion in 2010 and rose moderately to RM 484.06 billion in 2018. Moreover, both variables had their lowest value in 2010 and the highest value in 2018. In short, when IBF increases, GDP will increase too.

Figure 2:

IBF and GFCF
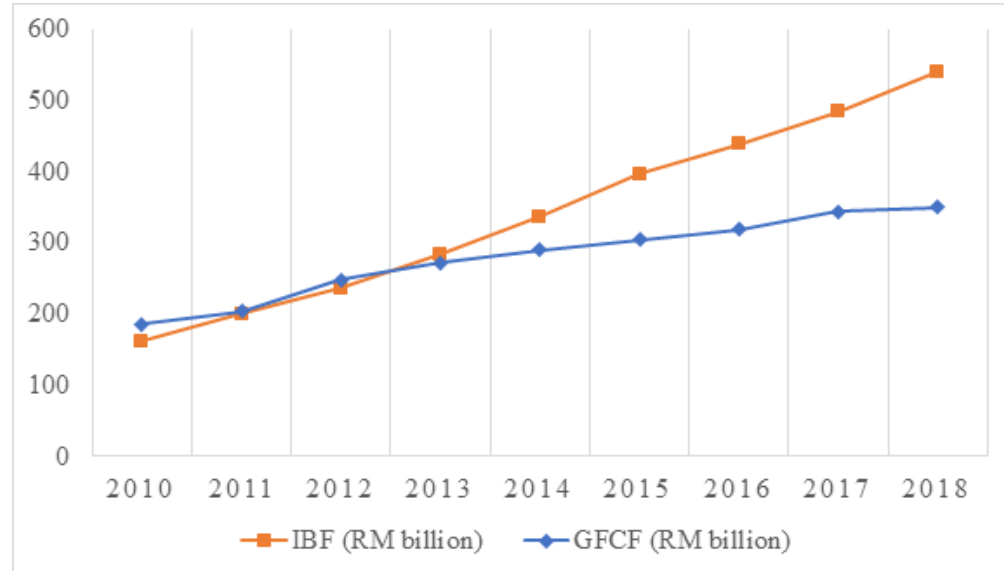
Note. Sources from Bloomberg, IMF's International Financial Statistics.

According to Figure 2, both IBF and GFCF show an upward trend from year 2010 to year 2018. GFCF increased slightly from RM 184.29 billion in 2010 to RM 202.25 billion next year. There was a sharp increase of RM 44.09 billion in 2012 after a moderate rise. GFCF continued to rise steadily each year which was recorded at RM 269.70 billion, RM 287.39 billion, RM 302.71 billion, RM 316.83 billion, RM 342.22 billion and RM 350.30 billion respectively from year 2013 to year 2018. On the other hand, the graph of IBF showed a gradual increase from year 2010 to year 2018. It was recorded at RM 162.23 billion at the beginning and RM 540.35 billion at the end. In short, when IBF increases, GFCF will increase too.

Figure 3:

IBF and FDI
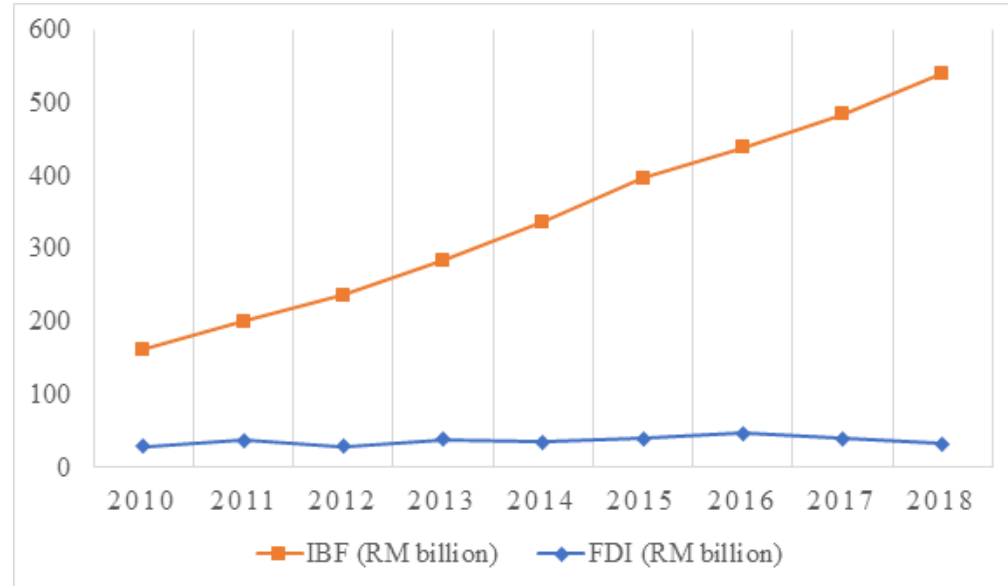
Note. Sources from Bloomberg, Monthly Statistical Bulletin of Bank Negara Malaysia.

According to Figure 3, IBF shows an upward trend while FDI moves on an average from year 2010 to year 2018. The figure shows FDI slightly raised from RM 29.18 billion to RM 37.33 billion in the year of 2010 to the next year. However, in the year 2012, it decreased back to RM 28.54 billion which is lower than the figure in 2010 and it is the lowest figure from the years 2010 to years 2018. FDI increased to RM 38.18 billion in the year of 2013 before dropping to RM 35.60 billion in 2014. The figure continues to rise steadily to RM 39.38 billion and RM 47.03 billion for the years 2015 and years 2016 respectively. In years 2016, FDI reached the highest amount among the years 2010 to years 2017. In the year of 2017, it decreased to RM 40.42 billion however it decreased to RM 32.65 billion in the year of 2018.

On the other hand, IBF kept increasing from year 2010 to year 2018. It reached the lowest value of RM 162.23 billion in year 2010 and the highest value of RM

540.35 billion in year 2018. IBF was at RM 200.53 billion in the year 2011, RM 236.74 billion in year 2012, RM 284.48 billion in years 2013, RM 337.33 billion in year 2014, RM 396.41 billion in years 2015, RM 439.37 billion in year 2016 and RM484.06 billion in year 2017.

Figure 4:

IBF and TRADE
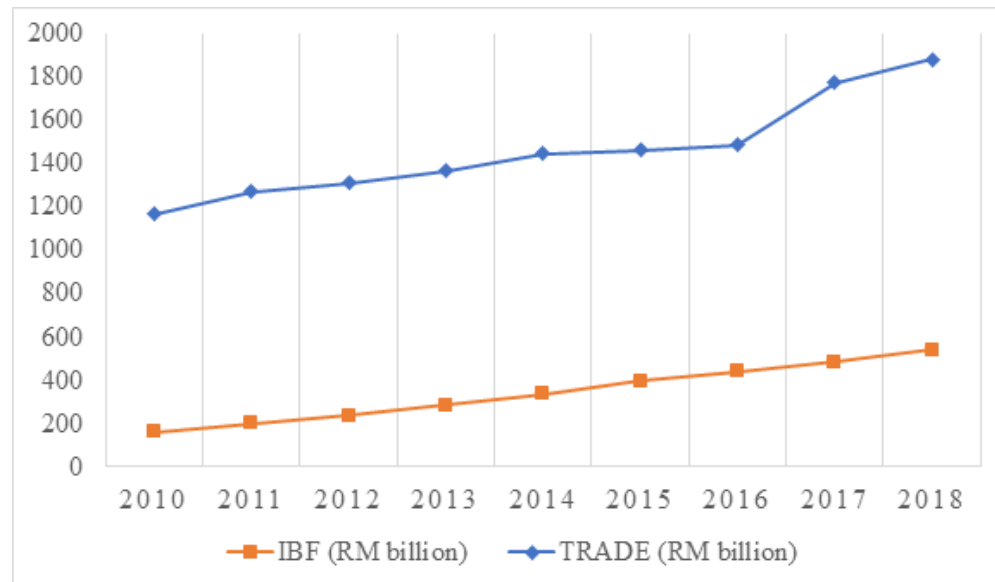
Note. Sources from Bloomberg, IMF's International Financial Statistics.

According to Figure 4 above, both IBF and TRADE show an upward trend from year 2010 to year 2018. TRADE increased gradually from year 2010 at RM 1,167.65 billion to year 2014 at RM 1,448.35 billion. It increased slightly from year 2014 to year 2016 at RM 1,448.35 billion and RM 1,485.78 billion respectively. It increased sharply from RM 1,485.78 billion in 2016 to RM 1,883.39 billion in 2018. It reached the lowest value in 2010 and the highest value in 2018.

On the other hand, IBF kept increasing from year 2010 at RM 162.23 billion to year 2018 at RM 540.35 billion. IBF was at RM 200.53 billion, RM 236.74 billion, RM 284.48 billion, RM 337.33 billion, RM 396.41 billion, RM 439.37 billion and RM 484.06 billion respectively from year 2011 to year 2017. It reached the lowest value in 2010 and the highest value in 2018. In short, when IBF increases, the TRADE also increases.

Figure 5:

IBF and INF
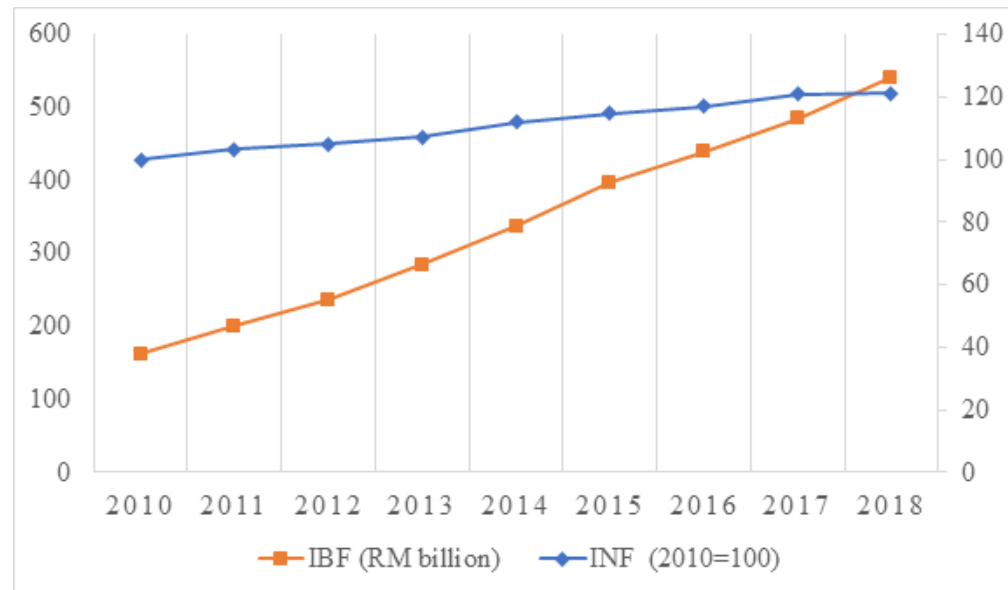
Note. Sources from Bloomberg, IMF's International Financial Statistics.

According to Figure 5, there was an upward trend for both IBF and INF from year 2010 to year 2018. The figures of INF were increasing from 100 in 2010 to 103.17 in 2011. After a slight increase of INF, it continues to rise to 104.89 next year and followed by a rapid growth of 107.10 in 2013. The figures of INF were increasing continuously at almost the same rate from year 2014 until the end of year 2018, which are 111.78, 114.78, 116.88, 120.88 and 121.08 respectively. On the other hand, there was a rapid increase in IBF from RM

162.23 billion in 2010 to RM 200.53 billion in 2011. The amount of IBF continued to grow until the end of the year 2018, which is RM 540.35 billion.

1.1.3 Importance of Islamic Banking Total Financing

According to Zin and Kadir (2011), Islamic finance is a financing activity that refer to the Islamic Law (Shariah) and its sources are the Quran and the Sunnah. It emphasizes the profit and loss sharing according to the Shariah. The Shariah prohibits the interest as well as the activities that are related to the risks, uncertainty and speculation. The harmful activities such as investment in businesses dealing in alcohol, drug and gambling are also prohibited in Islamic Finance. It represents the financial market and banking sector with its huge financial surpluses as a supplier. On the other hand, as a demander, it represents the consumers of financial and banking services. The savings account in Islamic banking industry has been introduced as the Islamic investment packages. For instance, Murabahah, Musharaka, and Mudharabah. The standards are higher and it promotes greater accountability and mitigation of risk. The components of Islamic banking total financing included hire purchase, leasing, factoring, personal financing, housing financing, trust receipts, etc.

Islamic finance can promote economic development by utilizing the concept of profit- and loss-sharing arrangements which empowers the lending of funds to productive companies or firms that can increase output and create jobs (Alawode, 2015). Basically the firms will hire more workers to complete the tasks when the level of activity increases and therefore generating more jobs in the industry and increasing the total output in a country as well. Islamic finance guarantees the industry assists only the transaction that serves a real purpose due to its emphasizing on the tangible and real assets, hence preventing financial speculation.

Nevertheless, risk-sharing in Islamic finance can promote an equitable distribution of wealth. Dr Firas Raad as a World Bank Group representative to Malaysia and country manager said that Islamic finance could play a vital role in addressing the high levels of poverty in Organization of Islamic Cooperation (OIC) countries. According to Aziz (2013), redistributive instruments, for example, mandatory aid giving, endowment and also charity work together with the risk-sharing financing tools as an effective tool to reduce poverty and develop a more balanced economic growth. The people will have more money to demand goods and services when the level of poverty decreases, they will have a high standard of living and become more productive, therefore contributing to economic growth.

Furthermore, Islamic Finance involves redistributing the wealth and opportunity according to Islamic rules ("Islamic finance: promoting real economic development", 2015). This is not only able to promote economic growth and   development, but also ensuring economic justice. The members in the   society are able to achieve justice before production which indicates that they have the same opportunities in the utilization of resources. This is done by transferring the collectivity's right of legislative mandate from those who are more able to use the resources to those less able. There are also members who are holding the rights but unable to use the resources. So, people must share the return from the use of resources no matter if they are more able or less able to use the resources (Zamir, Rostom & Fu, 2012).

Besides that, Islamic finance is able to foster economic growth by encouraging regional and international trade. Nevertheless, Islamic finance also encourages investment flows, hence, intermediating huge cross border monetary flows (Aziz, 2013). According to Aziz (2013), recently, London and Hong Kong, both of the international financial centres have been expanding their network with the Middle East and Asian regions, two significant development centres in the worldwide economy. The expanded global dimension of the sukuk market,

specifically has encouraged the flows of funds across borders from regions with excess funds to regions with investment opportunities. Therefore, it facilitates economic growth and also advancement by stimulating greater trade and investment flows.

Most of the Asian countries including Malaysia have utilized the sukuk market to raise funds for developing the infrastructure in several fields, for example, healthcare, transportation, education and telecommunication that promote economic growth. Recent years, Malaysia launched a new initiative "green sukuk" initiative, which will transfer the sukuk to do some environment-friendly investments to achieve the goal of sustainable and inclusive growth, hence closing the gap for both infrastructure and green finance (Kwakwa, 2017).

1.2 Problem Statement

Over the last three decades, the accelerated growth of Islamic banking has the potential to become the alternative to conventional banking system in both Muslim and non-Muslim countries (El-Ghattis, 2011).

Figure 6:

Islamic Banks' and Conventional Banks' Total Assets
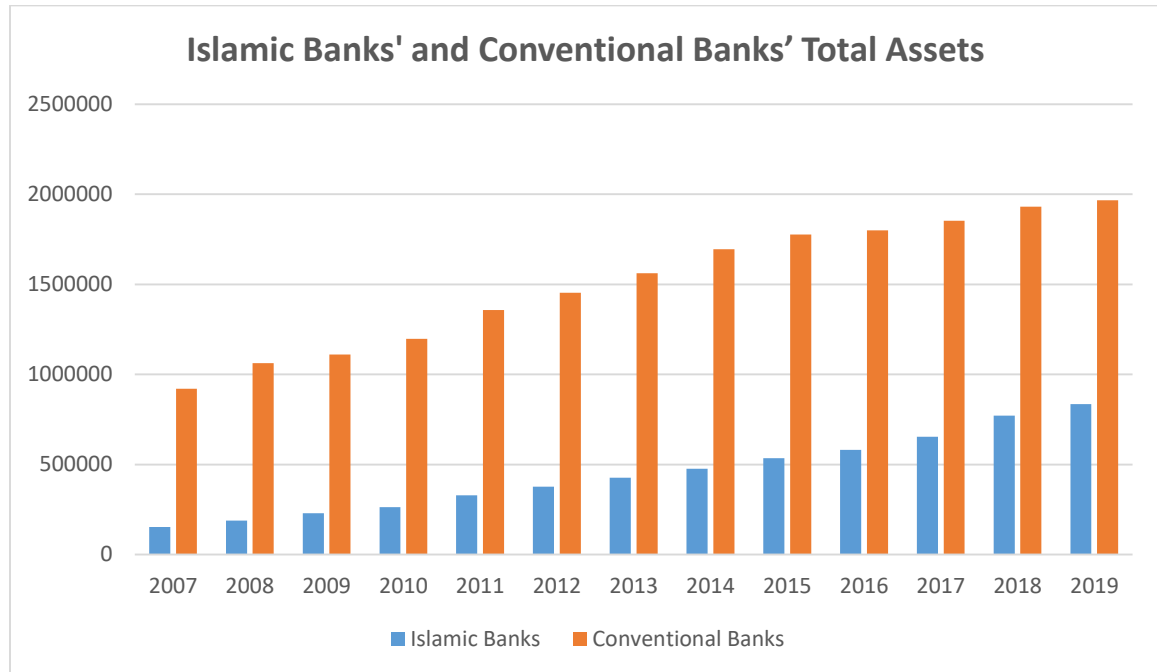
Note. Source from Monthly Highlights & Statistics - Bank Negara Malaysia.

To illustrate, according to Figure 6, the growth rate in total bank's assets of Islamic banks and conventional banks have grew significantly from year 2007 to 2019. The Islamic banks' total assets rise dramatically from 2007 to 2019 by 446% while conventional banks' total assets increased by 114%. It can conclude that the increment of total assets in Islamic banks has more substantially changes compared to conventional banks. Hence, there are many policy makers, investors, as well as the government being attracted by the robust growth rate and the resiliency of Islamic finance during the financial crisis. In addition, according to Abduh and Omar (2012), bankers have positive expectations towards the performance of Islamic banking and forecast it will control over 50% of savings in the Islamic countries within the next decade.

Besides that, many research papers concerning the financial system aim to investigate the differentiation of the impacts of conventional banking and Islamic banking on

economic performance. However, as the researchers study the topic about conventional banking and the period used to carry out the study of Islamic banking in Malaysia is too short to make a conclusion for the findings, most of the research were unable to illustrate the overall impact of IBF on the economy of Malaysia. Moreover, there are only a few empirical studies examining the impacts of Islamic banking activity development in Malaysia. For instance, most of the researchers focus on the studies about the banking products which are followed on the practices of Islamic principles. The research paper done by Ahmad, Palil, Abu Bakar and Dolah (2015) studied the knowledge and principles of Islamic banking towards the Islamic banking products among the Muslim entrepreneurs. Besides that, there are also some researchers examining the monetary and financial system for an interest-free economy which follow the Islamic principles in the past. One of the researches is carried out by Al-Jarhi (1980) as well. Apart from that, other studies about the awareness or acceptance of Islamic products among the consumers in Malaysia also have been done by many researchers. According to Ahmad Razimi, Romle and Jumahat (2017) and Latip, Yahya and Junaina (2017), the authors aimed to study about the consumers' acceptance towards Islamic banking products and services as well as the factors affecting the customers' acceptance both in the case of Malaysia.

Nevertheless, many conventional banks across the globe underperformed compared to Islamic banks during the financial crisis in 2008. The author demonstrated that due to Islamic banks are highly regulated operational according to the Shariah principles, therefore, they were largely insulated from the crisis. It is because the Shariah principles prohibited riba (interest), gharar (uncertainty) and maysir (gambling) which can greatly impact conventional banks' performance and prompted the crisis (Tabash & Dhankar, 2014a). In this respect, in order to study the contribution to Malaysia's economy, it is more critical to reflect on the IBF. Therefore, this study is to promote Islamic finance literacy to the public and reduce the gap in literature by determining whether the IBF and economic growth are cointegrated in the long run and short run in Malaysia.

1.3 Research Objectives

- To determine the cointegration relationship between GDP, GFCF, FDI, TRADE, INF and IBF.
- To identify the long-run relationship between GDP, GFCF, FDI, TRADE, INF and IBF.
- To assess the causality relationship between GDP, GFCF, FDI, TRADE, INF and IBF.
- To interpret the confidence interval between GDP, GFCF, FDI, TRADE, INF and IBF.

1.4 Research Questions

- Does GDP, GFCF, FDI, TRADE, INF have cointegration relationship with IBF?
- Does GDP, GFCF, FDI, TRADE, INF have a long-run relationship with IBF?
- To what extent does the causality relationship between GDP, GFCF, FDI, TRADE, INF and IBF?
- How does the GDP, GFCF, FDI, TRADE, INF responded to the shock in IBF?

1.5 Hypotheses of Research

- H_0: There is no cointegration relationship between GDP, GFCF, FDI, TRADE, INF and IBF.
- H_1: There is cointegration relationship between GDP, GFCF, FDI, TRADE, INF and IBF.

- H_0: There is no long run relationship between GDP, GFCF, FDI, TRADE, INF and IBF.

- H_1: There is long run relationship between GDP, GFCF, FDI, TRADE, INF and IBF.

- H_0: The GDP, GFCF, FDI, TRADE, INF does not granger causes IBF.
  ($\beta1 = \beta2 = \beta3 = \beta4 = \beta5 = 0$)
- H_1: The GDP, GFCF, FDI, TRADE, INF does granger causes IBF.
  ($\beta i \neq 0$, i= GDP, GFCF, FDI,TRADE, INF)

1.6 Significance of Study

To the policy makers

This study will help the policy makers by providing better research and evidence in policy making. From this study, policy makers may be able to get a clear insight on how the Islamic banking affects economic growth and vice versa. This research may encourage the policy makers to look into the findings of the research to exploit the strategies, plans and investments to get benefits from this growing financial sector. Besides, the policy makers may also be able to get the information and knowledge on the importance and relevance of Islamic Financial Industry. Hence, they can figure out the future direction as well as implement actions for the healthy growth of this industry. The policy makers may be responsible to give advice and develop strategies to the government for the good sake of economic development.

To the investors

This study lets consumers, as well as investors to have a greater awareness about Islamic banking. Islamic finance industry can be accessed by everyone regardless of

their origins or religion, and is affecting an economy, either in a positive or negative way. There are about a quarter of the population in the world representing Muslims. There are about 61.3% of Muslims in Malaysia. However, Islamic banking is not a well-known banking sector to all Malaysian if compared to conventional banks. Therefore, this research help to deliver better understanding to Muslim and also Non-Muslim consumers on demanding the Islamic-based financial products. Besides that, this study may also help to create consumers' confidence among investors to invest in Islamic banking after they understand more about the relationship between Islamic banking and economic growth and make a better upward trends in the future. Investors may also get proof on how the relationship between the variables leads to a better financial performance in the form of Islamic banking's insolvency of risk and stability.

To the government

This study provides the government a clearer picture and well understanding about the relationship that exists between the Islamic Banking and also the economic performance of the country. Therefore, the government may know whether the Islamic banking sector will contribute a positive relationship or negative relationship on the economic growth of the country. Hence, the government can develop plans or implement strategies whether to focus and invest more on Islamic Banking in order to influence the economic growth. Besides that, the government may also know the relationship between economic growth and also Islamic banking. Therefore, the government may implement policies to boost economic growth in order to enhance the performance of Islamic banking in Malaysia.

1.7 Conclusion

The purpose of this research is to investigate the short-run, long-run, causality relationship and confidence interval between GDP, GFCF, FDI, TRADE and INF with

IBF in Malaysia from 2010 Q1 to 2018 Q4. Besides that, the background of study, problem statements, research objectives, research questions, hypotheses of research, and the significance of study have been discussed in this chapter. Moreover, the following chapter will discuss the previous research and studies which were conducted by other researchers.

CHAPTER 2: REVIEW OF LITERATURE

2.0 Introduction

This chapter will discuss the empirical studies carried by the previous researchers on the short-run, long-run and causality relationship between the Islamic Banks' Financing (IBF) and macroeconomic variables such as Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF), Foreign Direct Investment (FDI), Trade (TRADE) and Inflation (INF). The second part of this chapter will focus on the theories and concepts that are developed earlier followed by the review of the theoretical framework, proposed theoretical model as well as hypothesis development.

2.1 Review of Literature Review

The literature review is a part that used several researches for further study, which examines the dynamic relationship between IBF and the indicators of economic growth. This part focuses on how the dependent variable and independent variables react with each other in the short run and long run. In this study, IBF is chosen to be the dependent variable and the economic indicators, which include GDP, GFCF, FDI, TRADE and INF are chosen to be the independent variables.

2.1.1 Islamic Banks' Financing (IBF)

According to Zin and Kadir (2011), Islamic Finance is a financing activity operated by following the rules of Islamic Law. It has features that are different from conventional banks. For Islamic Finance, all banking activities must not

involve any element of interest as it is interest free. According to Shariah, it emphasizes the profit and loss sharing and the elements of uncertainty and gambling are not allowable to be involved in Islamic Finance. There are many components of IBF. For instance, hire purchase (leasing), trust receipt, revolving credit, overdraft and others.

According to "Hire-Purchase (Leasing) in Islamic Finance" (n. d.), the hire purchase (leasing) is provided the option to the hirer as the owner of an item at the end of the tenure, with the conditions that have to be fulfil by the hirer in the agreement. They can rent the capital goods by requesting from the bank and it is charged from the delivery date taken by the lesser or when the lease is determined. Besides, trust receipt is used to finance purchase or import as a financing product, which is governed by the Murabahah principle. This principle refers to any acquisition cost and markup are disclosed to the buyer. The bank will let the customer as an agent to get the required asset in the Murabahah transactions ("RHB Islamic Bank Berhad Trust Receipt-i", 2015). Moreover, working capital requirements (overhead expenses) are financed by a facility, which is provided by a bank, known as the revolving credit. In addition, the Islamic overdraft is also known as the cash line, which is the account of the customer authorised up to its approval limit with the financing granted under the current account ("Affin Islamic", 2016).

Islamic finance plays an important role that contributes to economic growth due to its financing must be connected to physical assets and also the real economy. Normally, Islamic banks provide financial support to those productive firms that can increase output and create jobs due to the utilization of profit and loss arrangements (Alawode, 2015). Nevertheless, Islamic finance can promote an equitable distribution of wealth because the redistributive instruments such as mandatory aid giving (zakat), endowment (waqf) and charity (sadaqah) help to reduce poverty and develop a balanced economic growth (Aziz, 2013). Furthermore, redistribution of the wealth and opportunities also

included in Islamic Finance, which encourages economic growth. This method makes sure that all members of society could get equal opportunities in the utilization of resources (Zamir, Rostom & Fu, 2012).

Besides that, Islamic finance leads to economic growth by encouraging regional and international trade and investment flows (Aziz, 2013). This is because the expanded global dimension of the sukuk market facilitates the flows of funds across border from regions with excess funds to regions with investment opportunities. Malaysia, one of the Asian countries, has utilized the sukuk market to raise funds to develop the infrastructure in many fields such as healthcare, transportation, education and telecommunication that accelerates economic growth (Kwakwa, 2017). According to Kwakwa (2017), Malaysia has launched the "green sukuk" initiative recently in order to achieve sustainable goals and close the gap of both infrastructure and green finance by transferring the sukuk to do some environment-friendly investments.

2.1.2 Gross Domestic Products (GDP)

GDP is used as one of the variables to measure the income level of a country. According to Farahani and Sadr (2012), the authors study the case of Iran and Indonesia by investigating the correlation of short-run and the long-run between IBF and economic growth. The study used quarterly data from period 2000 Q1 to period 2010 Q4 and found that IBF and GDP has significant relationship in the long run and bidirectional relationship between variables. Moreover, they claimed that IBF acts as a vital role in improving the economy as the changes in IBF from past to current have positively contributed to the real sector of economy in Iran and Indonesia. Hence, the results showed the expansion of Islamic banking may boost the economic upsurge in the long run.

Furthermore, according to Abduh and Chowdhury (2012), the objective in this study is to examine the significance relationship between IBF and economic growth in Bangladesh in the long run by using quarterly data from period 2004 Q1 to 2011 Q2. The authors also found consistent results by claiming that IBF and GDP have a long run relationship and bidirectional causality. The study suggests the growth of Islamic banking has significant influence on the real sector of economy in Bangladesh and the positive evolution of Islamic banking help to support the economic growth hence, improve the income level of a country.

In the same vein, according to Tabash and Dhankar (2013b), the researchers determined the linkage between the IBF and economic growth in Qatar by using annual data from 1990 to 2008. According to the findings, the researchers also supported the view that IBF and GDP have a long run relationship and bi-directional relationship exists from IBF and GDP, and vice versa. The authors claimed that the economy in Qatar facilitates the expansion and improvement of Islamic banking which stimulate the real sector of economy in the long run. As a result, it helps to reduce poverty in a country, thus social equality achieved. Moreover, according to Gudarzi and Dastan (2013), the authors seek to analyze the significance impact of IBF on economic growth in Malaysia, Indonesia, Bahrain, UAE, Saudi Arabia, Egypt, Kuwait, Qatar and Yemen by using quarterly data from period 2001 Q1 to 2010 Q4. In the study, the authors found that IBF has significant relationship with GDP in these countries in the long run. Furthermore, the findings suggested there is a bidirectional causality exists between IBF and GDP. However, the authors argued that the bidirectional causality in the long run is more significant than the causality in the short term between IBF and GDP. Hence, there is a bidirectional causality between IBF and GDP which the cause-and-effect of IBF on GDP is greater than GDP on IBF.

On the other hand, according to Ibrahim (2012), the author aims to study the correlation between IBF and economic performance in Nigeria in the short run and long run. However, the author found that there was a contradictory statement which IBF and GDP are cointegrated in the long run but only unidirectional causality between IBF and GDP. In other words, IBF affects GDP but GDP does not affect IBF. The authors also concluded that the government in Nigeria issued sovereign Sukuk in order to finance the deficit budget in 2016 has greatly stimulated economic growth in Nigeria. The better the economic growth will attract investors from Gulf Countries and other Islamic markets in the world to contribute capital which enhance the economic performance. In addition, according to Abduh and Omar (2012), the authors analyzed the significance of IBF and GDP in Indonesia by using quarterly data from period 2003 Q1 to 2010 Q2. The authors demonstrated IBF and GDP has a long run relationship and supported the theory of supply-leading between variables. In other words, IBF has one-way causality to GDP. Moreover, the authors also claimed that the growth of Indonesian economy was contributed by domestic financing which was provided by Islamic banking. Therefore, the transmission of funds from surplus to deficit households has facilitated due to Islamic banking acts as an effective financial intermediaries.

2.1.3 Gross Fixed Capital Formation (GFCF)

GFCF, also known as investment, is defined as the producers' investment in fixed capital assets, minus the depreciation in the domestic economy during a certain accounting period. It includes the cost of the improvements on land, plants, machinery as well as the purchases of equipment. It is considered to be one of the proxies of economic growth used to determine the relationship between Islamic banking and economic growth (Tabash & Dhankar, 2014a). There were some researchers who conducted research to identify the linkage between IBF and GFCF in the past.

According to Tabash and Dhankar (2014a), the authors determined the relationship between IBF and GFCF in the United Arab Emirates (UAE) by applying time series data from 1990 to 2010 to carry out the study. This study shows that IBF and GFCF are cointegrated in the long run. For the granger causality test, the authors found a unidirectional causality from IBF and GFCF. In other words, it indicates that IBF will granger cause GFCF in a unique direction but not in the opposite direction. Besides that, the findings of this research is also supported by another research done by Tabash and Dhankar (2014b) where the authors investigated the relationship between IBF and GFCF in Qatar. The authors conducted the study with the yearly time series data collected from 1990 to 2008. From this research paper, the study found that IBF and GFCF have unidirectional causality and long-term cointegrating relationship, which means that the movement of both the variables will be the same in the long run.

Moreover, a study done by Abduh and Omar (2012) also conducted to examine the relationship between IBF and GFCF in the case of Indonesia. This research investigated the relationships between these two variables in the short-run and long run by collecting the quarterly data from 2003 Q1 until 2010 Q2. The findings show that IBF has a significant relationship with GFCF in the long run. However, the result of the Granger causality test proved that IBF and GFCF are not found to have a causality relationship with each other.

On the other hand, there are also several researches showing the results which are contradicted with the results above. According to Echchabi and Azouzi (2015), the researchers conducted a research on IBF and GFCF in the United Arab Emirates (UAE) with the data from year 2004 to year 2011 on a quarterly basis. The authors discovered that IBF and GFCF do not cointegrated in the short run and long run. Moreover, the granger causality test also proves that no granger causality relationship between the variables and hence, there is no causality relationship among them.

Furthermore, there was also another research to support the test about the cointegration and causal relationship between IBF and GFCF conducted by Wahab, Mufti, Murad and Arif-ul-Haq (2016). The study was carried out in Pakistan and Malaysia with the quarterly data for the year of 2006 to year 2014. The authors obtained the results showing that both IBF and GFCF do not have cointegration and significant association with each other in the case of Pakistan. Therefore, it means that IBF and GFCF do not have a causal link and will not affect each other in the economy. On the other hand, the study proved that in the case of Malaysia, IBF and GFCF have stable relationships in the long run while in the short-run, GFCF is insignificantly related to IBF.

2.1.4 Foreign Direct Investment (FDI)

The significance between FDI and IBF was examined by few researchers. FDI is used as a variable that is used to indicate economic growth. According to Tabash and Dhankar (2014a), the authors used annually data from the year 1990 to 2010 to determine the connection between IBF and FDI in the United Arab Emirates (UAE). The results claimed that IBF and FDI have a cointegration relationship and also proved that IBF contributes to the growth of investment of UAE in the long run. Besides that, the findings suggested that the IBF and FDI are existing with bidirectional causality relationship. In other words, IBF granger causes FDI and FDI granger causes IBF. The results proved that IBF moves together with the economic growth in the long run. In addition, the authors claimed that the findings proved that FDI strengthens Islamic finance and Islamic finance is an appropriate and charming surrounding for FDI.

Moreover, according to Tabash and Anagreh (2017), the authors did research to study the cointegration relationship, long run relationship and granger causality relationship between IBF and FDI in UAE. The research stated that IBF and FDI have stable cointegration relationships in the long run. Besides,

the granger causality test claimed that the IBF and FDI exist bi-directional causality. It means that IBF and FDI granger cause each other. The results also showed that the United Arab Emirates is having a sound banking system hence provides a good environment for FDI and the investors invest into the home country. The research claimed that the sector of Islamic finance would promote economic growth in terms of FDI.

On the other hand, Tabash and Dhankar (2014b) examined the cointegration and granger causality connections between Islamic banking as well as economic performance in Qatar by utilizing data that is on annually basis from 1990 to 2008. The study also supported the results of IBF and FDI consists of the stable and long run relationship. IBF and FDI are shown to have a cointegration relationship among them. That means in the long run, IBF will move together with economic development. However, the authors found contradicting results in the granger causality test which showed that FDI and IBF contain unidirectional granger causality which means IBF affects FDI but FDI does not affect IBF. The study claimed that it means the Islamic finance creates an ideal environment for FDI.

In addition, according to Tabash and Dhankar (2015), the researchers did a paper to determine the relationship of Islamic finance with economic growth. The data was collected from 1990 to 2010 on an annual basis in the Kingdom of Saudi Arabia (KSA) for the purpose of examining the connections between FDI and IBF. The Johansen cointegration test showed that the cointegration relationship exists between FDI and IBF. The study claimed that there is a continuing association among the variables. This indicates that IBF and economic development work together in terms of long duration. Furthermore, the findings showed that there is unidirectional causality relationship from IBF to FDI. The results indicate that Islamic finance creates an appropriate and attractive environment for absorbing FDI and then FDI enhances economic growth. This study also claimed that if the Islamic financial institution enhances

in the KSA will promote economic growth in the country. This will benefit and be important for the long term association of economics since it brings welfare to the economy and reduces the poverty of the society.

Furthermore, Lawal and Iman (2016) did a research in Nigeria. The research studied the relationship of Islamic finance and economy performance in that country. This study used the quarterly data from the year of 2012 to 2015. The trace test of Johansen test showed the results that FDI and IBF are cointegrated in long run. Besides, the authors found consistent results that IBF and FDI exist a long term and stable relationship under the research. However, unlike the journal above, the granger causality test under this study showed the results of IBF and FDI do not have a granger causality relationship. This means that IBF and FDI do not granger cause each other.

2.1.5 Trade (TRADE)

There are some studies done by the researchers to investigate the relationship between IBF and TRADE. TRADE is important to drive economic growth of a country. According to Nursyamsiah (2017), the author examined the relationship between IBF and also the macroeconomic variables in Indonesia by using the data from January 2015 to November 2017. The results concluded that IBF and TRADE have a long run relationship. For the granger causality test, unidirectional relationship exists from TRADE to IBF. This is because IBF may contribute productive activity to the real economy.

On the other hand, there are also several researches showing the results which are contradicted with the results above. According to Tajgardoon, Behname and Noormohamadi (2013), the researchers study Islamic banking and economic growth in short run and long run in Asia. The Asian countries involved are Bahrain, Iran, Malaysia, UAE, Iraq, Pakistan, Kuwait, Oman, Saudi Arabia,

Qatar, Turkey and Yemen. Quarterly data was used from the period of 1980 to 2009 for this research. The findings revealed that IBF and TRADE have no long run relationship. This is because based on Schwarz information criterion (SIC), the maximum lag in panel cointegration model is one. Hence, the researchers cannot apply the VAR model and they only can apply the short run granger causality test. In addition, the findings were found that there is unidirectional causality which is IBF granger causes TRADE.

Besides that, Wahab, Mufti, Murad and Arif-ul-Haq (2016) studied the cointegration and causality between IBF and also the development of economy in Pakistan and Malaysia by using quarterly data from 2006 to 2014. In the case of Pakistan, the empirical results showed that there is no significant association and co-integration between IBF and also TRADE. The reasons are due to the less participation in Sharia based modes of financing and investment. Sharia Based and Sharia Compliance are the two main modes of financing and investment. Sharia Based modes of financing can contribute more to real economic development if compared to Sharia Compliance. However, it is difficult for Islamic financial institutions to get involved because it is important to demonstrate the viability of the project before investing in it as the risk of loss is involved. Therefore, they prefer more in Sharia compliance modes of financing and this reason is attributed to the result. In the case of Malaysia, both short and long run relationships are significant in IBF and TRADE. There is unidirectional between IBF and TRADE for the granger causality test.

Furthermore, Echchabi and Azouzi (2015) studied the significant connection between Islamic banking development and economic growth in the United Arab Emirates (UAE). The authors used the quarterly data from 2004 Q1 to 2011 Q4. The results stated that IBF and TRADE do not have relationships in short run and long run. However, the granger causality test indicates that IBF does not cause-and-effect TRADE in the short run and vice versa. Overall, Islamic banking development and economic performance do not have short run

causality and cointegration in UAE. According to Miniaoui and Gohou (2011), the result was ambiguous because the number of financial institutions are high in UAE. The percentage of Islamic financial institutions in the global banking sector of UAE is relatively small, which is 20 percent (Rivzi, 2012). Moreover, the decline of 10% probability in UAE during the period 2011 also contributed to the results. In the same vein, Muhammad and Dauda (2018) investigated the linkage between Islamic finance development and economic growth in Nigeria. The authors used the quarterly data from the period 2013 to 2017 for this research. The results showed that IBF does not affect TRADE for the granger causality test which is similar with the results done by the Echchabi and Azouzi.

2.1.6 Inflation (INF)

The increasing rate of the general price level of goods and services in a country is known as the inflation rate. There are several types of research proving INF and IBF are affecting each other in different ways. According to Nursyamsiah (2017), the fluctuation of INF is significantly influencing IBF in Indonesia in the long run. The author collected the data from January 2005 to November 2017. It is found that INF has the bidirectional causality with IBF and this means that IBF granger causes the INF and vice versa. For impulse function, INF is responded negatively by the IBF and INF is affected by the diversity of IBF by using the variance decomposition.

Furthermore, Setyowati (2019) also showed a similar result as the previous journal, in which IBF and INF are cointegrated in long run in Indonesia. All the data used is starting from January 2004 to June 2018. The independent variables are having the short term shock which enable the formation of a stable relationship between IBF and INF in the long run since there is a negative and significant coefficient shown in VECM test. It also showed that IBF and INF have bidirectional causality relationships. The author mentioned that

almost 70% of IBF are having the effect of financing on purchasing items through the Murabahah schemes account. People can buy more goods and services if Islamic banks are relying on inflation. Islamic banks are also able to purchase a greater quantity of goods, become lower costs and attract more depositors during low inflation. A high inflation will therefore be driven by the higher demand of Islamic banks, and it proved that INF and IBF are affecting each other. IBF has a negative response toward the INF. The high inflation forces the Islamic banks lowering its financing. This is due to the high costs of financing in high inflation will cause lesser people to have the ability to purchase items (Setyowati, 2019).

In addition, Zahid and Basit (2018) did the study with the yearly data obtained from the period of 1985 to 2015 in Pakistan. In the long run, the authors found that INF is significantly reacted toward IBF in the cointegrating test. It indicated that the declining growth of IBF is caused by a higher inflation rate. This situation happens as the increasing price level of commodities causes a lower purchasing power among the consumers. Hence, the consumers tend to reduce the investment, savings and business activities that are promoted by Islamic banks based on the profit and loss basis. When the salaries are not adjusted for inflation, it causes the distribution of income to become unequal, especially between lenders and borrowers. This study also involved a negative sign and statistically significant in ECM, which proved that the adjustment is significantly influenced by INF to achieve the long run equilibrium. Furthermore, Bm and Uddin (2016) also concluded that INF and IBF are significantly related to each other in the long run since they are moving together in the same direction according to the cointegrating test. The researchers are using the data from 2006 to 2014 based on a quarterly basis. The ECM provides the result of the correct sign and the equilibrium in long run exists after the short run adjustment of INF towards the IBF. INF has a unidirectional relationship with IBF in the ARDL bounds testing approach.

However, there is another journal that provided a contradicting result. Sumarti, Hayati, Cahyani and Wahyudi (2017) found an insignificant relationship between IBF and INF by using 10 years quarterly data from 2003 to 2013 in Indonesia. This indicated that IBF and INF has no significant relationships in the long run. Moreover, INF has a unidirectional causality with IBF, which means that IBF affects INF, but INF does not affect IBF. There is an expectation that INF will be significantly affected by IBF in year 2003 to year 2028 for the forecasting model. This might cause IBF to have a significant impact on INF in Indonesia in the next 15 years from the year 2013.

2.2 Review of Methodology of Framework

2.2.1 Johansen Cointegration Test

Lawal and Iman (2016) did research in Nigeria with a purpose to examine the relationship of IBF and economic growth in that country. The research applied Johansen cointegration test to investigate the cointegrating relationship between IBF with FDI, TRADE and GDP. The authors applied the Trace test and Max-Eigen test and the results showed that the variables are cointegrated with IBF in the long run. Moreover, Tabash and Dhankar (2014a) also investigated the correlation between IBF and economic growth, such as GDP and GFCF in the case of the United Arab Emirates (UAE). The authors used the Johansen cointegration test to test whether the dependent and independent variables have a cointegrating relationship. The results of the test proved that IBF and economic growth are cointegrated with each other in the long run. In addition, there is also another research done by Tabash and Dhankar (2014b) to investigate the Islamic banking and macroeconomic variables which are GDP, GFCF and FDI in Qatar. The researchers used the Johansen cointegration test

in the study and found that all the variables are having a cointegrating relationship among each other.

2.2.2 Vector Error Correction Model (VECM)

According to Abduh and Omar (2012), the researchers analyzed the dynamic relationship of IBF and economic growth in Indonesia in short run and long run period. The research applied the approach of cointegration and error correction models (ECMs). The results showed that IBF and GDP are cointegrated in the long-run. In addition, Setyowati (2019) also investigated the relationship between IBF and the macroeconomic determinants in Indonesia and found out that IBF and the macroeconomic variables are cointegrated in the long run. Next, Zahid and Basit (2018) examined how the macroeconomic variables react towards the IBF. The authors determine the result by using the VECM to determine the linkage between the IBF with GDP and INF. The VECM result showed a negative sign and statistically significant and this indicated that the variables can obtain the long run equilibrium after the adjustment in the short run.

2.2.3 Granger Causality Test

According to Echchabi and Azouzi (2015), the authors determined the causality between IBF and macroeconomic variables by applying the granger causality test. The researchers found that IBF does not affect GDP, GFCF and TRADE and vice versa in the research. Besides that, according to Tabash and Dhankar (2015), the authors did a paper to test the granger causality between IBF with GDP, GFCF and FDI in order to examine the linkage of IBF and economic growth in the Kingdom of Saudi Arabia (KSA). The results showed that GDP, GFCF and FDI exist in a unidirectional relationship with IBF. Furthermore,

according to Nursyamsiah (2017), the author provided a study that involved the response of IBF toward the key economic variables in Indonesia. The author identifies the cause-and-effect relationship between the IBF with INF and TRADE. The result is different for each independent variable. IBF is having a bidirectional relationship with INF and there is unidirectional causality between IBF and TRADE. This showed that IBF and INF granger cause each other. However, for TRADE, IBF affects TRADE, but TRADE does not affect IBF.

2.3 Review of Theoretical Framework

2.3.1 Profit Maximization Theory

In a conventional framework, profit maximization theory is defined as price and output at the profit-maximizing level. The difference between total revenue and total costs is known as economic profit (Amin & Yusuf, 2003). According to Hassan (1992), profit maximization in secular economics tends to cause inequality socioeconomic because profit is considered an extra income on market arbitration. However, in Islamic system perspective, it becomes an appropriate financing process due to the prohibition of interest, profit and loss sharing framework which aim to achieve justice and socioeconomic objectives which can greatly reduce poverty in an economy (Zamil, 2014).

Under dynamic and uncertain conditions, profit maximization is to maximize the firm's profit-yielding between total revenue and total cost curves. When there is monopolistic competition and assume the same demand function, profit maximization leads Islamic framework to give lower commodity prices with higher output which benefits society compared to conventional framework. As a result, the lower economic cost will attract more firms to enter the industry and produce goods. Hence, the attraction of the lower economic cost and society

friendly environment would enhance the interest of the investors in the foreign country to invest in Islamic products. This is because the investor would see the benefits and the good features of the Islamic products that achieve socio economic objectives with lower cost. Hence, the Islamic bank products would attract FDI into the host country.

When there are more investments made into the Islamic bank products, the output would increase in a large amount. Hence, the market supply of the goods will increase and Islamic framework will become larger. The expansion of the Islamic framework would lead to a higher GDP. This is because GDP is used to measure an overall goods and services produced in a country. When the Islamic framework in a country continues to expand and enhance, the products and services would increase and hence, leading to higher GDP in the country. The significant growth rate of GDP will attract the investors to invest and therefore, enhancing the FDI of the host country.

Since the Islamic framework grows larger and larger, the increasing output and lower cost of production will therefore, push the market price lower than in the conventional framework (Amin & Yusuf, 2003). When the price of the output becomes lower and it indicates that lower inflation rate. As a negatively correlated indicator of economic growth, low inflation provides the meaning that higher economic growth. This is because low inflation rate cause the interest rate is low and hence the cost of borrowing is low or investments.

Next, according to Metwally (1992), instead of maximizing profit, the author argued that maximizing utility is suggested as the clear objective of Islamic in order to manage the operation of an Islamic bank. In other words, maximization utility is actually a function of maximization of profit and also enhances the welfare of the society. The ways for applying maximizing utility are different since the approach minus the tax, which is known as zakat that charged the firm in the profit function. However, the expenses that are spent on donation or

charity are considered as cost function. Hence, the authors stated that the Islamic firm will create a larger amount of output and with a higher price. The state of the monopolist in Islamic sector will manufacture a higher level of production compared to the profit maximizing for monopolists in the conventional sector. The charity or donation are considered as the welfare of society in the utility function (Hallaq, 1995).

2.4 Proposed Theoretical Model

Figure 2.4.1:

The framework for the short-run and long-run relationship between IBF and the independent variables in Malaysia.
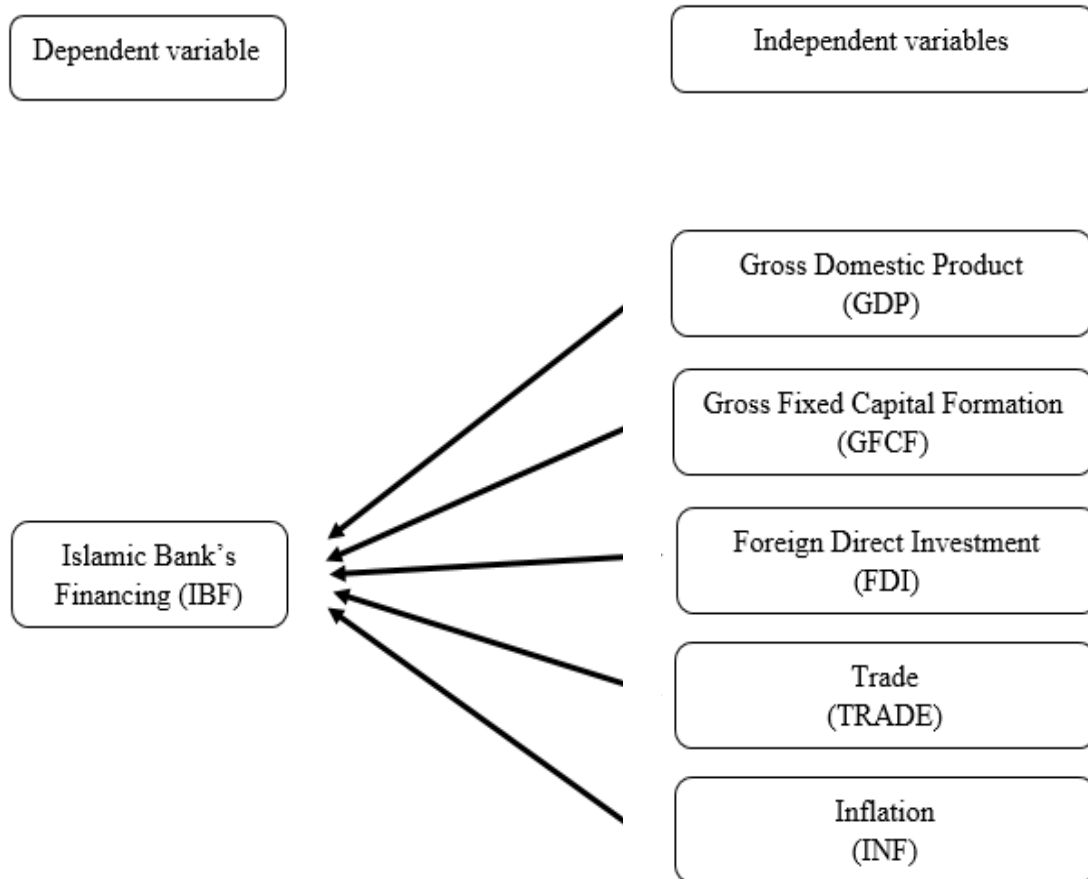
Figure 2.4.1 above shows the theoretical framework to identify the short-run and long-run relationship between IBF and the independent variables in the case of Malaysia. The dependent variable in this research is IBF. The independent variables in this research consist of GDP, GFCF, FDI, TRADE and INF.

2.5 Hypothesis Development

2.5.1 Johansen Cointegration Test

H_o: There is no cointegration relationship between IBF and GDP, GFCF, FDI, TRADE and INF.

H_1: There is a cointegration relationship between IBF and GDP, GFCF, FDI, TRADE and INF.

Conclusion: There is a cointegration relationship between IBF and GDP, GFCF, FDI, TRADE and INF.

2.5.2 VECM

H_o: There is no long run relationship between IBF and GDP, GFCF, FDI, TRADE and INF.

H_1: There is a long run relationship between IBF and GDP. GFCF, FDI, TRADE and INF.

Conclusion: There is a long run relationship between IBF and GDP. GFCF, FDI, TRADE and INF.

2.5.3 Granger Causality Test

H_o: IBF does not granger cause GDP, GFCF, FDI, TRADE and INF.

H_1: IBF granger cause GDP, GFCF, FDI, TRADE and INF.

Conclusion: IBF granger cause GDP, GFCF, FDI, TRADE and INF.

H$_o$: GDP, GFCF, FDI, TRADE and INF does not granger cause IBF.

H$_1$: GDP, GFCF, FDI, TRADE and INF granger cause IBF.

Conclusion: GDP, GFCF, FDI, TRADE and INF granger cause IBF.

2.6 Conclusion

This study used the sources that involved the secondary data as important tools to analyze the relevant information. The dynamic relationship between IBF with GDP, GFCF, FDI, TRADE and INF in the short run or long run are examined in this chapter. For the review of methodology of framework, the relationship between the variables are investigated by using Johansen Cointegration test, VECM and Granger Causality test. The model used is Profit Maximization theory to support this study. In addition, the relationship between IBF and macroeconomic determinants are shown in a picture form to enable the reader to see more clearly about their relationship. In the following part, the short run and long run relationship between the variables in the hypothesis development are further discussed.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This chapter will discuss the overall research methodology for this research paper. This study uses the sources that involve the secondary data and quantitative data as important tools to analyze the relevant information. The data collection of Islamic Banks' Financing (IBF), Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF), Foreign Direct Investment (FDI), Trade (TRADE) and Inflation (INF) will be examined in this chapter. In addition, for the review of methodology of framework, the relationship between the variables are investigated by using Johansen Cointegration test, Vector Error Correction Model (VECM), Granger Causality test and Impulse Response Function.

3.1 Research Background

3.1.1 Secondary Data

The secondary data is used to capture the information and it is collected from various types of resources. According to Rouse (2017), secondary data is the data that has been collected from studies, surveys and experiments and accessed by the researchers. The secondary data is used to increase the sample size of research and it is more efficient and faster to do the research since it is an existing resource. This is due to secondary data allowing researchers to focus on a particular area of interest instead of collecting the data from its sources.

Therefore, it is important to be clear and familiar with the whole data set as the data was not collected by the researchers (Crossman, 2019). On the other hand, there are some benefits of using secondary data. Secondary data can be easier to be found online since it has been studied and shared by other researchers. Furthermore, it is also better than the primary data as it has a higher level of expertise and professionalism. This is because it may be supported by the researchers, who specialize in a particular area and have experience in certain tasks. However, it also has some disadvantages, which includes that it has the difficulty in verifying the accuracy of the data since the data may be outdated over time.

3.1.2 Quantitative Data

Qualitative data and quantitative data are categorised in two groups in the form of data. According to Pickell (2019), qualitative data is theoretical and descriptive. It is based on the characteristics and traits of variables. Moreover, qualitative data helps to generate ideas or hypotheses for potential quantitative research. On the other hand, quantitative data is an approach of quantifying problem by using numerical data and several statistics, which provides a more suitable data for data analysis (Wyse, 2011). In this research, quantitative data is used due to time series data being collected in terms of numbers and statistics. The quarterly data from 2010 Q1 to 2018 Q4 are collected mainly from Bank Negara Malaysia and IMF's International Financial Statistics. Data of IBF, FDI and TRADE were collected from Bank Negara Malaysia while GDP, GFCF and INF were collected from IMF's International Financial Statistics.

3.2 Data Collection

3.2.1 Islamic Banks' Financing (IBF)

IBF is a financing activity that developed according to the Islamic Law (Shariah) and its sources are the Quran and the Sunnah (Zin & Kadir, 2011). It emphasizes the profit and loss sharing according to the Shariah. The Shariah prohibits the interest as well as the activities that are related to the risks, uncertainty and speculation. The harmful activities such as investment in businesses dealing in alcohol, drug and gambling are also prohibited in Islamic Finance. The measurement of IBF is shown as follows:

IBF= Overdraft + Hire purchase + Leasing + Block discounting + Bridging financing + Syndicated financing + Factoring + Personal financing + Housing financing + Term financing + Bill Financing + Trust receipts + Revolving credit + Foreign currency financing

The data are collected from Monthly Statistical Bulletin, Bank Negara Malaysia from the period 2010 Q1 to 2018 Q4.

3.2.2 Gross Domestic Product (GDP)

GDP is commonly used to measure an economy's output or production. It helps to indicate the economy's health by measuring the overall value of goods and services produced in a country in order to capture the true monetary value of the economy. However, the production is included in GDP if it is located within the country's boundaries, no matter the products are produced by citizens or

foreigners as well (Picardo, 2019). Overall, it includes public and private consumption, public and private investment, and exports minus imports. The measurement of GDP is shown as follow:

GDP= Consumption + Investment + Government Purchases + Net Exports

The data are collected from IMF's International Finance Statistics from the period 2010 Q1 to 2018 Q4.

3.2.3 Gross Fixed Capital Formation (GFCF)

According to Pettinger (2016), GFCF can be defined as net investment. It is categorized under the element of expenditure in calculating the country's GDP. To be more specific, GFCF is used to measure the net increase in fixed capital. Besides that, GFCF also includes the spending on plant and machinery purchases, land improvements, development of railways and so on. Disposal of fixed assets is excluded from GFCF as GFCF does not take into account the consumption of fixed capital. The measurement of GFCF as shown below:

GFCF = Investment - Disposal in fixed assets

The data are collected from IMF's International Finance Statistics from the period 2010 Q1 to 2018 Q4.

3.2.4 Foreign Direct Investment (FDI)

According to Chen (2019), FDI can be known as the investment made by the institution or people from a country into a different country. FDI occurs when investors in a country obtains foreign entity resources or undergo remote business. Investors make investments or invest into foreign countries as a form of FDI in order to enlarge their business in that particular country. There are numerous strategies for an investor in a household country to procure and obtain voting power in an outside organization for instance, merge and acquisition, operate another residential firm in another external country as well as secure foreign organization's voting stock. The measurement of FDI as shown below:

$$FDI = \text{Inflows of FDI - Outflows of FDI}$$

The data are collected from Monthly Statistical Bulletin, Bank Negara Malaysia from the period 2010 Q1 to 2018 Q4.

3.2.5 Trade (TRADE)

According to Amadeo (2019), TRADE can be defined as international trade. It represents the exchange of goods and services between one country and another country. Total trade includes the exports and imports. Exports can be explained as the goods and services produced by one country and are purchased by the residents or consumers in foreign country while imports are the goods and services made by foreign countries are purchased by the residents in the host country (Amadeo, 2019). The measurement of trade is shown as follow:

$$TRADE = \text{Exports + Imports}$$

The data are collected from Monthly Statistical Bulletin, Bank Negara Malaysia from the period 2010 Q1 to 2018 Q4.

3.2.6 Inflation (INF)

According to Pettinger (2013), a rising price of goods and services in an economy leads to inflation. Inflation happens when the percentages of the general price level increase over the years, which leads to the increasing costs of living. The general measure of the inflation rate is the Consumer Price Index (CPI), which calculates the annual percentage change in the general price level. CPI categorized many different categories of goods and services into a "market basket" and put them as a group. It helps to measure the weighted average prices of a basket of consumer goods and services over time as a purpose for identifying whether there is a period of inflation or deflation. The measurement of CPI is shown as follow:

CPI = Cost of market basket in a given year / Cost of market basket at base X 100

The data are collected from IMF's International Financial Statistics from the period 2010 Q1 to 2018 Q4.

3.3 Unit Root Test

According to Stephanie (2016), unit root test is applied to measure the stationary of the model across a specified period. The model must be stationary by taking the first difference to pursue the cointegration test. In this study, there are two types of unit root tests being implemented to identify the trend stationary of the time series data for IBF

and economic growth from the period 2010 Q1 to 2018 Q4. The unit root tests that are being used are Augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) test.

3.3.1 Augmented Dickey-Fuller (ADF) Test

According to Moffatt (2019), David Dickey and Wayne Fuller were the developers of ADF test ADF test in 1979. It is the simplest method, where it is used to discover the existence of unit root in a time series model. In other words, it means that the test is also used to identify the data for all the variables in the model are stationary or non-stationary at either first difference or second difference level. The statistics being used in the test are negative numbers. The probability of the null hypothesis to be rejected is higher when the numbers are more negative regarding the different levels of confidence. The ADF test model is as shown as follow:

where:

$$\Delta Y_t = \alpha + \beta_t + \gamma Y_{t-1} + \sum_{j=1}^{p} \left(\delta_j \Delta Y_{t-j} \right) + e_t$$

α = intercept constant

β_t = coefficient on a time trend

p = lag length of the first difference

γ = coefficient presents the process root

e_t = error term

The hypotheses and decision rule are shown as below:

H_0: There is a unit root (non-stationary)

H_1: There is no unit root (stationary)

Decision rule: Reject H_0 if p-value is lower than the significance level. Otherwise, do not reject H_0.

3.3.2 Phillips-Perron (PP) Test

According to Moffatt (2019), Peter C.B. Phillips and Pierre Perron were the developers of PP test in 1988. This is another unit root test used to determine the existence of unit root in a time series model. ADF and PP test are different in the point of view of the heteroscedasticity and serial correlation of the error term. PP test will ignore the serial correlation in the test regression but ADF test will use a parametric autoregression to estimate the structure of errors in the test regression (Phillips & Perron, 1988). The PP test model is as shown as below:

where:

$$\Delta Y_t = \alpha + \gamma Y_{t-1} + \delta t + e_t$$

α = intercept constant

γ = slope coefficient for Y_{t-1}

δ = slope coefficient for time trend variable

e_t = error term

The null hypothesis, alternative hypothesis and decision rule are shown as follow:

H_0: There is a unit root (non-stationary)

H_1: There is no unit root (stationary)

Decision rule: Reject H_0 if p-value is lower than the significance level. Otherwise, do not reject H_0.

3.4 Diagnostic Checking

3.4.1 Multicollinearity

Multicollinearity is a problem that occurs when the independent variables are highly correlated in the regression equation model (Katrusa & Strijov, 2017). Multicollinearity will lead to larger standard error and confidence level. The test statistic values will become smaller and there will be a wider correlation confidence interval. Therefore, it is hard to reject the null hypothesis and make the researchers hard to differentiate the individual significance effect on the dependent variable from each independent variable. The multicollinearity problem is detected by using Variance Inflation Factor (VIF), which in terms of how strong the correlation among the independent variables. If the value equals 1, it means that the multicollinearity problem doesn't exist in the model. The larger the value, the stronger the correlation between the variables. When the value is more than 4 or 5, the correlation between variables is considered moderate to high. When the value is more than 10, it is classified as serious multicollinearity in the model.

$$VIF = 1/(1- R^2)$$

The hypotheses and decision rule are as follow:

H_0: There is no multicollinearity problem.

H_1: There is multicollinearity problem.

Decision rule: Reject H_0 if the VIF value is larger than 10. Otherwise, do not reject H_0.

3.4.2 Heteroscedasticity

Heteroscedasticity is a problem when the variance of the error term is not constant (Gujarati & Porter, 2009). Heteroscedasticity will lead to inefficient estimators because t-statistic and F-statistic value are biased due to the invalid variances. The hypothesis testing is no longer valid. The common tests used to detect heteroscedasticity are White test and Breusch-Pagan-Godfrey test. Park test is the uncommon test to detect heteroscedasticity. According to Catani and Ahlgren (2017), the heteroscedasticity problem in time-series data is detected by using the autoregressive conditional heteroscedasticity (ARCH) test as the common test. The ARCH test is used to analyze whether the variance in the model is uniform or not uniform. The concept of ARCH test was developed by the economist, who named Robert F. Engle (Kenton, 2019).

Let the auxiliary regression model:
The hypothesis can be tested by using:
$T \cdot R^2 \rightarrow \chi^2(p)$

The hypotheses and decision rule are as follow:
H_0: There is no heteroscedasticity problem in the model.
H_1: There is heteroscedasticity problem in the model.
Decision rule: Reject H_0 if the p-value is lower than the significance level. Otherwise, do not reject H_0.

3.4.3 Autocorrelation

Autocorrelation problem exists when the error term is correlated with each other from one period to another period (Gujarati & Porter, 2009). It can be categorized as pure serial correlation and impure serial correlation. Autocorrelation will lead to inefficient estimators because t-statistic will be larger or smaller due to the variance of the estimators are overestimated or underestimated, hence, the hypothesis testing is not valid. The common test used to detect autocorrelation is Durbin's h test and Breusch-Godfrey test. Breusch- Godfrey test was developed by Breush and Godfrey in the year 1978. This test is identifying the increasing errors that occur between the independent variables in the model. It assumes that the cause of errors is most probably come from the linear function of those variables (Stephanie, 2016).

1.   Let the regression model:

$$y = \beta_0 + \beta_1 x_1 + \cdots + \beta_k x_k + \varepsilon$$

2.   Using these sample residuals e1, e2, …, en, run an OLS regression for the model

$$e_i = \alpha_0 + \alpha_1 x_{i1} + \cdots + \alpha_k x_{ik} + \rho_1 e_{i-1} + \cdots + \rho_p e_{i-p} + \delta_i$$

3.   Now test the null hypothesis

$$\rho_1 = \rho_2 = \cdots = \rho_p = 0$$

4. Based on this null hypothesis, if the sample size is sufficiently large, then

LM = nR2 $\sim \chi 2(p)$

LM (Lagrange multiplier) statistic = nR^2

where:

n = number of sample size

R^2 = coefficient of determination

k = number of explanatory variables

The hypotheses and decision rule are as follow:

H_0: There is no autocorrelation problem.

H_1: There is autocorrelation problem.

Decision Rule: Reject H_0 if the p-value is lower than the significance level. Otherwise, do not reject H_0.

3.4.4 Normality Test

Normality test is used to examine the normality distribution of the error terms (Gujarati, 2003). Jarque-Bera (JB) test and GMM approach are the procedures to identify the normality distribution of the error term. The assumption of normality plays an important role in constructing the reference interval for the variables. An accurate and reliable result about the reality is impossible to be made if the normality assumption did not take seriously. However, the normality assumption is not needed if the sample size is larger than 200. This is due to the distribution of disturbance term will approximate normality according to the Central Limit Theorem ("Normality", 2013). According to Raissi (2017), the common test used is the JB test. Shapiro and Wilk (1965) developed the JB test for the sample sizes greater than 20. The error is not normally distributed when the JB value is large.

$$JB = n \ [(\sqrt{b1})2 \ / \ 6 + (b2 - 3)2 \ / \ 24]$$

where:

 n = number of sample size

$\sqrt{b1}$ = the sample skewness coefficient

b2 = the kurtosis coefficient

The hypotheses and decision rule are as follow:

H₀: The error term is normally distributed.

H₁: The error term is not normally distributed.

Decision rule: Reject H₀ if the JB test statistic is greater than the critical value. Otherwise, do not reject H₀.

3.5 Data Analysis

3.5.1 Johansen Cointegration Test

According to Yoon, Min & Jei (2019), Johansen had developed the Johansen cointegration test in 1988. Number of cointegrated variables in the model is identified by using this test. This test can be called as likelihood-ratio tests. Maximum eigenvalue test and trace test are under the Johansen cointegration test. The importance of the test is to examine the cointegration relationship between the variables in the model (Gomez-Biscarri and Hualde, 2015). According to Dwyer (2015), the test statistics for both maximum eigenvalue test and trace test can be expressed as:

$LR(r0, r0 + 1) = -T \ln (1 - \lambda r0+1)$ …….......... Maximum eigenvalue test

$LR(r0, n) = -T Xni=r0+1 \ln (1 - \lambda i)$ ………….. Trace test

 r = number of cointegration vectors under the null hypothesis

T = number of sample size

λ = eigenvalue

The hypotheses and decision rule are as follow:

H₀: There is no cointegration relationship between Xt and Yt.

H₁: There is cointegration relationship between Xt and Yt.

Decision rule: Reject H₀ if the trace statistic or max-eigenvalue statistic is larger than the critical value. Otherwise, do not reject H₀.

3.5.2 Vector Error Correction Model (VECM)

According to Zou (2018), trace error correction model was developed by Engle and Granger by combining cointegration and error correction models. It suggested that when there is a cointegration relationship between variables, VECM can be further derived to determine whether there is a short run and long run relationship. On the other hand, the modification of VECM is needed in order to allow variables stationary among the series if the time series are not stationary. The VECM is used when the variables are stationary in their differences. Besides, according to Nursyamsiah (2017), usually time series data tends to have stationarity at the first difference level. Moreover, VECM can indicate the changes for short-term behavior of a variable over the long term behaviour due to the permanent change. The VECM model specifications can be expressed as:

$$\Delta y_t = \mu_{0x} + \mu_{1x}t + \Pi_x y_{t-1} + \sum_{i=1}^{k-1} \Gamma_{ix}\Delta y_{t-1} + \varepsilon_t$$

The hypotheses and decision rule are shown as follow:

H₀: There is no long run relationship between Xt and Yt.

H₁: There is a long run relationship between Xt and Yt.

Decision rule: Reject H₀ if the p-value is smaller than significance level Otherwise, do not reject H₀.

3.5.3 Granger Causality Test

Granger causality test is applied to examine the cause-and effect relationship between two variables whether it is unidirectional, bi-directional or no causality in the model within a certain time period (Stephanie, 2016). The direction of the granger causality test can be identified depends on the VECM. The next step is to check whether there is Granger causality between the variables once the relationship is established. According to Kuzu and Onder (2014), the formula can be expressed as:

$$y(t) = \sum_{i=1}^{\infty} a_i y(t-i) + \sum_{j=1}^{\infty} B_j x(t-j) + c_2 + V_2(t)$$

$$x(t) = \sum_{i=1}^{\infty} a_i x(t-i) + \sum_{j=1}^{\infty} B_j y(t-j) + c_2 + u_2(t)$$

The hypotheses are shown as follow:

H_0: Independent variable does not granger cause the dependent variable.

H_1: Independent variable does granger cause the dependent variable.

Decision rule: Reject H_0 if the F statistic is larger than the critical value or the p-value is smaller than the significance level. Otherwise, do not reject H_0.

Figure 3.1:

Direction of Granger cause from the independent variables which are GDP, GFCF, FDI, TRADE and INF to IBF.
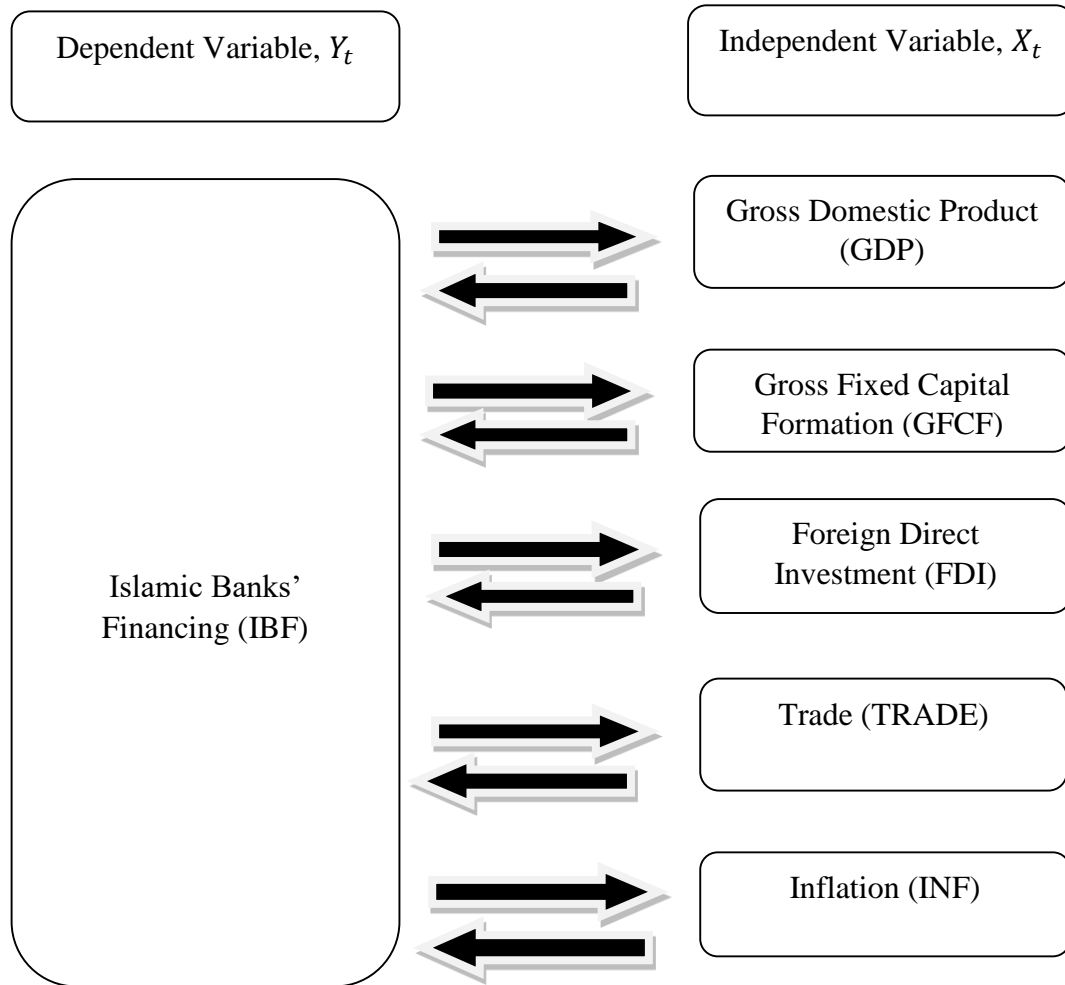
3.5.4 Impulse Response Function

There is an effect of shock that showed on the adjustment path of the variables by the IRFs. It can be either in the form of a graph or table to present its result. After investigating the VAR and VECM test, the impulse response function can be produced ("Impulse responses and variance decompositions", n. d.). Impulse response function analysis that was introduced in the vector autoregression was firstly developed by Sims (1980). Impulse response function is an illustrative technique that shows the response of every factor in various conditions of the system. This may allow the system to exhibit unmistakable marking of movement. In other words, Impulse response functions are valuable for examining the connections between variables in a vector autoregressive model. This capture the response of the system was shocked by the variables.

3.6 Conclusion

In conclusion, Chapter 3 discussed the data collection of the variables which are GDP, GFCF, TRADE, FDI and INF that have been selected in this research. Besides, secondary data and quantitative data were used and discussed in this research. The data is collected on a quarterly basis which started from 2010 Q1 to 2018 Q4. The ADF test and PP test approach are utilized in the unit root test. Both of the tests are used to detect the presence of unit root in a time series model. Other than that, the characteristics of four types of diagnostic checking tests have been studied. The tests that have been discussed are multicollinearity, heteroscedasticity, autocorrelation and normality test. Diagnostic checking is a test that helps researchers to identify and detect whether the regression equation model consists of problems like multicollinearity, heteroscedasticity and etc. Lastly, this chapter discussed Johansen Cointegration test, VECM, Granger Causality and Impulse Response Function in the data analysis. The two tests used in the Johansen cointegration test are Maximum eigenvalue test and trace. The VECM is used when the variables are stationary in their differences. Moreover,

the granger causality test is applied to test whether there is unidirectional, bidirectional or no causality relationship between the variables in the model in this study. Last but not least, the impulse response function enables to show how sensitive and how the independent variables react in a shock or changes of the dependent variable.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

This chapter will discuss and evaluate the short run, long run and causality relationship between Islamic Banks' Financing (IBF) and the macroeconomic variables, which are Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF), Foreign Direct Investment (FDI), Trade (TRADE) and Inflation (INF) with evidence from Malaysia from the period 2010 Q1 to 2018 Q4. In this chapter, the unit root tests which are Augmented Dickey-Fuller (ADF) test and Philips-Perron (PP) test are used to make sure the variables are stationary. Besides that, diagnostic checking will be presented in this chapter. In addition, the results of Vector Error Correction Model (VECM), Johansen Cointegration test, Granger causality test and Impulse Response Function will be discussed in this chapter.

4.1 Unit Root Test

4.1.1 Augmented Dickey- Fuller (ADF) Test

According to Moffatt (2019), ADF test was developed in 1979 by David Dickey and Wayne Fuller. This test is applied to investigate whether the unit root is present in the time series model. Besides that, the test is also used to determine whether the data for the variables in the model are stationary or non-stationary at the first or second difference level.

Table 4.1.1:

Result of ADF test

	At Level			First Difference	
Dependent variable:	**Intercept**	**Trend and intercept**	**and**	**Intercept**	**Trend and intercept**
IBF	1.0000	0.9223		0.0002	0.0001
Independent variables:					
GDP	0.9838	0.0000		0.0001	0.0000
GFCF	0.4027	0.0723		0.0000	0.0000
FDI	0.0000	0.0001		0.0000	0.0000
TRADE	0.9592	0.6277		0.0000	0.0000
CPI	0.8762	0.2283		0.0000	0.0002

According to Table 4.1.1, the p-values of the dependent and independent variables are lower than the significance level of 10% at the first difference level. This indicates that the null hypothesis should be rejected. Hence, there is sufficient evidence to conclude that there is no unit root for all the variables or in other words, all the variables are stationary in the first difference level.

4.1.2 Phillips-Perron (PP) Test

According to Moffatt (2019), PP test was developed in 1988 by Phillips and Perron to examine the existence of unit root in a time series model. This test ignores the serial correlation in the test regression but ADF test uses a parametric autoregression to estimate the structure of errors in the test regression (Phillips & Perron, 1988).

Table 4.1.2:

Result of PP Test

	At Level		First Difference	
Dependent variable:	**Intercept**	**Trend and intercept**	**Intercept**	**Trend and intercept**
IBF	1.0000	0.9328	0.0002	0.0001
Independent variables:				
GDP	0.9901	0.0010	0.0000	0.0000
GFCF	0.1711	0.0698	0.0000	0.0000
FDI	0.0000	0.0001	0.0000	0.0000
TRADE	0.9995	0.6348	0.0000	0.0000
CPI	0.8745	0.2010	0.0000	0.0001

According to Table 4.1.2, the p-values of all variables are lower than the significance level of 10% at the first difference level. This indicates that the null hypothesis will be rejected. Hence, there is sufficient evidence to conclude that there is no unit root for the dependent and independent variables or in other words, all the variables are stationary at the first difference level.

4.2 Diagnostic Checking

4.2.1 Multicollinearity

Multicollinearity is a problem when the the independent variables are strongly correlated among themselves in the regression equation model (Katrusa & Strijov, 2017). Multicollinearity will lead to larger standard error and confidence level. The test statistic values will become smaller and there will be a wider correlation confidence interval. Therefore, it is hard to make a decision in rejecting the null hypothesis and makes the researchers difficult to differentiate the individual significance effect on the dependent variable by each of the independent variables.

Table 4.2.1:

Result of Variance Inflation Factors - Multicollinearity

Dependent Variable: IBF	Centered VIF	Result
Independent Variables:		
GDP	12.05542 > 10	Reject
GFCF	11.08887 > 10	Reject
FDI	1.353727< 10	Do not reject
TRADE	10.44587 > 10	Reject
CPI	41.91859 > 10	Reject

According to Table 4.2.1, the result showed the VIF values for GDP, GFCF, FDI, TRADE and CPI. The null hypothesis is rejected for GDP, GFCF, TRADE

and CPI since their centered VIF are greater than 10. So, there is sufficient evidence to conclude that there is a multicollinearity problem in the model.

4.2.2 Heteroscedasticity

Heteroscedasticity is a problem when the variance of the error term is not constant (Gujarati & Porter, 2009). Heteroscedasticity will lead to inefficient estimators because t-statistic and F-statistic value are biased due to the invalid variances. The hypothesis testing is no longer valid.

Table 4.2.2:

Result of Autoregressive Conditional Heteroskedasticity (ARCH) - Heteroscedasticity

	P-value	Result
Heteroscedasticity	$0.0204 < 0.10$	Reject

According to Table 4.2.2, the result explained that this model has the heteroscedasticity problem. This is because the null hypothesis is being rejected in the step of decision making since the p-value is smaller than the significant level (10%).

4.2.3 Autocorrelation

Autocorrelation is when the error term is correlated with each other of one period to another period (Gujarati & Porter, 2009). It can be categorized as pure serial correlation and impure serial correlation. Autocorrelation will lead to inefficient estimators because t-statistic will be larger or smaller due to the variance of the estimators are overestimated or underestimated. The hypothesis testing is no longer valid.

Table 4.2.3:

Result of Breusch-Godfrey Serial Correlation LM Test – Autocorrelation

	P-value	Result
Autocorrelation	$0.0005 < 0.10$	Reject

According to Table 4.2.3, the p-value is smaller than the significant level (10%), hence, it is resulting with a rejecting null hypothesis. As a result, this can be sufficient evidence to prove that there is an autocorrelation problem in the model.

Table 4.2.3.1:

Solution for Heteroscedasticity and Autocorrelation Problem (Newey-West Standard Error (HAC)

Variables	Coefficient		Standard Error		T-statistics	
	OLS	HAC	OLS	HAC	OLS	HAC
GDP	1.588890	1.588890	0.530838	0.394589	2.993174	4.026699
GFCF	0.431143	0.431143	0.800230	0.890689	0.538774	0.484055
FDI	-0.503621	-0.503621	1.012885	0.808805	-0.497215	-0.622672
TRADE	0.005880	0.005880	0.201637	0.286396	0.029164	0.020533
CPI	9632.461	9632.461	3023.645	3722.653	3.185712	2.587526

According to Gujarati (2003), in order to solve the heteroscedasticity and autocorrelation problems, the Newey-West (HAC) method can be used. This method is also known as heteroscedasticity and autocorrelation-consistent standard errors. It is suitable to be used in time series data and the model with a large sample size. According to Table 4.2.3.1, the result showed the coefficient of variables for OLS and HAC remained the same. However, the HAC standard error has changed. This will therefore decrease the t-statistics and F-statistics of the variables in HAC. It proved that OLS has underestimated the true standard errors of variables. In conclusion, HAC has solved the heteroscedasticity and autocorrelation problems by correcting the standard errors of variables in OLS.

4.2.4 Normality

Normality test is used to examine the normality distribution of the error terms (Gujarati, 2003). The assumption of normality is an important part in constructing the reference interval for the variables. An accurate and reliable result about the reality is impossible to be made if the normality assumption did not take seriously.

Table 4.2.4:

Result of Jaquer-Bera (JB) Test – Normality

	P-value	Result
Normality Test	0.513405 > 0.10	Do not reject

According to Table 4.2.4, the error term is normally distributed in the model as the null hypothesis is failed to be rejected. Therefore, there is sufficient evidence to conclude that the error term is normally distributed in the model.

4.3 Data Analysis

4.3.1 Johansen Cointegration Test

According to Yoon, Min and Jei (2019), Johansen had developed the Johansen cointegration test in 1988. Number of cointegration vectors among the variables in the model can be identified by using this test.

Table 4.3.1:

Result for Johansen Cointegration Test

	Trace Statistics	Critical Values 10%	Max-Eigenvalue	Critical Values 10%	Result
GDP					
H_0: r =0	49.06154*	13.42878	42.07682*	12.29652	Reject
H_0: r ≤1	6.984728*	2.705545	6.984728*	2.705545	
GFCF					
H_0: r =0	10.35519	13.42878	8.821607	12.29652	Do not
H_0: r ≤1	1.533586	2.705545	1.533586	2.705545	reject
FDI					
H_0: r =0	27.02264*	13.42878	22.18740*	12.29652	Reject
H_0: r ≤1	4.835239*	2.705545	4.835239*	2.705545	
TRADE					
H_0: r =0	15.43331*	13.42878	9.887529	12.29652	Reject
H_0: r ≤1	5.545783*	2.705545	5.545783*	2.705545	
INF					
H_0: r =0	12.09458	13.42878	9.243524	12.29652	Reject
H_0: r ≤1	2.851056*	2.705545	2.851056*	2.705545	

* denotes rejection of the hypothesis at the 0.1 level

Table 4.3.1 shows that the trace statistics (6.984728) and max-eigenvalue statistics (6.984728) are larger than the critical value at 90% confidence level for GDP. Hence, IBF and GDP have a cointegration relationship between each other. However, for GFCF, the trace statistics and max-eigenvalue statistics (1.533586) are smaller than the critical value at 90% confidence level, so, rejecting the null hypothesis may not be allowed. Therefore, there may be no or at most one cointegrating vector exists in the variables. Besides that, the trace statistics (4.835239) and max-eigenvalue statistics (4.835239) are greater than

the critical value at 90% confidence level for FDI. It can conclude that IBF and FDI have a cointegration relationship. Similarity, for TRADE, both of the trace and max-eigenvalue statistics (5.545783) are greater than the critical value at 90% confidence level. The results confirm that IBF and TRADE have a cointegrating relationship with each other. Last but not least, for INF, the trace statistics (2.851056) and eigenvalue statistics (2.851056) are greater than the critical value at 90% confidence level. Hence, rejecting the null hypothesis means IBF and INF have a cointegration relationship too. Overall, it can conclude that IBF has a cointegration relationship with GDP, FDI, TRADE and INF but not GFCF. VECM test can be further conducted with the existence of cointegration relationships.

4.3.2 Vector Error Correction Model (VECM)

According to Zou (2018), VECM is used when the variables are stationary in their differences. VECM is further conducted for the purpose of examining the long run and short run relationship of the cointegration variables.

Table 4.3.2:

VECM estimations results

Variables	P – Value	Result
GDP		
$H_0: r = 0$	0.0000	Reject
$H_0: r \leq 1$		
FDI		
$H_0: r = 0$	0.4266	Do not reject
$H_0: r \leq 1$		

TRADE

H_0: r = 0	0.0195	Reject
H_0: r ≤ 1		

INF

H_0: r = 0	0.1880	Do not reject
H_0: r ≤ 1		

Table 4.3.2 shows that GDP and IBF are cointegrated in the long run as the p-value is lower than 10% significance level hence reject Ho. Meanwhile, the p-value of FDI is 0.4266 and INF is 0.1880 which exceeds the 10% significance level hence, Ho should not be rejected. It indicates FDI and INF do not have a long run relationship with IBF. Besides, the results also reveal that TRADE and IBF have a long run relationship as the p-value is lower than 10% significance level. In short, long run relationship exists between IBF with GDP and TRADE but not with FDI and INF.

4.3.3 Granger Causality Test

According to Stephanie (2016), Granger causality test is used to examine the cause-and effect relationship between two variables whether it is unidirectional, bi-directional or no causality in the model.

Table 4.3.3:

Result of Granger Causality between the variables

Null Hypothesis:	F-Statistic	Prob.	Result
GDP does not Granger Cause IBF	2.45946	0.1031	Do not reject
IBF does not Granger Cause GDP	24.6494	6.E-07	Reject
GFCF does not Granger Cause IBF	0.09853	0.9065	Do not reject
IBF does not Granger Cause GFCF	0.73131	0.4899	Do not reject
FDI does not Granger Cause IBF	2.68189	0.0854	Reject
IBF does not Granger Cause FDI	0.74765	0.4824	Do not reject
TRADE does not Granger Cause IBF	2.20891	0.1280	Do not reject
IBF does not Granger Cause TRADE	2.57691	0.0933	Reject
CPI does not Granger Cause IBF	1.40738	0.2610	Do not reject
IBF does not Granger Cause CPI	2.08781	0.1422	Do not reject

According to Table 4.3.3, it shows the causal relationship of each dependent variable and independent variable.

GDP and IBF: According to the result, the p-value (0.000007) is lower than the significance level of 10%. Therefore, it can conclude that GDP and IBF have a causal relationship and it is unidirectional and from IBF to GDP.

GFCF and IBF: GFCF and IBF does not granger cause each other. Both of the p-values (0.9065) and (0.4899) are greater than the significance level of 10% and therefore, rejecting the null hypothesis is not allowed. It can conclude that there is no causality relationship between these two variables.

FDI and IBF: According to the findings, the p-value (0.0854) is not greater than the significance level of 10%. Therefore, it can conclude that FDI and IBF have a unidirectional relationship. The direction is from FDI to IBF but not from IBF to FDI.

TRADE and IBF: There is a cause-effect relationship between TRADE and IBF and from IBF to TRADE. The p-value (0.0933) does not exceed the significance level of 10%. Therefore, IBF granger causes TRADE but TRADE does not granger cause IBF.

INF and IBF: According to the findings, INF and IBF do not granger cause each other. Both of the p-value (0.2610) and (0.1422) are greater than the significance level of 10% and therefore, rejecting the null hypothesis is not allowed. It can conclude that there is no causality relationship between these two variables.

4.3.4 Impulse Response Function

Impulse response function enables to reveal how sensitive are the independent variables in a shock or changes of the dependent variable. It is useful for examining the connections of the independent variables and dependent variable in a vector autoregressive model.

Figure 4.3.4:

Results of Impulse Response Function

Response to Cholesky One S.D. (d.f. adjusted) Innovations

(a) Response of GDP to IBF

(b) Response of GFCF to IBF

(c) Response of FDI to IBF

(d) Response of TRADE to IBF

(e) Response of CPI to IBF
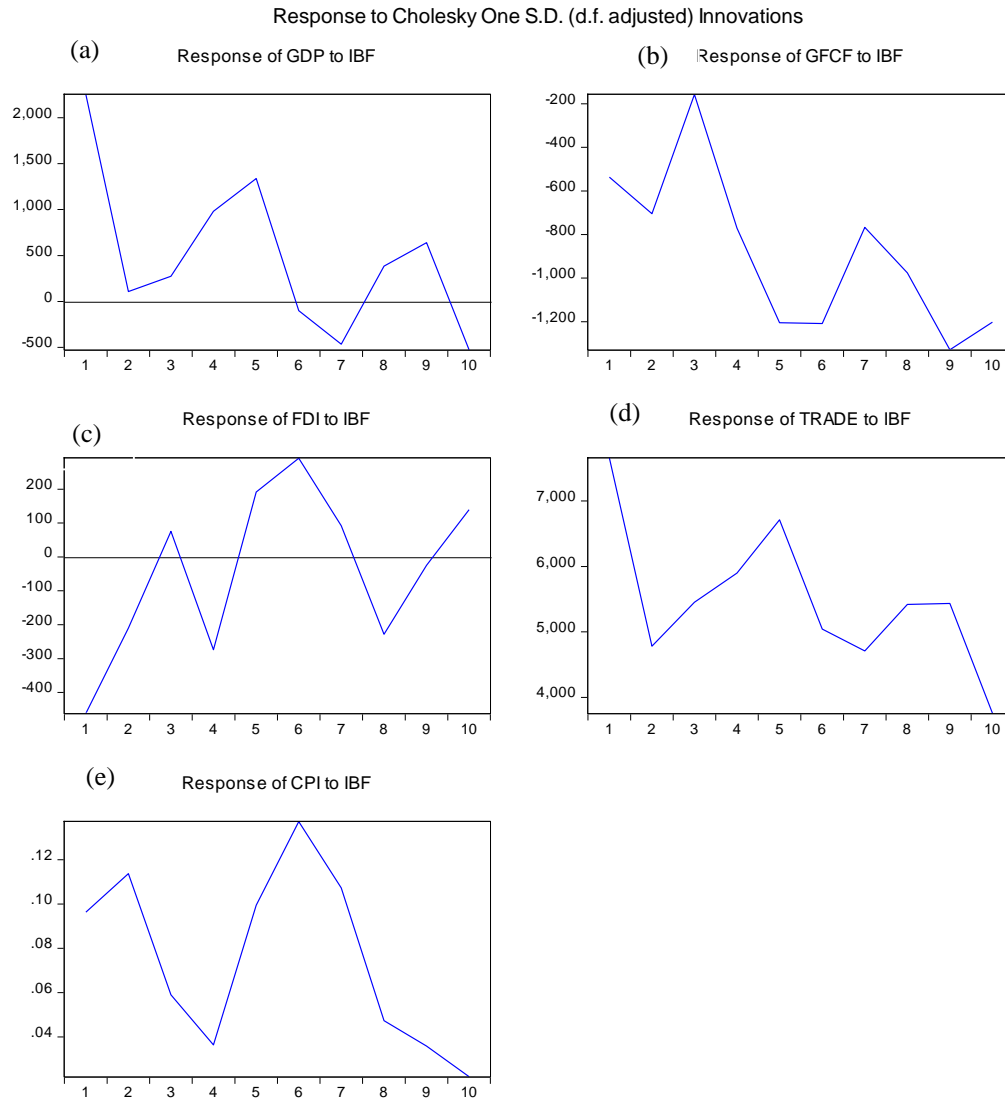
Figure 4.3.4(a) shows the impulse response of GDP changes that caused by the IBF shocks. According to the figure, it shows that the shocks of IBF have a large impact on the response of GDP. The GDP reacted positively after the effects of the shocks of IBF. However, GDP decreased rapidly after the positive shocks of IBF. It remains fluctuated and reached a lowest point in the period of 7th. Then, it increased slightly and declined straight after the 9th period.

According to the figure 4.3.4(b), it shows that the negative shock has a large effect after the examination of the impact of IBF crash. The GFCF reacted negatively to the IBF shocks. The IBF shocks caused the GFCF fluctuated in a large movement. In the 3rd period, the GFCF reached the highest point. Then, it declined rapidly and largely after the peak point and in the 9th period, the GFCF declined to the lowest point.

Figure 4.3.4(c) is the impulse response function diagram of the changes of FDI responds to the IBF shocks. Same goes to the GFCF, FDI also reacted negatively to the IBF shocks. The trend and movement of the FDI changes remain fluctuated over the period. In the first period, the FDI increased largely until 3rd period, then decreased to a lowest point the 4th period. After that, it reached a highest point in the period of 6th. However, it declined and fluctuated as the period goes.

Figure 4.3.4(d) shows the impulse function diagram of the TRADE changes to IBF shocks. It shown the IBF shocks have brought a large effect to the TRADE changes. According to the graph, TRADE reacted positively and largely to the IBF shocks. After the positive shock, the TRADE declined rapidly from the first period to the second period. Then, it rises steadily until reaching the highest point in the 5th period and drops slowly until 7th period. From the 8th period to 9th period, the TRADE remains stable and constant.

According to the figure 4.3.4(e), it shows that the positive shock has large effect after the investigation of the effect of IBF shocks. As shown in the figure, the CPI was rising slightly in the first period. However, in the second period, it begins to decline and reached its lowest point in the 4th period. After the peak point in the 6th period, it begins to decline rapidly. The movement and the pattern of the CPI reacts to the IBF shocks are fluctuated.

4.4 Conclusion

In conclusion, ADF and PP tests for all variables including IBF, GDP, GFCF, FDI, TRADE and INF have been tested in this chapter. The results of both the tests have shown that there are no unit root at the first difference level for all variables. In other words, it indicates that all the variables are stationary. Besides that, there are multicollinearity, heteroscedasticity and autocorrelation problems in the model at the significance level of 10%. However, the error term is normally distributed as the null hypothesis is failed to be rejected. Furthermore, the results of Johansen Cointegration test show that there are two cointegrating equations in both trace test and max-eigenvalue test at 10% significance level. In addition, the results of Granger causality test show that there is unidirectional relationship for GDP and IBF, FDI and IBF and TRADE and IBF while there is no causality relationship for GFCF and IBF and INF and IBF. The GDP, TRADE and CPI reacted positively to the IBF shocks while GFCF and FDI reacted negatively to the IBF shocks. The pattern of impulse response function of GDP, GFCF, FDI, TRADE and CPI are fluctuated to the shocks of IBF.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

5.0 Introduction

Firstly, the summary of study will summarize the research findings of unit root test, diagnostic checking, Johansen Cointegration test, Vector Error Correction Model (VECM) and Granger Causality test from the previous chapter. Besides, the discussion of major findings will discuss the research findings in Chapter 4. The findings will be used to compare and discuss to determine the relationship between Islamic Banks' Financing (IBF) with Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF), Foreign Direct Investment (FDI), Trade (TRADE), and Inflation (INF). Moreover, the implication of study and the significance of study will be further discussed in the following section. Lastly, there will be the limitations of study and some recommendations are being suggested for the future researchers.

5.1 Summary of Study

Table 5.1.1:

Summary of Unit Root Test for IBF, GDP, GFCF, FDI, TRADE and INF

	ADF Test		**PP Test**	
	At Level	First Difference	At Level	First Difference
Dependent variable:				
IBF	Non-stationary	Stationary	Non-stationary	Stationary
Independent variables:				

GDP	Non-stationary	Stationary	Non-stationary	Stationary
GFCF	Non-stationary	Stationary	Non-stationary	Stationary
FDI	Stationary	Stationary	Stationary	Stationary
TRADE	Non-stationary	Stationary	Non-stationary	Stationary
INF	Non-stationary	Stationary	Non-stationary	Stationary

According to Table 5.1.1, there is a summary of unit root test, which is separated into Augmented Dickey- Fuller (ADF) test and Phillips-Perron (PP) test. The result shows that the IBF, GDP, GFCF, TRADE and INF have the same results where the variables are non-stationary at level in both unit root tests. However, for FDI, it is stationary at level in both tests. The result also shows that all the variables are stationary at the first difference level in both tests.

Table 5.1.2:

Summary of Diagnostic Checking

Diagnostic Checking	Value	Result
Multicollinearity	Centered VIF (GDP, GFCF,	
	TRADE and INF) > 10	Reject
	Centered VIF (FDI) < 10	Do not reject
Heteroscedasticity	P-value < 0.10	Reject
Autocorrelation	P-value < 0.10	Reject
Normality	P-value > 0.10	Do not reject

According to Table 5.1.2, the result shows that the model has multicollinearity, heteroscedasticity and autocorrelation problems. However, there is a normality distributed error term in the model at the significance level of 10% since the null hypothesis is failed to be rejected.

Table 5.1.3:

Summary of Johansen Cointegration test between IBF with GDP, GFCF, FDI, TRADE and INF

	Trace Test	Max-Eigenvalue Test	Result
	Cointegrating Relationship		
GDP	√	√	Reject
GFCF	×	×	Do not reject
FDI	√	√	Reject
TRADE	√	√	Reject
INF	√	√	Reject

According to Table 5.1.3, there are cointegrating relationships for the GDP, FDI, TRADE and INF since the trace test statistics exceed the critical value at 90% confidence level. It is the same goes to the max-eigenvalue statistics at the significance level of 10%. Hence, it is proved that there is a cointegrating relationship between IBF with GDP, FDI, TRADE and INF and IBF do not cointegrated with GFCF.

Table 5.1.4:

Summary of Vector Error Correction Model (VECM) between IBF with GDP, FDI, TRADE and INF

Independent variables:	P-value	Result
GDP	< 0.10	Reject
FDI	> 0.10	Do not reject
TRADE	< 0.10	Reject
INF	> 0.10	Do not reject

According to Table 5.1.4, the result shows that GDP and TRADE have long run relationship with IBF since their p-values are lower than the significance level of 10%.

On the other hand, the p-values of FDI and INF exceed the level of significance at 10%. Hence, it means that it is making a decision to not reject the hypothesis testing and FDI and INF with IBF are not related to each other in the long run.

Table 5.1.5:

Summary of Granger Causality Test between IBF with GDP, GFCF, FDI, TRADE and INF

Independent variables:	P-value	Result
GDP		
GDP: IBF	> 0.10	Do not reject
IBF: GDP	< 0.10	Reject
GFCF		
GFCF: IBF	> 0.10	Do not reject
IBF: GFCF	> 0.10	Do not reject
FDI		
FDI: IBF	< 0.10	Reject
IBF: FDI	> 0.10	Do not reject
TRADE		
TRADE: IBF	> 0.10	Do not reject
IBF: TRADE	< 0.10	Reject
INF		
INF: IBF	> 0.10	Do not reject
IBF: INF	> 0.10	Do not reject

According to Table 5.1.5, IBF has a unidirectional relationship with GDP and TRADE which means IBF granger causes GDP and TRADE. FDI also found to be having a unidirectional relationship with IBF but it is FDI granger cause IBF in one direction. Moreover, the result also shows that GFCF and INF have no causality relationship with IBF since both the p-values are larger than the significance level of 10% and therefore, do not reject the null hypothesis.

5.2 Discussion of Major Findings

5.2.1 Gross Domestic Products (GDP)

According to the results of Table 5.1.3, Table 5.1.4 and Table 5.1.5, it shows that IBF and GDP have long run cointegration relationship and unidirectional relationship in Malaysia. It implies that IBF can help to enhance the economic growth in Malaysia. The outcome of these research findings are similar with the study of Ibrahim (2012) and Abduh and Omar (2012) which proved the results of long run cointegration relationship and IBF as supply-leading role. This is because Islamic banks have acted as a financial intermediation role effectively by transmiss the funds from surplus to deficit households, therefore IBF promotes economic growth. Moreover, the findings suggest that there is a closed linkage between Islamic financing to the economy which is parallel with the principle of Islamic finance. This is because Islamic finance industry emphasizes on the profit and loss sharing principle under Shariah law, hence, funds are encouraged to invest in asset-based (debt-like investments) and asset-backed (equity-like investments) transactions through equitable adjustment which is able to reduce poverty and sharing wealth in the country, hence facilitating economic growth (Cox, n. d.).

However, these findings are inconsistent with Farahani and Sadr (2012), Abduh and Chowdhury (2012), Gudarzi and Dastan (2013) and Tabash and Dhankar (2014b). They reinforced their findings by demonstrating IBF and GDP has a long run cointegration relationship but bidirectional causality. The contradictory results may due to the reason that when GDP granger cause IBF (demand-following) theory holds, it indicates an underdeveloped country with lack of financial institution lead to low demand for financial services. However, the causality direction could reverse and a "supply-leading" relationship exists as economic growth signifies (Liang & Reichert, 2006). Hence, it means that in the case of Malaysia, Malaysia is a well-developed country as "supply-leading" relationships holds. The effective financial intermediation process helps promote economic growth.

5.2.2 Gross Fixed Capital Formation (GFCF)

According to the results of Table 5.1.3, it shows that IBF and GFCF do not have cointegration relationship. The results of the findings are consistent with the study of Echchabi and Azouzi (2015) and Wahab, Mufti, Murad and Arif-ul-Haq (2016) where they proved that IBF and GFCF do not have cointegration relationship between each other. This is because IBF is involved in the Shariah-compliant modes of financing (adherence to Shariah requirements) instead of Shariah-based modes of financing (derived from Shariah laws), as the Shariah-based modes of financing may help to promote the investment as well as the real sector of economy in the country (Hanif, 2011).

However, the results of this research are inconsistent with the study of Tabash and Dhankar (2014a), Tabash and Dhankar (2014b) and Abduh and Omar (2012). The authors found that IBF and GFCF are cointegrated in the long run. The contradictory results may be due to the reason that Islamic finance in Malaysia is less likely to invest in fixed capital assets which is GFCF.

According to Khalid, (2019), as the involvement of advanced technology may help the industry to become more attractive and competitive, Islamic finance is focusing on the investment in financial technology (fintech) nowadays. This is because it may help to reduce the cost as well as improving the efficiency. Besides that, based on the perspective of Islamic finance's consumers, the innovation of fintech may bring a positive impact as the choices provided by the fintech are more aligned to the individual needs (Abdullah, 2016). Therefore, IBF may not affect GFCF in Malaysia in the case that the country prefers the investment in fintech recently in order to boost the industry.

5.2.3 Foreign Direct Investment (FDI)

According to the results in Table 5.1.3, the findings proved that IBF and FDI have a cointegration relationship. The outcome of this finding is consistent with the research of Tabash and Dhankar (2014a), Tabash and Dhankar (2015), Tabash and Dhankar (2014b), Tabash and Anagreh (2016) and Lawal and Iman (2016) which showed that results of cointegration relationship between FDI and IBF. This is because Islamic finance acts as an attractive environment for absorbing foreign direct investment into Malaysia. Furthermore, Malaysia as a worldwide leader in the sector of Islamic finance, provides confidence and attracts investors from other countries to make investments into Malaysia. Hence, Islamic finance brings FDI and it leads to economic upturn.

Besides, Table 5.1.5 indicates that the FDI has unidirectional relationship with IBF which proved that FDI granger causes IBF. However, this finding is inconsistent with the study of Tabash and Dhankar (2014a) and Tabash and Anagreh (2016) which the researchers reinforced that bidirectional connections between FDI and IBF is existing. Moreover, the research of Tabash and Dhankar (2014b) and the research of Tabash and Dhankar (2015) reinforced that FDI and IBF have unidirectional relationship where indicates IBF granger

causes FDI which is inconsistent with the finding of FDI granger causes IBF. Besides, this finding is also inconsistent with the study of Lawal and Iman (2016) in the case of Nigeria that they proved that granger causality does not exist between IBF and FDI. Hence, the contradictory results may because FDI into the firms could enhance the productivity of the economic growth and hence pushing the IBF to growth. When there are FDI into the firms in Malaysia, the capacity and productivity of the firms would increase. Expansion of the firms in Malaysia would boost the economy and hence provide an environment with lower cost of living and higher standard of living. Furthermore, a greater economy in Malaysia would provide lower inflation pressure and lower cost of borrowing. Therefore, the household will save their money into Islamic banks since the individuals hold surplus funds. Since there is a lower cost of borrowing, individuals or investors take this opportunity to make investments. Besides, Islamic banks will finance the deficit funds unit that wants to make investments and this proved that FDI will cause IBF.

5.2.4 Trade (TRADE)

According to the results of Table 5.1.3, it indicates that IBF and TRADE have a cointegration relationship. The outcome of these findings are inconsistent with the study of Tajgardoon, Behname and Noormohamadi (2013), Echchabi and Azouzi (2015) as well as Wahab, Mufti, Murad and Arif-ul-Haq (2016) in the case of Pakistan which the authors found out IBF and TRADE have no cointegration relationship. Besides that, Table 5.1.4 shows the result of IBF and TRADE are cointegrated in the long run. The outcomes are inconsistent with the study of Tajgardoon, Behname and Noormohamadi (2013) but consistent with the study of Wahab, Mufti, Murad and Arif-ul-Haq (2016) and also Nursyamsiah (2017). The result of Table 5.1.5 indicates that IBF does granger cause TRADE but TRADE does not granger cause IBF. This results are similar with the study of Tajgardoon, Behname and Noormohamadi (2013) and

Nursyamsiah (2017) but inconsistent with Echchabi and Azouzi (2015) as well as Muhammad and Dauda (2018) which proved that there is no causality between IBF and TRADE.

The major reason is that Islamic banks in Malaysia had progressively applied technological methods to make the trade finance operations more efficient in order to facilitate and support the halal exports (Singh, 2017). According to Singh (2017), Bank Negara Malaysia has prepared a lot of initiatives to encourage Islamic banks in facilitating the trade finance, including the digitalisation of trade finance offerings and upgrading the accessibility of trade credit takaful to protect the businesses against the risk of non-payment by buyers. All these measures were taken to support the halal exports which can promote economic growth. From another point of view, this is because the wave of internationalization in Islamic finance can facilitate the flows of financial and trade. According to Tan Sri Dr. Zeti Akhtar Aziz, the governor of Bank Negara Malaysia, the number of Islamic financial institutions have increased outside their domestic borders and also the foreign participation in Islamic financial market domestically. Internationalization in Islamic finance can promote investment and financial flows between Asia and Middle East that can facilitate trade, direct investment and also finance ("The Governor of the Central Bank of Malaysia Outlines an Agenda for Balanced Growth and Development", 2010).

5.2.5 Inflation (INF)

According to Table 5.1.3, there is a cointegrating relationship between INF and IBF. This result is consistent with Nursyamsiah (2017), Setyowati (2019), Zahid and Basit (2018), Bm and Uddin (2016) and Sumarti, Hayati, Cahyani and Wahyudi (2017). Their studies obtained a similar result that INF and IBF are cointegrated to each other in the short run. It implies that INF and IBF are

related to each other. According to Ghannadian and Goswami (2004), this may be due to the importation of inflation in Malaysia since it is an open economy. The future rate of inflation can be forecasted by the government only if there is a closed economy (only involved domestic activities). Therefore, as inflation rate is caused by fiscal and monetary policies and it is followed by the government, furthermore, the future rate of inflation can be predicted. In contrast, in an open economy, which involved international trade and investment activities with foreign countries, the inflation might occur and cannot be predicted. This has led to the existence of risk in loss of purchasing power for the depositors in IBF. Hence, according to the principle of daman (guarantee) under the Islamic law, there is a compensation for their risk assumptions provided by Islamic banks with a purpose to avoid the depositors to lose their right as well as to protect their assets value. This is due to the depositors may lose the value of their saving amount in the bank during inflation. The compensation can only be provided if the borrower is guaranteed to be paid a sum to maintain their purchasing power. Therefore, the compensation may increase the overall savings of the depositors and resulting in greater economic growth.

However, according to Table 5.1.4, the findings proved that INF and IBF have no long run relationship after further studying the VECM. According to Nursyamsiah (2017), Setyowati (2019), Zahid and Basit (2018) and Bm and Uddin (2016), these studies carried out the result that is inconsistent with the outcome of the findings in the table above by reinforcing IBF and INF are cointegrated in the long run. In addition, IBF and INF have no causality relationship in Table 5.1.5. This result is also inconsistent with Nursyamsiah (2017) and Setyowati (2019). They found out that INF and IBF have a bidirectional causality relationship, which indicates that both variables cause and effect each other.

The contradictory reasons of INF has no relationship with IBF in the long run and both variables are not granger cause with each other may due to there is no inflationary pressure on the Murabahah contract, which is one of the mode of financing in Islamic bank (Jamaldeen, n. d.). In accordance with Shariah principles, Islamic banks offer Islamic banking products such as Mudharabah (profit sharing), Musharakah (joint venture), Murabahah (cost plus finance), and Ijarah (leasing). In a Murabahah contract, Islamic banks sell the asset to the customers in the form of cost-plus profit, which indicates that there is a markup for the profits and it is agreed upon by both bank and customers at the same time. This is a form of credit sale without charging the riba (interest) and being acceptable under the Islamic laws. The repayment for the asset is in instalment and the transaction has no financial uncertainty since both parties know well about the costs and profit margin agreed. Hence, there will be no adjustment on the markup of the asset if the customers default on the payments instalments as well as during inflation as the markup for the profits remained unchanged and does not compound the interest and therefore, it will not be affected by the inflation rate.

5.3 Implication of Study

This study is mainly aimed to determine the short and long run relationship between IBF and macroeconomic variables. According to the results in the previous chapter, IBF with both GDP and TRADE have cointegration in long run. Furthermore, IBF are cointegrated with FDI and INF in a short run. However, there is no cointegration relationship between IBF and GFCF. The results of these findings can convey a lot of useful information to some parties like policymakers, investors and also the government.

Policy makers may get the information and knowledge from this research. For instance, the findings showed that GDP and TRADE consist of long run cointegration

relationship with IBF. Hence, the policy makers would focus on the importance of IBF in promoting economic growth by increasing the GDP and TRADE in the long run. Therefore, policy makers can implement new or modify existing policies that encourage the government and consumers to focus on Islamic banking industry to solve the problem like economic downturns. GDP and TRADE are indicators of economic growth, so promoting them during recession may recover and accelerate the growth of the economy in Malaysia.

Furthermore, investors may get benefits from these findings and results. According to the findings, IBF is able to promote economic growth through GDP, FDI, TRADE and INF but not GFCF. They are able to have a clear understanding about the connection between the Islamic finance and also macroeconomic variables. Therefore, these findings can build and create greater awareness for the Muslim as well as Non-Muslim consumers that they can support and demand Islamic-based financial products and services to promote the economic growth. Not only that, they can make a better decision in carrying out their investments and transactions like lending and borrowing. This is because Islamic financial instruments are considered to be safer due to some unique characteristics like low leverage ratio, restrictions in qualitative and quantitative areas and genuine asset backing. Meanwhile, it can lead to facilitating economic growth in Malaysia.

Nevertheless, the government may benefit from the significant relationship between IBF, GDP, FDI, TRADE and INF that can stimulate economic growth in Malaysia. Since IBF acts as an effective financial intermediaries role, therefore the government can enhance the growth by increasing additional channels in Islamic financing which transmits the fund from investors to the financial system, thereby increasing investment and real sector growth. Moreover, this research can convey great signals to the government sector. For instance, GDP and TRADE have a long run cointegration relationship while FDI and INF have short run cointegration relationship while GFCF has no cointegration with IBF. Hence, authorities can provide incentives to reinforce the Islamic financial developments in order to sustain the economy in the long run

effects. Besides, authorities may have awareness of these issues and develop plans or implement strategies to solve the appearance problems.

5.4 Limitations of Study

There are some limitations which are the potential weaknesses being found in this study. Firstly, the limitation that the researcher found in this study is that the exclusion of the qualitative point of view. In this study, the quarterly data of GDP, FDI, TRADE, GFCF and INF have been captured from Bank Negara Malaysia and IMF's International Financial Statistics in order to investigate the relationship with IBF. However, the data that researchers included are just quantitative data but without qualitative data. The quantitative data is conceptual and descriptive while qualitative data is categorized based on the characteristics and traits of variables. The exclusion of the qualitative point of view may cause the study unable to provide complete and perfect results to the researchers.

Besides that, this study has the limitation on insufficient data as there are some variables which do not have the latest data of year 2019. The variables are GDP and GFCF, where the data can only be collected until year 2018. Hence, the period of this study will be from 2010 to 2018. In addition, based on the previous research, although the monthly or daily basis data are more reliable than the annually or quarterly basis data, this study is unable and failed to so. This is because the data of some of the variables are provided in yearly and quarterly basis. Therefore, in order to have more accurate and reliable results, quarterly basis data have been used to conduct this research. The maximum observation of this study are only 36 sample sizes which are from the period of 2010 Q1 to 2018 Q4.

Moreover, the insufficient in the empirical study for the variable of inflation is one of the limitations found in this study. There was lack of past research studies in the area of inflation. While the researchers were searching for the reference to study more and

support the independent variable of inflation, only several of articles were related and can be referred to. Hence, there were insufficient articles about inflation can be used as reference by the researchers. The insufficient information in inflation may hinder the enhancements of the study.

Furthermore, the independent variables that have been chosen in this research are GDP, GFCF, FDI, TRADE and INF to examine the dynamic relationship with IBF. However, the study may not be able to provide precise and significant results due to the omission of some independent variables. These variables may be significant to this study and can actually affect IBF as well but they are being omitted while doing the research. The other variables that may be included in this research are the bank specific factors, such as bank size, liquidity, liability, capital adequacy and so on. Hence, the addition of these variables in the study may be able to generate different yet more accurate findings.

In addition, there is also another limitation which is the exclusion of the study of conventional banking. This study is focused on the Islamic banks where the data and results are not related to the conventional banks. This causes the study unable to deliver a clear picture of the relationship between the conventional banks' financing and IBF as the whole research is investigating from the point of view of Islamic banks. Hence, adding the study of conventional banking may help to provide a more reliable and clear results of the banks' financing.

Last but not least, the limitation found in this study is that the lack of capability in the knowledge of econometric tests. The researchers were unable to examine and analyse the econometric results due to the incapability in the comprehensive econometric analysis. The significant movement between the dependent variables and independent variable cannot be observed because of the experience in econometric analysis of the researchers were insufficient. Hence, it will affect the quality of the empirical results and analysis.

5.5 Recommendations for Future Research

There are few recommendations that will be suggested for the future researchers regarding the limitations of this study. First and foremost, the future researchers are suggested to involve the qualitative data in the next study. This is because the qualitative data is important to be included in the study due to some of the qualities, recurrence of attributes and type of information in a given study cannot be measured in quantitative data. Besides, qualitative information enables the researchers to measure the general surroundings and greater set of data to observe. There are some methods to collect the qualitative data for instance one to one interview, information analysis, observation and focus group which is also known as group discussions.

Furthermore, in order to have more accurate and significant results, future researchers can consider increasing the sample size of the study. Future researchers are encouraged to use different data frequencies such as on a monthly basis, weekly basis or daily basis for the study. This is because different independent variables might have different sensitivity on a different frequency. Although there is always a problem faced by the researchers when collecting the secondary data in their research, future researchers are recommended to try to collect the data on a monthly basis in order to generate more detailed and precise results. Therefore, the sample size will be larger compared to the data on a quarterly basis.

In addition, the researchers are recommended to study and do more research in the area for inflation so that there will be more articles or research that enable other researchers to refer and use to support their study. The future researchers are also recommended to study inflation with including others variables that are relevant to the study so that the outcomes of the research will be better. Besides, the variables should be chosen carefully that the variables are significant and relevant for the purpose of enhancing the quality of the model in the research.

Moreover, for the omission of some independent variables, future researchers are recommended to include the variables such as the bank specific factors in the study. This may help to improve the results of the study. This is because most of the researches in the past was investigating IBF with the independent variables such as GDP, GFCF, FDI, TRADE and FDI, where they may be omitted the other variables which are important for the research. Therefore, in order to have better yet more precise results or research, the addition of other variables may be useful for the future researchers.

Besides that, future researchers are also recommended to include conventional banking into the research of the IBF. They are recommended to compare and contrast the results of both conventional banks' financing and IBF which can provide better understanding about the relationship between them. Not only that, this may also help the future researchers to have a clearer understanding about which of them has the potential to impact on economic growth. Therefore, the accuracy of the results of the research may be improved.

Lastly, the future researches are being recommended to gain and learn some knowledge about the econometric tests before starting the researches. This is because if the researchers have sufficient knowledge in the area of econometric analysis, the data running or results analysis in the study will become easier and smoother. The researchers can gain comprehension of related knowledge from related sources for examples the articles or journals from others researches. Besides, researchers are recommended to get the data from reliable database for instance Google, Bank Negara Malaysia, Monthly Bulletin, Science Direct and etc. In addition, the researchers will provide higher quality of results and clearer interpretation based on the econometric results. Hence, the study will be more accurate and more reliable.

5.6 Conclusion

In conclusion, the summary of study and the major findings of the variables based on the results from the previous chapter has been discussed in this chapter. Furthermore, the implication of study for some parties such as policy makers, investors and government are also being discussed. This research can deliver better understanding about the dynamic relationship of IBF and the macroeconomic variables. The findings of this study may help the policy makers in obtaining more information and implement any policies if needed. Moreover, the investors may also benefit from the research in making better decisions for investments. According to the findings of this research, the government may also gain more understanding in providing the suitable incentives to stimulate the country's economic growth. In the following part, it also discussed the potential limitations of this research such as the exclusion of the qualitative point of view, the limitation on insufficient data, the insufficient empirical study on INF, the omission of variables, the exclusion of the study of conventional banking and the lack of capability in the knowledge of econometric tests. Last but not least, the recommendations which may be useful for the future researchers to find some alternative solutions to solve the limitations of the study are being suggested in this chapter as well.

REFERENCES

Abduh, M., & Omar, M. A. (2012). Islamic banking and economic growth: the Indonesian experience. *International Journal of Islamic and Middle Eastern Finance and Management, 5*(1), 35-47.

Abdullah, A. (2019，February 7). Malaysia a global leader in Islamic banking. *New Straits Times.* Retrieved June 10, 2019, from https://www.nst.com.my/opinion/columnists/2019/02/458228/malaysia-global-leader-islamic-banking

Abdullah, O. (2016). *Impact of fintech to Islamic finance.* Retrieved February 15, 2020, from https://www.islamicfinance.com/2016/04/impact-fintech-islamic-finance/

Introduction to Islamic finance. (n.d.). Retrieved June 13, 2019, from https://www.accaglobal.com/my/en/student/exam-support resources/fundamentals-exams-study-resources/f9/technical-articles/introduction-to-islamic-finance.html

Adhikary, B. K. (2011). FDI, trade openness, capital formation, and economic growth in Bangladesh: A linkage analysis. *International Journal of Business and Management, 6* (1), 16-28.

Ahmad, A. (2004). Economic development in Islamic perspective revisited. *Journal of King Abdulaziz University: Islamic Economies, 17*(1), 53-83.

Ahmad, M., Palil, R., Abu Bakar, A. B., & Dolah, N. H. (2015). Literature review on the knowledge of Islamic banking products among Muslim entrepreneurs. *South East Asia Journal of Contemporary Business, Economics and Law, 6*(3), 20-24.

Ahmad Razimi, M. S., Romle, A. D., & Jumahat, J. (2017). The consumer acceptance on Islamic banking in Malaysia. *World Journal of Management and Behavioral Studies, 5*(1), 14-20.

Affin Islamic. (n.d.). Retrieved August 12, 2019, from https://www.affinislamic.com.my/Business-Banking/Financing/Revolving-Credit-i.aspx?lang=en-US

Alawode, A. A. (2015). *Islamic Finance.* Retrieved June 12, 2019, from http://www.worldbank.org/en/topic/financialsector/brief/islamic-finance

Alfora, L., Chanda, A., Kalemli-Ozcan, S., Sayek, S. (2006). How does foreign direct investment promote economic growth? Exploring the effects of financial markets on linkages. NBER Working Paper 12522.

Al-Jarhi, M. A. (1980). A monetary and financial structure for an interest-free economy: Institutions, Mechanism & Policy.

Amadeo, K. (2019). *Exports and their effect on the economy.* Retrieved June 12, 2019, from https://www.thebalance.com/exports-definition-examples-effect-on-economy-3305838

Amadeo, K. (2020). *International trade: Pros, cons, and effect on the economy.* Retrieved December 14, 2019, from https://www.thebalance.com/international-trade-pros-cons-effect-on-economy-3305579

Aziz, Z. A. (2013). *Islamic finance - financial stability, economic growth and development.* Retrieved June 12, 2019, from https://www.bis.org/review/r131129b.htm

Banton, C. (2019). *Wage-price spiral.* Retrieved June 13, 2019, from https://www.investopedia.com/terms/w/wage-price-spiral.asp

Behname, M. (2012). Foreign direct investment and economic growth: Evidence from Southern Asia. *Atlantic Review of Economics, 2,* 1-14.

Bernama. (2018, October 3). Malaysia maintains position as Islamic finance global leader. *New Straits Times.* Retrieved June 13, 2019, from https://www.nst.com.my/business/2018/10/417367/malaysia-maintains-position-islamic-finance-global-leader

Bm, H., & Uddin, M. A. (2016). Does Islamic bank financing lead to economic growth: An empirical analysis for Malaysia. *MPRA Paper.*

Bursa is the worst major market to date in 2019. (2019, April). Retrieved June 14, 2019, from https://www.straitstimes.com/business/bursa-is-worst-major-market-to-date-in-2019

Crossman, A. (2019). *Pros and cons of secondary data analysis.* Retrieved December 15, 2019, from https://www.thoughtco.com/secondary-data-analysis-3026536

Datta, K., & Mukhopadhyay, C. K. (2011). Relationship between inflation and economic growth in Malaysia - An econometric review. *International Conference on Economics and Finance Research, 4*, 415-419.

Davis, M. (2019). *Inflation and economic recovery.* Retrieved June 13, 2019, from https://www.investopedia.com/financial-edge/0212/inflation-and-economic-recovery.aspx

Dudovskiy, J. (n.d.) *Writing research background.* Retrieved December 27, 2019, from https://research-methodology.net/research-methodology/research-process/writing-research-background/

Dwyer, G. P. (2015). *The Johansen tests for cointegration.* Retrieved January 16, 2020, from http://www.jerrydwyer.com/pdf/Clemson/Cointegration.pdf

Echchabi, A. & Azouzi, D. (2015). Islamic finance development and economic growth nexus: The case of the United Arab Emirates (UAE). *American Journal of Economics and Business Administration, 7*(3), 106-111.

El-Ghattis, N. (2011), Islamic banking's role in economic development: Future outlook. *Centre of Islamic Finance, Bahrain Institute of Banking and Finance, Bahrain.*

Ghannadian, F. F. & Goswami, G. (2004). Developing economy banking: The case of Islamic banks. *International Journal of Social Economics, 31*(8), 740-752.

Grimsley, S. (n. d.). *Importing and exporting in a global market: Definition, process & importance.* Retrieved June 13, 2019, from https://study.com/academy/lesson/importing-and-exporting-in-a-global-market.html

Gomez-Biscarri, J., & Hualde, J. (2015). Regression-based analysis of cointegration systems. *Journal of Econometrics, 186*(1), 32-50. Doi:10.1016/j.jeconom.2014.12.007

Gujarati, D.N. (2003). *Basic economics (4th ed.). Boston: McGraw- Hill.*

Gujarati, D.N. & Porter, D.C. (2009). *Basic econometrics. (5ᵗʰ ed.). Boston, Ma: McGraw-Hill/Irwin.*

Hallaq, Said (1995). "Rationality in production: The case of Muslim firm", *Humanomics, 11*(4), 29-38.

Hanif, M. (2011). Differences and similarities in Islamic and conventional banking. *International Journal of Business and Social Science, 2*(2), 166-175.

Hassan, Zubair (1992). Profit maximization: Secular versus Islamic in Sayyid Tahir, Aidit Ghazali and Syed Omar Syed Agil (eds.) Readings in Microeconomics: An Islamic Perspective. Petaling Jaya: Longman Malaysia Sdn. Bhd.

Hire-purchase (leasing) in Islamic finance. (n.d.). Retrieved August 12, 2019, from https://islamicmarkets.com/education/hire-purchase-leasing-in-islamic-finance

Ibrahim, M. L. & Umar, B. I. (2016). Islamic finance and economic growth: Empirical evidence from Nigeria. *Journal of Economics and Sustainable Development, 7*(16), 99-108.

Impulse responses and variance decompositions. (n.d.). Retrieved June 6, 2019, from http://www.learneconometrics.com/class/5263/notes/gretl/Impulse%20responses%20and%20variance%20decompositions_gretl.pdf?fbclid=IwAR1HV-uf1l0_kppI7ajcWKnepqWxqB9ao7wIWrtf7f-Txstj0uMB_jO0gII

Inflation - Consequences of inflation. (n.d.). Retrieved June 13, 2019, from https://www.tutor2u.net/economics/reference/inflation-consequences-of-inflation

Islamic finance: promoting real economic development. (2015, October). Retrieved June 9, 2019, from http://www.mifc.com/index.php?ch=28&pg=72&ac=150&bb=uploadpdf

Jaffer, S. (2016). *Rejuvenating the European economy: The role of Islamic finance.* Retrieved June 10, 2019, from https://www.worldfinancialreview.com/rejuvenating-the-european-economy-the-role-of-islamic-finance/?fbclid=IwAR3xaXkLFfZK084AMGkP2ZQaGk-frn_TpzsOrs4mVoIkiKRenYiy-sViy0Y

Jamaldeen, F. (n.d.). *Make purchases with cost plus profit (murabaha) contracts.* Retrieved February 15, 2020, from https://www.dummies.com/personal-finance/islamic-finance/make-purchases-with-cost-plus-profit-murabaha-contracts/

Katrutsa, A., & Strijov, V. (2007). Comprehensive study of feature selection methods to solve multicollinearity problem according to evaluation criteria. *Expert Systems with Applications, 76*, 1-11.

Kenton, W. (2019). *Autoregressive conditional heteroskedasticity (ARCH).* Retrieved December 27, 2019, from https://www.investopedia.com/terms/a/autoregressive-conditional-heteroskedasticity.asp

Khalid, S. (2019, October 4). Fintech can boost Islamic finance. *The Malaysian Reserve.* Retrieved February 15, 2020, from https://themalaysianreserve.com/2019/10/04/fintech-can-boost-islamic-finance/

Kuzu, S. & Onder, E. (2014). Research into the long-run relationship between logistics development and economic growth in Turkey. *Journal of Logistics Management, 3(1),* 11-16. Doi 10.5923/j.logistics.20140301.02

Kwakwa, V. (2013). *How Islamic finance is helping fuel Malaysia's green growth.* Retrieved June 11, 2019, from https://www.scmp.com/comment/insight-

opinion/article/2110938/how-islamic-finance-helping-fuel-malaysias-green-growth

Latip, M., Yahya, M. H., & Junaina, M. (2017). Factors influencing customer's acceptance of Islamic banking products and services. *Journal of Islamic Economics and Business, 2*(1), 1-18.

Levine, R., & Renelt, D. (1992). A sensitivity analysis of cross-country growth regressions. *The American Economic Review, 82* (4), 942-963.

Liang, H. Y., & Reichert, A. (2006). The relationship between economic growth and banking sector development. *Banks and Bank Systems, 1*(2), 19-35.

Lim, S. (2019). *Understanding Islamic banking.* Retrieved June 11, 2019, from https://www.investopedia.com/terms/i/islamicbanking.asp

Metwally, M. M (1992). A behavioural model of an Islamic firm. *Readings in Microeconomics: An Islamic Perspective.* Petaling Jaya: Longman Malaysia Sdn. Bhd.

Moffatt, M. (2019). *What is the augmented dickey-fuller test?* Retrieved June 11, 2019, from https://www.thoughtco.com/the-augmented-dickey-fuller-test-1145985

Nagakawa, R. (2009). The evolution of Islamic finance in Southeast Asia: The case of Malaysia (1). *The Journal of Applied Business Research, 25* (1), 117-118.

Naveed, M. (2014). *Sukuk as a way to revitalize European economies.* Retrieved June 11, 2019, from https://www.sukuk.com/article/sukuk-revitalize-european-economies-2208/

Ncanywa, T., & Makhenyane, L. (2016). Can investment activities in the form of capital formation influence economic growth in South Africa?

NG, M. S. (2017, August 21). Growing the Islamic banking business. *The Malaysian Reserve.* Retrieved June 13, 2019, from

https://themalaysianreserve.com/2017/08/21/growing-islamic-banking-business/

Normality. (2013). Retrieved December 12, 2019, from https://www.statisticssolutions.com/normality/

Nursyamsiah, T. (2017). Macroeconomic determinants of Islamic banking financing. *Tazkia Islamic Finance and Business Review (TIFBR), 11*(2), 145-164.

Pettinger, T. (2017). *Importance of exports to the economy.* Retrieved June 8, 2019, from https://www.economicshelp.org/blog/7164/trade/importance-of-exports-to-the-economy/

Pettinger, T. (2016). *Gross fixed capital formation.* Retrieved January 5, 2020, from https://www.economicshelp.org/blog/6536/economics/gross-fixed-capital-formation/

Pettinger, T. (2017). *Definition of inflation.* Retrieved December 19, 2019, from https://www.economicshelp.org/macroeconomics/inflation/definition/

Phillips, C. B., & Perron, P. (1988). Testing for unit roots in time series regression. *Biometrika, 75*, 335-346.

Picardo, E. (2019). *The importance of the GDP.* Retrieved January 15, 2020, from https://www.investopedia.com/articles/investing/121213/gdp-and-its-importance.asp

Pickell, D. (2019). *Qualitative vs quantitative data – What's the difference?* Retrieved January 16, 2020 from https://learn.g2.com/qualitative-vs-quantitative-data

Plossner, C. (1992). The search for growth in policies for long-run economic growth, Federal Reserve Bank of Kansas City, Kansas City, MO.

RHB Islamic Bank Berhad trust receipt-i. (2015). Retrieved August 12, 2019, from https://www.rhbgroup.com/files/islamic/trade/trade-financing/pds-tr-i.pdf

Rouse, M. (2017). *Secondary data.* Retrieved December 17, 2019, from https://whatis.techtarget.com/definition/secondary-data

Sarokin, D. (2017). *How does the GDP affect a country's economy?* Retrieved June 13, 2019, from https://smallbusiness.chron.com/how-does-gdp-affect-economy-8750996.html

Setyowati, N. (2019). Macroeconomic determinants of Islamic banking products in Indonesia. *Enonomies, 7* (53), 1-15.

Singh, H. (2017, August 14). Time to bump up Shariah-compliant trade finance facilitation. *The Malaysian Reserve.* Retrieved February 14, 2020, from https://themalaysianreserve.com/2017/08/14/time-bump-shariah-compliant-trade-finance-facilitation/

Stephanie, K. (2016). *Unit root: simple definition, unit root tests*. Retrieved June 13, 2019 from https://www.statisticshowto.datasciencecentral.com/unit-root/?fbclid=IwAR2ExuH_z93h7J1oz86Cyi5nKMWgskrQdMwLZtL2oKqV9rTgU2TZFhJCgRQ

Stephanie, K. (2016). *Granger causality: Definition, running the test*. Retrieved June 20, 2019, from https://www.statisticshowto.datasciencecentral.com/granger-causality/?fbclid=IwAR1yD8SyCmkkpclvmgpRawQ0KtpS3i7dLtAvbaHvexE6wlNjC21Fo-xh8w

Stephanie. (2016). *Breusch-pagan-godfrey test: definition.* Retrieved December 15, 2019, from https://www.statisticshowto.datasciencecentral.com/breusch-pagan-godfrey-test/

Smith, M. (2015). *The relationship between inflation and economic growth (GDP): An empirical analysis.* Retrieved June 9, 2019, from https://www.ivoryresearch.com/writers/melanie-smith/

Surmarti, N., Hayati, M. M., Cahyani, N. A., Wahyudi, R. R., Tristanti, D. P., & Meylani, R. (2017). Has the growth of Islamic banking had impact to economic growth in Indonesia? *International Conference on Engineering Technologies and Applied Sciences (ICETAS).*

Tabash, M. I. & Dhankar, R. S. (2014a). Islamic financial development and economic growth: Empirical evidence from United Arab Emirates. *Journal of Emerging Economies and Islamic Research, 2*(3), 1-16.

Tabash, M. I. & Dhankar, R. S. (2014b). Islamic banking and economic growth: An empirical evidence from Qatar. *Journal of Applied Economics and Business, 2*(1), 51-67.

The Governor of the Central Bank of Malaysia Outlines an Agenda for Balanced Growth and Development. (2010, October). Retrieved February 14, 2020, from https://www.isdb.org/news/the-governor-of-the-central-bank-of-malaysia-outlines-an-agenda-for-balanced-growth-and-development

Tuah, Y. (2017, March 5). Islamic finance: The unconventional but nascent financial system. *Borneo Post Online.* Retrieved June 13, 2019, from https://www.theborneopost.com/2017/03/05/islamic-finance-the-unconventional-but-nascent-financial-system/

Ugochukwu, U. S., & Chinyere, U. P. (2013). The impact of capital formation on the growth of Nigerian economy. *Research Journal of Finance and Accounting, 4* (9), 36-42.

Vijavasri, G.V. (2013). The importance of international trade in the world. *International Journal of Marketing, Financial Services & Management Research, 2*(9), 3.

Wahab, M., Mufti, O., Murad, M. S., & Arif-ul-Haq. (2016). The study of co-integration and causal link between Islamic bank financing and economic growth. *Abasyn Journal of Social Sciences, 9*(2), 134-146.

What is Gross Domestic Product or GDP? How does it affect currency exchange rates? (2018, April). Retrieved June 13, 2019, from https://transferwise.com/gb/blog/gross-domestic-product-meaning

What is Islamic banking? Its introduction and concepts. (2019, May). Retrieved June 7, 2019, from http://www.aims.education/islamic-finance-blog/what-is-islamic-banking/

Stronger open trade policies enable economic growth for all. (2018, April). Retrieved June 12, 2019, from https://www.worldbank.org/en/results/2018/04/03/stronger-open-trade-policies-enables-economic-growth-for-all

Wyse, S. (2011). *What is the difference between qualitative research and quantitative research?* Retrieved January 16, 2020 from http://www.snapsurveys.com/blog/what-is-the-difference-between-qualitative-research-and-quantitative-research/

Xavier, J. A. (2019). Is a recession coming? *New Straits Times.* Retrieved July 15, 2019, from https://www.nst.com.my/opinion/columnists/2019/01/456002/recession-coming

Yoon, J. C., Min, D. H., & Jei, S. Y. (2019). Empirical test of purchasing power parity using a time-varying cointegration model for China and the UK. *Physica A: Statistical Mechanics and Its Applications,* 521, 41-47. Doi:10.1016/j.physa.2019.01.072

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

Zamir, M. M., Rostom, A., & Fu, X. C. (2012). The role of Islamic finance in enhancing financial inclusion in organization of Islamic Cooperation (OIC) countries. *Islamic Economic Studies, 20* (2).

Zin, M. Z. M., & Kadir, A. R. A. (2011). Growth and prospect of Islamic finance in Malaysia. *International Conference on Social Science and Humanity, 5*.

Zou, X. (2018). VECM model analysis of carbon emissions, GDP, and international crude oil prices. *Discrete Dynamics in Nature and Society,* 2018, 1–11.