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THE DETERMINANTS OF STOCK MARKET PERFORMANCE: COMPARATIVE ANALYSIS OF THE ISLAMIC STOCK MARKET AND CONVENTIONAL STOCK MARKET

Doktora Tezi

BASSAM M. O. AL-AGHA

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TEZ ONAY BELGESİ

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1.	Tez Danışmanı	Prof. Dr. EMİN AVCI	
2.	Jüri Üyesi	Prof. Dr. JALE SÖZER ORAN	
3.	Jüri Üyesi	Doç. Dr. ENDER DEMİR	
4.	Jüri Üyesi	Doç. Dr. ASLI AYBARS	
5.	Jüri Üyesi	Doç. Dr. CAN TANSEL KAYA	

GENERAL KNOWLEDGE

Name and Surname	: Bassam M. O. AL-AGHA
Field	: Business Administration
Program	: Accounting and Finance
Supervisor	: Prof. Dr. Emin AVCI
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ABSTRACT

For the last few decades, Islamic stock markets have become a vital part of the international stock markets; it has evolved to become an integral part of the international financial system. The increasing growth of the Islamic stock market and its ethical principles has attracted different investors from both Muslim and non-Muslim countries.

This study highlights the comparison between the performance of Islamic and conventional stock markets from several aspects including the determinants of stock market performance, co-movement relationship and market performance. Sample case-study used in this research is comprised of 10 indices from both the conventional and Islamic stock market indices of 5 different countries, namely; the USA, UK, Canada, Japan, and Indonesia, and which covers covered the periods between 2000 and 2014.

Sharpe ratio is one of the analysis tools use in this research study and it indicated that during the entire case-study period, as well as the pre-crisis period, the conventional indices outperformed the Islamic counterparts in the five countries except in Indonesia. However, during the crisis period, the performance of Islamic indices in all countries, except in the UK, was better than their conventional counterparts. Consequentially, in the post-crisis period, the conventional indices outperformed the Islamic counterparts.

Another important analysis tool used in the research study is the Engle-Granger Co-integration test which shows that there is no co-integration between Islamic and conventional stock market indices in long-term; while, the Granger causality analysis points out that in the USA, UK, and Japan, there is only one-way Granger causality towards the Islamic stock markets, which implies that the conventional stock markets affected the Islamic stock markets in short-term. Furthermore, it is seen that there is a Granger causality in Indonesia and Canada, which depicts that the Islamic and the conventional stock markets equalized each other in short-term. The results analysis for the determinants of market performance revealed that there are no significant statistically differences between the factors affecting the Islamic and the conventional stock market indices, and the analysis of stepwise regression shows that the main determinants of the stock market performance are exchange rate, GDP, and oil price.

GENEL BİLGİLER

İsim ve Soyadı	: Bassam M. O. AL-AGHA
Anabilim Dalı	: İşletme (İngilizce)
Programı	: Muhasebe Finansman (İngilizce)
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ÖZET

Son yıllarda, İslami hisse senedi piyasaları, dünya hisse senedi piyasaları arasında önemli bir yere sahip olmuştur. Günümüzde ise, bu piyasalar uluslararası finans sisteminin ayrılmaz bir parçası hâline gelmiştir. İslami senedi piyasalarının yükselişe geçişi ve ahlaki prensipleri, Müslüman ve gayrimüslim ülkelerdeki farklı yatırımcıların ilgisini çekmektedir.

Bu çalışma, İslami ve konvansiyonel senedi piyasalarının farklılıkları; getirilerin belirleyicileri, birlikte hareket ilişkisi ve piyasa performansı gibi farklı alanları göz önünde bulundurarak ortaya koymayı amaçlamaktadır. Çalışmada buna ek olarak, sub-prime krizinin İslami ve konvansiyonel piyasadaki etkileri de incelenmiştir.

Araştırmanın örneklemi; USA, UK, Kanada, Japonya ve Endonezya olmak üzere 5 ülkenin konvansiyonel ve İslami piyasa endekslerinden alınan 10 endeksten oluşmaktadır. Çalışmada 2000 ve 2014 yılları arasındaki dönem baz alınmıştır. Sharpe oranı analizine göre bütün süreç boyunca, kriz öncesindeki süreçte de olduğu gibi, Endonezya hariç olmak üzere diğer ülkelerde konvansiyonel endeksler İslami endekslerden daha iyi performans göstermiştir. Kriz sürecinde ise İslami endekslerin (Birleşik Krallık hariç olmak üzere) bütün ülkelerdeki performansı, konvansiyonel endekslerden daha iyi sonuç göstermiştir. Bununla birlikte, kriz sonrası dönemde konvansiyonel endeksler, İslami endekslere göre daha iyi performans göstermiştir.

Engle-Granger Koentegrasyon (Eş-bütünleme) Testi sonucuna göre, İslami ve konvansiyonel borsa arasında uzun vadede koentegrasyon bulunmamaktadır. Bununla birlikte Granger nedensellik analizine göre, USA, UK ve Japonya'da İslami borsalara doğru sadece tek yönlü nedensellik bulunmaktadır; bu da konvansiyonel borsaların kısa vadede İslami borsaları etkiledikleri anlamına gelmektedir. Diğer taraftan Endonezya ve Kanada'da, İslami ve konvansiyonel borsaların kısa vadede birbirini dengelediği bir Granger nedenselliği mevcuttur. Piyasa performansının belirleyicilerinin analiz sonuçlarına göre, İslami ve konvansiyonel borsa endekslerini etkileyen faktörler arasında istatistiksel farklılıklar bulunmamaktadır. Adımsal regresyon analizine göre ise, borsa performansının ana belirleyicileri döviz kuru, Gayrisafi Yurtiçi Hasıla ve petrol fiyatlarıdır.

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ABBREVIATIONS

AAOIFI	Auditing Organization for Islamic Financial Institutions
CIBAFI	Council for Islamic Banks and Financial Institutions
CPI	Consumer Price Index
CSM	Conventional Stock Market
DJIMCA	Dow Jones Islamic Market Canada Index
DJIMJAP	Dow Jones Islamic Market Japan Index
DJIMUK	Dow Jones Islamic Market U.K. Index
DJIMUS	Dow Jones Islamic Market U.S. Index
DJMI	Dow Jones Islamic Market Index
ER	Exchange Rate
FTSE100	The Financial Times-Stock Exchange 100 Index
GDP	Gross Domestic Products
GP	Gold Price
HSBC	Hong Kong Shanghai Banking Corporation
IEF	Islamic Equity Funds
IETF	Islamic Exchange Traded Funds
IFI	Islamic Financial Industry
IFS	Islamic Financial System
IFSB	Islamic Financial Services Board
IIFM	International Islamic Financial Market
IIRA	International Islamic Rating Agency
ISM	Islamic stock market
ISRA	International Shariah Research Academy
JCI	Jakarta Composite Index
JII	Jakarta Islamic Index
LMC	Liquidity Management Center
M3	Money Supply
NIKKEI225	Nikkei225 Stock Average Index
OIC	Organization of Islamic Co-operation
OP	Oil Price
REIT	Islamic Real Estate Investment Trust
S&P/TSX	Canadian Composite Index
S&PCOMP	S&P500 Composite Index

SR	Sharpe-Ratio
TR	Total Return
VaR	Value-at-Risk
VAR	Vector Auto Regression

INTRODUCTION

The Islamic financial services industry has witnessed a considerable growth in the last few decades, both in number of products and volume of trade, which can be attributed to the increasing demand in Islamic financial services and its applications, which have in playing a vital role in the various parts of economic development. Since early '70s, many Islamic financial markets have significantly been established in many parts of the worlds; nowadays has attracted a reasonable attention as a sustainable alternative to conventional financial services and tools that can be combined with the increased demand for investment in accordance with ethical investment principles. It is expected that the average growth of the Islamic financial industry (IFI) will continue to be 15% annually in the coming decade.

The Islamic capital markets offer a reliable source of funds for long term financial investments, development projects, business and capital expansion. The Islamic markets also plays a crucial role in ensuring stability of the whole financial system through contributing to a robust and flexible Islamic financial system in facing the financial shocks. Hence, Islamic stock market has become an important part of the international stock market; which has now evolved to become an integral part of international financial system. Even though the Islamic financial markets are still small and growing compared to the conventional counterparts, nevertheless, it has continued to attract great attention of many researchers and investors from different countries.

Since the existence of the Islamic financial service industries decades ago, the industries have passed through different stages of growth and have won the recognition of the global financial authorities and have provided several sophisticated financial services which complies with the Islamic Shariah jurisprudence. Such development of various Islamic financial services industry has encouraged some Muslim and non-Muslim countries to pay considerable attention to Islamic financial markets and caused them to open branches of these industries in both their local and global stock exchanges such as Dow Jones Islamic Market Index and FTSE Global Islamic Index Indexes.

Almajali, et al., (2012, p.286) affirmed that the subject of financial performance has been the primary concern of business practitioners in many types of investment organizations since financial performance has implications on organization's health and survival. Thus, there is no doubt that the performance of stock markets is of significant importance to institutions as well as to investors who expect positive returns on their investment,

Indeed, a better understanding of profitability of stock market indices requires specific knowledge about the performance and the determinants. In addition, the performance evaluation of the Islamic indices is especially important today because of the globalization effects. The globalization phenomenon has put Islamic investment in fierce competition with traditional ones in well-developed financial markets.

The economic theory and the applied studies clearly show that there is a relation between the performance of the stock markets and many economic factors. However, there were different findings about the factors, which affected the market performance, that have been reported in several studies. Therefore, this study seeks to answer the following questions: what are the basic factors that determine the performance of the stock markets? And is there a difference between the performance determinants of Islamic stock markets and conventional stock markets? This research is intended to answer these questions by identifying the main determinants of the stock market performance in both the Islamic stock markets (ISM) and their conventional stock markets (CSM) counterpart. Hence, this research is examining the effects of some factors, namely, interest rate, exchange rate, consumer price index, GDP, money supply, price of oil and price of gold. The sample for this research are composed of 10 indices which are made up of two groups, both in conventional and Islamic stock markets from 5 countries, namely: USA, UK, Canada, Japan, and Indonesia.

The focus of this study is not only on the test of the determinants of stock market performance but also on whether if there is a co-movement relationship between Islamic stock market and conventional stock market. The integration between Islamic stock markets and their conventional counterparts, therefore; evaluate the Islamic stock market performance (comparative analysis with the conventional stock market).

The literature review reveals that most of the studies are dedicated to a single index, which might not show the actual image of the Islamic stock markets over the globe. In order to overcome this shortage, this study is contributing to the present literature through studying a group of Islamic and conventional indices. This study is motivated by two factors; the first one is to investigate whether the Islamic indices offer diversification or otherwise. The second is to provide an evidence whether investing in the Islamic stock markets is advantageous or not, compared with their local counterparts.

This thesis content is organized in six sections including the introduction and conclusion sections. The second section covers the concept of Islamic finance, the historical background of Islamic finance, essence, and principles. Section 3 highlights Islamic financial institutions and products. Section 4 provides some details about Islamic capital markets and its instruments as well as the most famous international Islamic financial institutions, while Section 5 focuses on the performance of financial markets. Then, the analytical part of the study has three axes: a comparative study between the performance of Islamic and conventional stocks markets, the co-movement relationship between the Islamic and conventional stock markets, and finally, the determinants of the performance of Islamic and conventional stock markets.

1. ISLAMIC FINANCE: A GENERAL PERSPECTIVE

The Islamic financial system has become an important part of the general Islamic system that has interest in providing the goods and services coupled with the distribution of resources and wealth by employing fair strategies (Ali, 2008, p.2). Moreover, it considers the Islamic finance as a crucial part of the Islamic system that supports the economic activities and has helped in achieving the social relationship according to the Islamic principles.

The Islamic finance is a rapidly developing sector of the financial industry in the Islamic world. It is not limited to Islamic countries alone, but it also spreads across the Muslim community; the generality of Muslims population living in a specific area of any country. Abd Karim et. al., (2010, p.i) argued that the development of Islamic finance is mostly due to the increase in the Muslim community all over the world in view of the fact that Islamic teachings are not restricted to the ritual-oriented relationship between the man and his God but also include the role of the human as the obedient servant of God on earth.

The growth of the Islamic financial institutions and industries has drawn lots of attention because of its increasing development, especially in the global arena and it has become the main financial option for most Muslim-majority countries. Rizvi (2013)[1] stated that the global banks like HSBC, Deutsche Bank, Standard Chartered and Citibank have their investment banks serving as the leading arrangers on *Sukuk* (Islamic bonds) issuances around the world. Moreover, many international institutions have either Islamic departments or Islamic banking, alongside their institutions. In addition to that, many of the world's stock exchanges such as Dow Jones and Financial Times have created special windows to deal with the Islamic shares that are subject to the standards of Islamic law. It should be stressed that the Islamic financial system is not restrained to the banks, but also includes capital markets and other types of financial mediation.

[1] https://www.khaleejtimes.com/business/local/islamic-finance-gains-popularity-across-the-globe (21/03/2015 16:17)

1.1. The Meaning of Islamic Finance

The Islamic finance industry has evolved from a “fringe industry” that catered for specific banking requirements of the Muslim community to a global industry including banking, insurance, and capital market. Thus, the Islamic financial landscape has now been dramatically transformed with more diverse participants with an encompassing range of financial products and services.

All Islamic-economy activities are related to either “interest-free” or “Islamic finance”. To label, the Islamic financial system as interest-free is not enough to explain the total system (Elasrag, 2010, p.9). Many definitions in literature for the Islamic finance revolve around matching financial transactions with the teachings of Islamic law. For example, Gait and Worthington, (2007a, p.2) defines the Islamic finance as *“a financial service or product principally implemented to comply with the main tenets of Sharia (or Islamic law)”*, while Warde (2000, p.20) defines the Islamic financial institutions thus: *“Islamic financial institutions are institutions that based their objectives and operations, on Quran’s principles (principles of the Muslims’ Holy Book)*”. In other words, we can state that the Islamic finance is an agreement with the aim of organizing the economic activity, which is not limited to that but also tries to adjust the boundaries and relationship through Shariah guidance.

1.2. Historical Background

The Islamic finance history began in the 8th century with the emergence of Islam and spreads quickly to many regions of the globe. With the extension of Islam over many areas and the development of trading relationship around the Mediterranean zones from the 10th century, the Muslim traders had a significant role in the establishment of banking operations, especially in the Italian peninsula through the middle ages (Moisseron, et.al., 2014). During the period of colonialism, the growing European influence caused the adoption of European-style financial organizations and products in most of the Islamic countries. Later on, Islamic countries began to re-examining their financial service industries and also begin to establish financial systems that is in accordance with the Shariah principles towards the end of 1960s. This eventually opened the door for modern Islamic finance (Ali, 2005, p.380).

Kahf (2003, p.26) stated that the Islamic economics cannot be perceived without reference to the main system of economics, but this view disregards the aim of the Islamic economics in the light of their values, rules, and institutions. The principles of Islamic economic paradigm activate the aspirations of the Islamic investors who aim at making human-centric economics.

Asutay (2007, p.169) opined that the modern usage of Islamic economics has emerged in the 1970s as a critique of both the capitalist economic model of development and the communist recourse allocation system, and that, according to the founders, the failure of the economic development is as a result of the economic strategies of capitalism that do not consider the necessity of well-being in the society. Therefore, the Islamic finance aimed to ameliorate an economic system that will fully concentrates on a strategy designed to serve the well-being of humans.

Furthermore, Nagaoka (2012, p.118) and Ali (2005, p.239) also asserted the aforementioned perceptions and confirmed that the Islamic system of economy is extremely different from the interest-based economy. However, the Islamic system is not aloof from the pre-modern era finance; the similarity between them is very clear. Following the events of the economic history, we can conclude that the Islamic finance is neither new idea nor a persona-non-grata in the history of economics.

Wahab et al. (2014, p.18) as well mentioned that the first two Islamic financial institutions are Mit and Ghamr in Egypt and another which was established in Karachi in 1963. Establishing these two banking foundations and their progress contributed to the rise of Dubai Islamic Bank in 1965. During the 1970s, the popularity of the Islamic banking services increased significantly and to follow the streams of Islamic Banking and investment in these Islamic Banks, a lot of global financial societies, such as Citibank, Goldman Sachs, HSBC, BNP-Paribas, and Union Bank of Switzerland (UBS) have launched services and products in harmony with the Islamic law.

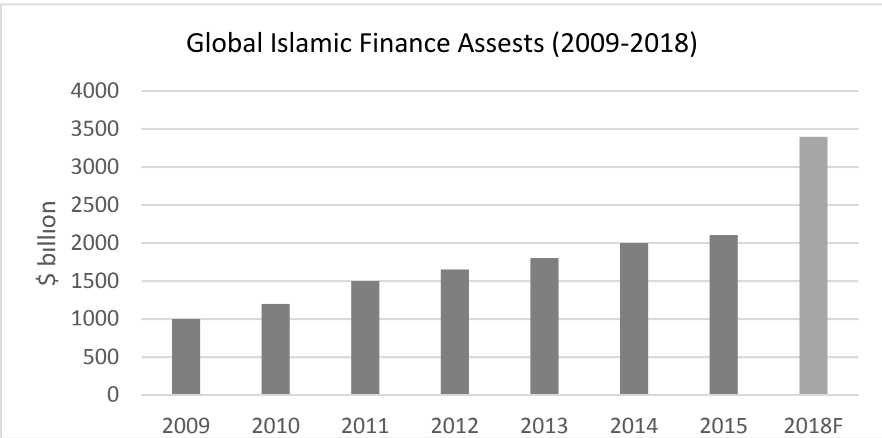
In 1996, the number of Islamic financial institutions has grown to 166 institutions in more than 35 Muslim and non-Muslim countries (Wahab, et.al., 2014, p.16), while in 2015, this number has grown in size and the geographic coverage where more than 600 institutions that hold Shariah assets operate in more than 78 countries (Hussain, et. al., 2015, p.5).

1.3. The Size of the Islamic Finance

The Islamic Financial Services Industry Stability Report (2015) pointed that the global Islamic finance industry reached an overall value of $1.88 Trillion with expectations to be $3.4 Trillion of market size by the end of the year 2018 as shown in figure1. On the other hand, about 75 percent of the industries concentrated in the Middle East North America (MENA) region (excluding Iran), where GCC countries accounted for up to 96 percent of the total assets. However, the Islamic financial assets still represent 1.4% of the estimated global financial market of $132 Trillion.

In terms of growth, the Islamic finance industry, including Islamic capital markets, has grew on average to about 17.5 percent since the onset of the global financial crisis in 2008 (Ernst and Young, 2015). The bulk of growth occurred in countries outside the MENA region, countries with more Muslim populations, but most of the industry's growth in the MENA region were led by GCC countries. In particular, the Islamic finance industry has on average grew by 43 percent in Indonesia, and by 19 percent in Turkey between 2009 to 2013 (as shown in figure 2).

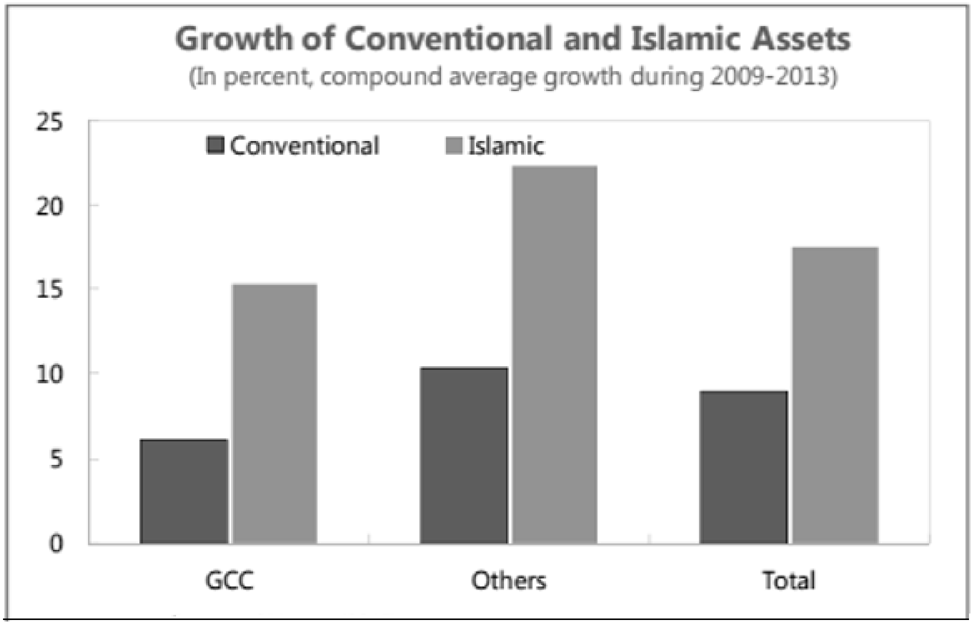
Figure 1: Global Islamic finance assets from 2009 to 2018



Source: www.islamicfinance.com[2]

[2] https://www.islamicfinance.com/2016/12/size-islamic-finance-market-vs-conventional-finance/ (29/09/2016 19:57)

Figure 2: Growth of Conventional and Islamic Assets



Source**:** Ernst and Young, 2015.

Note: Countries include Malaysia, Pakistan, Indonesia Bahrain, Qatar, Saudi Arabia, Turkey, Egypt and United Arab Emirates

There are many factors that may have played a crucial role in the growth and development of the Islamic finance such as[3]:

- The number of Muslims in the modern world is approximately 2 billion, which represents 27% of 7.3 billion of the world population.
- The pool of the Islamic financial institutions is expanding with the broadening of the range of Islamic financial professional services available worldwide.
- The high demand from a huge number of immigrant and non-immigrant Muslims for Islamic financial transactions and services.
- The growing oil wealth in the Gulf countries, which requires suitable investments.
- The competitiveness of numerous Islamic financial products which are attracting Muslim and non-Muslim investors.

[3] http://www.muslimpopulation.com/ (09/10/2016 22:00)

- The rise of the international Islamic organizations that encourage the Islamic market has supported the quick development in the IFM. These organizations includes the Islamic Financial Services Board (IFSB), the International Islamic Financial Market (IIFM) and the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI).

1.4. Primary Sources of Shariah

The Islamic financial industry sets out to achieve the same goals of conventional financial industries, within the provision of Islamic restrictions. It aims at launching a just system that includes finance and business. The Islamic financial system emphasizes that money and wealth should be used in a productive manner. According to the teachings of Islam, the money should be used productively and the wealth should be obtained from profit-and-loss sharing arrangements (Abdul-Qadir and Maishanu, 2013).

The Islamic financial system derives its principles from *Shariah* (the Islamic law) . *Shariah* literally means "*the way to a watering place*" (Perry, 2006, p.357). It is the path that must be followed by Muslims, and it should govern the man in all of his attitudes to realize the Divine Will. It includes all forms of spiritual, mental and physical behaviors (Laldin, 2011, p.33). In the same manner, Warde (2000, p.12) stated that *Shariah*, in the eyes of certain scholars, is a broader term not designating law per se, but designating good order. It is the laws that are contained in or derived from the Qur'an and the Sunnah, and it reflects all the aspects of the Islamic faith, including beliefs and practices. The sources of the *Shariah* law are *the Quran*, *Hadith*, *Ijma*, *Ijtihad*, and *Qiyas*. *Quran* is the most important source of *Shariah* which is the message of Allah that was inspired to the Noble Prophet Muhammad (peace and blessings of Allaah be upon him) to spread to mankind. The message of Quran is universal and eternal (Laldin, 2011, p.34). The second source is *Hadith*; "*a piece of information, such as narrative or story, that constitutes a record of the Sunnah (practices and doings) of the Noble Prophet (peace and blessings of Allaah be upon him), handed down from generation to generation and which has become the rules of faith and practice of Muslims in general*" (Kunhibava and Rachagan, 2002, p.544). The third one is *Ijma* which is a consensus or an agreement among knowledgeable religious scholars of Islam on an issue or concept that is not mentioned or well explained in the *Quran* or *Hadith (*Gait and Worthington, 2007p, p.6). *Ijtihad* is the fourth source which represents the reasoning ability of the knowledgeable Islamic religious scholars on applying the Islamic rulings on some issue or concern not mentioned in the Quran or Hadith or on cases that needs figuring out the *Shariah* decision on them. Finally, the *qiyas* is the analogy used by the jurists to compare between a new case and similar cases in the Quran or hadith to reach a decisive agreement *(*Gait and Worthington, 2007p, p.8). These sources are considered as the basis for the Islamic law and jurisprudence. Thus, they are resorted to for all transactions, including financial transactions, or what is known as financial transactions in accordance with Islamic rulings.

1.5. Essence of the Islamic Finance

What distinguishes the Islamic finance from the conventional forms is that it has a number of important *Shariah* principles and prohibitions that are relevant to finance and commercial transactions. *Shariah* principles play an important role in organizing the economy and finance. Also, these principles are clear and vivid, and they guarantee the rights of others. Strictly speaking, the principles should be ethically so as to provide mankind with relief.

The cogent motivation to the economic transactions, which should be compatible with the Islamic principles, is the Islamic ideology that concentrates on making a fair socio-economic system. This concept makes clearer difference between the Islamic finance and conventional finance.

Siddiqi (2000, p.65) explains that the main advantage of the Islamic finance includes three ideas; it keeps the financial sector in harmony with the real sector, it is not exposed to gambling and it is global. The first two ideas make the Islamic finance more stable. The third one makes the Islamic Finance attainable by all people, unlike the conventional system that is inclusive in the west only.

According to Ali (2008, p.121), the Islamic economic system has a set of principles. Clearly, Islamic economy is controlled by the ethical and moral values of Islam; therefore, the activities include the values of cooperation and responsibility. In addition, the principle of cooperation determines the benefits for both parties without any exceptions; if one party wins at the expense of the other party, that will not be accepted (Elasrag, 2011, p.7). As a result, Islam inhibits monopolistic dealings, usury, and exploitation, but the economic exchange that permits the two parties to win is approved, and this includes any activity which is required for economic prosperity. For instance, performance-based arrangements are encouraged in Islam.

Elasrag, (2011, p.9) stated that the Islamic finance depends on the proceedings and the risk sharing and affirms that the profits should be compatible with the risk sharing. Accordingly, the risk related to the investment activities and the financial transactions should be combined with each other.

Ryu, et.al. (2012, p.52) added that the aforementioned cooperation is a distinctive part in the Islamic finance, and it prepares a systematic mechanism to make the Islamic finance sound and stable. The other value is responsibility, which means that every investor has the right to take the proceeds of the investments, according to efforts that they exerted; therefore, gambling and lotteries are not allowed. Strictly speaking, the gains of gambling are from pure luck, not on contribution or efforts. The wealth is distributed unfairly among the investors, so bad feelings spread among them and Islam forbids this kind of practice.

According to Iqbal (2007, p.3), the conventional system mainly focuses on the economic dimensions of the transactions, but the Islamic system focuses on the ethical dimensions of the transactions to enrich the concepts of equality among the members of society. Islamic system is only realized in an Islamic environment of work ethic, wealth distribution, social and economic justice, and the role of the state. Another feature of Islamic system, which Islam does not allow is paying or taking the pre-determined return, so this stops the interests and the debt-based instruments. The Islamic system encourages the risk-sharing, the entrepreneurship and the holiness of contracts between the two sides and "discourages speculative behavior".

In the same manner, Ali (2008, p.3) mentioned that Islamic ideological and legal dimensions are practical and determined by the *Shariah* principles, and the Islamic standards explain the economic and social system that fixes the business and financial relations supported by principles of contracts, rights, and obligations of the parties to the contractual arrangements.

1.6. The Main Principles of Islamic Finance

The Islamic finance principles have been widely studied by many, including Muslim and non-Muslim scholars alike, such as Metwally (1997), Wilson (2006), Iqbal and Molyneux (2005), Zaher and Hassan (2001), Al-Jarhi and Iqbal (2001),El-Gamal(2000), Dar and Presley (1999), Gafoor (2000), Moore (1997), and Kahf and Khan, (1992).

Most researchers have suggested that the principles of Islamic *Shariah* law revolve around: (i) the prohibition of *Riba* (interest or usury), (ii) the prohibition of *Gharar* (Uncertainty), (iii) prohibition of *Maysir* (gambling); (iv) prohibition of dealing in forbidden commodities, (v) risk-sharing, (vi) materiality, a financial transaction should have a 'material finality', which is a link to a real economic transaction, and (vii) justice, a financial transaction should not cause the exploitation of any party to the transaction.

1.6.1 The Prohibition of Taking or Receiving Interest

Metwally (1997, p.944) argued that to prohibit the interest is the most cardinal pillar of the Islamic economy. The Holy Quran and the Sunnah, the sources of *Shariah*, do not permit any rates of interest or the predetermined payment if they are either above or under the original amount. Ika and Abdullah (2011) also stated that the prohibition of interest (*Riba*) is mentioned obviously in Quran (2:278-279). *Riba* and usury are the same, but the Islamic scholars link *Riba* with interest. Some Islamic scholars say that the economic problems appear when there is an interest because the investors cannot pay the debt. Also, the countries start to wage war against one another because of increasing debts and interests, hence, it will be wise and honorable for the governments to seek alternative ways around such possible inclining occurrence. (Bergstra and Middelburg, 2011, p.3)

The dangers of *Riba* adversely affect the borrowers and lenders. Iqbal and Molyneux (2005, p. 23) argued that the borrower gives the original debt and pays the charge on it which are charges on the capital and the use of it. On the other hand, it is unfair to the lender, because sometimes the rate of inflation is higher than the rate of interest, and that means the lender will experience loss. In fact, there is no profit from lending the money. However, the principles of the Islamic finance necessitate that any return on funds achieved by the lender must be earned and derived from a commercial risk taken by the lender.

1.6.2 Prohibition of *Gharar* (uncertainty)

Gharar literally means trickery, risk, fraud, doubt or hazard which may lead to damage or loss. Economically speaking, *Gharar* in Islam means any transaction of probable objects which we are not sure about its existence or description because of lack of information and knowledge of the ultimate outcome of the contract or the nature and quality of the subject matter. More precisely, Islam urges full disclosure of information and the removal of any asymmetrical information in commercial contracts (Fazli and Mian, 2016).

According to ISO GUIDE (2009) (as cited in Lambak and Tahir, 2013, p.262), "*the risk is defined as the combination of the probability of an event and its consequences*". Both definitions indicate that there is an element of uncertainty because the needed information is not enough. The *Gharar* must be examined according to the Islamic commercial law during the commercial transactions. When defined, it will be forbidden. Notwithstanding that, if there is a necessity, the scholars permit *gharar*, but it should be not excessive.

Ahmad and Marhaini (2008, p.65) stated that the *gharar* which is banned in the Islamic economy is the excessive one, and the uncertainties are present after marginalizing the natural ones. Ahmad and Marhaini (2008) asserted that this uncertainty will make the *gharar* similar to the gambling that depends on the chances, not the efforts, and guarantee the profits for only one party.

1.6.3 Prohibition of *Maysir* (Gambling)

Al-Saati (2003, p.6) explains that *Maysir* is like gambling or any economic activities of chance (including lotteries, lotto, casino-type games and betting on the outcomes of animal races). All of these are alike in gaining the return of deliberate risk-taking. M. Iqbal and Molyneux (2005, p.14) explain the reason for preventing the chance games and argue that these types of games include high risk, some people earn much, but others suffer from the bankruptcy. Clearly, these games do not provide the society with wealth, and they cause financial and social dilemmas. The aforementioned reasons prove that *maysir* is unnecessary and forbidden.

1.6.4 Prohibition of Using or Dealing in Forbidden Commodities

The aim of *Shariah* is to encourage the ethical investments without any bad effects on the citizens. *Shariah* does not approve any economic activity that is implemented in the forbidden fields, such as casinos, tobacco companies, wineries, sex-business, and trafficking. The individuals and the institutions should not invest in such immoral sectors (Gait and Worthington, 2007, p. 7).

1.6.5 Profits and Loss Sharing (Risk Sharing)

The Islamic finance promotes the borrowers and the lenders to invest their capital fairly without any treachery. Therefore, the borrowers and the lenders share the same profits and losses from the investment. This is achieved when the risk of investment is distributed and invested capital is shared between both parties. The risk sharing, without fixed interest, is available for both investors and depositors, which is granted by Islamic financial service industry. Obviously, any risk in businesses and proceeds within the performance of the capital in the enterprise is considered Islamic (Zaher and Kabir, 2001, p. 159).

According to the Islamic financial system, the process of sharing the profits conducted by the owner of the capital and the entrepreneur is similar to *Mudarabah*. In this process, the owner of the capital gives the entrepreneur capital who in turn employs his/her experiences and efforts to run the business as a partner. However, only sharing in the profits.

If there is a loss, the owner loses the capital and the entrepreneur loses the time and efforts. Unlike the *mudarabah*, *musharakah* forces the owners of the capital and entrepreneur to bear the loss and the profits. For example, the partners invest different percentages of the capital in the enterprise, and the profits and the loss are shared according to the invested capital rates (Gait and Worthington, 2007, p.27).

1.7. **Islamic Finance, Conventional Finance and Ethical Finance**

The Islamic Financial Institutions (IFIs) operate where the conventional institutions work, and they do the same functions of any financial institutions. Hanif (2010, p.4) stated that IFIs render all the services required for managing the economy easily. However, there is a big difference between the Islamic and the conventional systems, and the main difference between them is the Interest accumulation. According to the Association of Islamic Banking Institutions, interest does not complies with the Islamic principles, and *Shariah* prohibits it.[4] Van Greuning and Iqbal, (2008, p.14) explained the reasons of the prohibition of Interest and emphasized that the Interest-based financial system is humiliating for the humans, and only cares about the rich and neglects the poor, so thus, the financial system has fallen asunder. The Islamic financial system is not only interest-free but also has risk-sharing, property-rights, rights and duties of individual and society.

Another feature of Islamic financial system is in lending and borrowing money, which is structured in such a way that it does not create problem or debt for either the lender or the borrower. Ryu et al., (2012) pointed out that the debt is created by selling and leasing the real assets, and the debt cannot be transferred to others. The Islamic financial system is very powerful, and that power is taken from the practice of *Shariah* law which stresses that the financial transactions should be guided by the productive economic activity. Therefore, the exposure to the risks will be diminished (Ryu, et.al., 2012, p. 48).

Wahab et al., (2014, p.5) mentioned that the conventional system lacks stability because of the following reasons. First, the system heavily depends on interest and debt. Second, it employs the credit multiplier to create the unnecessary debt and leveraging. All these reasons lead to the periodic financial crises and massive bailout.

The ethical investment has many definitions, but the essence of the ethics is not arguable. The main aim of the ethical investment is not only to achieve monetary rewards but also to tries to achieve non-pecuniary rewards such as social and economic environments. The policy of ethical investment has a set of pre-determined ethical criterion which will be used in

[4] http://www.islamic-banking.com/islamic_banking.aspx (23/11/2016 16:56)

screening and stock selection process to determine the admissibility of a particular asset or stock into its portfolio with the help of an independent ethics advisory board.

Cullis, et.al. (1992, p.4) defined the ethical investment as a combination of the ethical and financial criteria used in making investment decisions, while Sparkes (2008, p.17) stated that Ethical investment is an "*Equity portfolios whose investment objectives combine social, environmental and financial goals*". Murray (2000) in Michelson, et al., (2004, p.1) also defines ethical investment as an "*Investment process that considers the social and environmental consequences of investments, both positive and negative, within the context of rigorous financial analysis*". The most suitable definition of Ethical Investment was stated by Cowton (2004, p.256) which he defined as a "*Set of approaches which include social or ethical goals or constraints in addition to more conventional financial criteria in decisions over whether to acquire, hold or dispose of a particular asset, particularly publicly traded shares*".

Hussein (2004, p.25) pointed out that Ethical investment is still controversial. The advocates of ethical investment believe that establishing ethical investment in the financial and ethical standard environment leads to social and economic benefits. Moreover, the ethical investors ascertain that their investments are consistent with their personal values, and they raise the awareness of the existence of the firms that do not comply with ethical values and force these firms to adopt such values.

The utmost concern in the Islamic financial system is the conformity to the norms of Islamic ethics. All transactions in the Islamic system must be governed by norms of Islamic ethics as enunciated by the *Shariah* (Zameer and Javed, 2013, p.99). Since *Shariah* imposes additional restrictions on finance matters, including ethical concepts in the use of money and capital, the relationship between risk and profit, and the social responsibilities of financial institutions, has features that reduced the risk of asymmetric information and moral hazard. For example, business activities, which go along with the rules of Islamic law, qualify for investment, but business dealing with gambling, pornography and casinos will be prohibited (Onyango, 2012,p.119).

Elasrag (2011, p.3) argued that the Islamic finance is the only example of a financial system that is directly based on ethical precepts of a major religion, providing not only investment guidelines, but also a set of unique investment and financing products, while DeLorenzo (2000, p.7) stated that the aim of the Islamic finance is to help specific industries by positively affecting the real economy and adding values to it. Furthermore, the financial portfolio of the Muslim investors has consistent gains and possibilities of the capital growth in approved transactions. Obviously, the investment in Islamic *Shariah* is low-debt, not financial, and social-ethical investment, and it has many modern technical terms, such as ethical investing", "green investing", "faith investing" and "socially responsible investing". On the other hand, Ayub, (2011, p.21) stated that the fundamental features of Islamic economics and finance are socio-economic and distributive justice. It also has a comprehensive system of ethics and moral values. It does not allow the destruction of output, for instance, by dumping into the oceans or burning to force up or to maintain prices fictitiously at a higher level. Under the effective supervision of the government, markets can function freely under a competitive price mechanism, transparency, and disclosures, and they subject to the condition that they are not distorted by the influential and stronger segments of a society.

Hussein (2004, p.26) suggested that Islamic funds, unlike the other ethical funds, exclude specific sectors and do not operate in the fixed income market, and they do not allow the receipt and payment of interest, while Ayub (2007, p.12) added that within this overall framework, individuals have the right of ownership and freedom of enterprise, and they can get a return or profit by creating additional value and sharing gains and losses. The State has to undertake an overseeing role so that a closer linkage between the real economy and finance can contribute to the growth and evenly shared income.

According to Alhabshi (1994, p.5) and Wilson (1997, p. 1326), some norms and ethics should manage Islamic capital markets (ICM). Therefore, every transaction should be conducted with the guidance and norms of Islamic ethics determined by the Islamic law or *Shariah*. Wilson (1997, p.1325) mentioned that every transaction should be compatible with the Islamic standards. The rules of *Shariah* are derived from the Holy Qur'an and Hadiths. Definitely, there is freedom in the fair Islamic transactions, but this freedom is restricted by Islamic teachings; for example, usury (*riba*), deception (*gharar*), alcohol (*khamr*) and gambling (*maysir*) are prohibited (Obaidullah, 2005, p.29). The concept of freedom in the Islamic financial system is not similar to the freedom of the conventional system and the provision of fairness and justice is found only in the ICM transactions. Obaidullah, (2005, p.4) pointed out that *Shariah* laws protect the pastries of transactions from the "misrepresentation, unbalanced information, and unequal bargaining power". Dusuki (2010, p.205) argued that the restrictions the Islamic *Shariah* imposes on the financial transactions are meant to protect the parties of investment and also to provide a good environment for the market participants.

Table 1: Comparison of conventional, ethical and Islamic investment

	Conventional Investment	Ethical Investment	Islamic Investment
Main purpose of investment	maximize financial return	financial return with ethical incentive	financial return as long as compatible with *Shariah*
Investment policy	there is no any particular indication to socially oriented concern.	is guided by a obviously declared socially responsible and ethically oriented	is governed by the Islamic principles.
Securities selection process	based on the securities' features that appropriate the objectives of the investment without regards to any specific socially oriented considerations	ethical criteria is clearly specified that will operate as the filtering tool in securities selection process	*The Shariah* guidelines are clearly specified that will operate as the filtering tool in securities selection process
Asset universe	unlimited. conventional portfolio can contain all securities.	limited. Only securities that match the predetermined ethical standards will be selected.	limited. Only securities that match the predetermined Islamic principles compliant will be selected.
Investment support services	only investment research support services is required to search for the best securities to invest.	requires the ethical board to screen and research team to search for potential investment and monitor the performance of fund.	requires *Shariah* advisory board to make decision on securities admissibility and research team to search for potential investment and monitor the performance of fund.
Type of investors	usually investors who prefers more profit and low risk	usually ethically-concerned or religious investors with preferring more profit and low risk.	religious or ethically concerned investors.

Source: Abd –Karim (2010)

Hussein (2004, p.27) stated that despite the similarity issues of screening between the Islamic finance and ethical finance, Islamic indices employ different methods to screen investment, unlike other ethical indices in order to stand out from them. And he added that the justice and fairness are necessary for the revival of Islamic financial services and ICM. Therefore, the participants of ICM get secured and have their rights and duties. That principle will make the operations in the markets move freely and smoothly without cheating or any negative demeanor. Table 1 summarizes the similarities and differences amongst the conventional, ethical and the Islamic investment.

1.8. The Islamic Finance Industry Challenges

The regulatory and supervisory authorities have faced many challenges because of the development of the Islamic financial services industry, such as understanding the underlying risks in the products and transactions of these institutions, their influence on the stability and flexibility of financial frameworks in which these organizations operate, as well as the protection of their customers (IFSB, 2015).

Several challenges can be identified in the development of Islamic finance. Among these are, limited capital size and liquidity, conflicts between Islamic scholar, shortage of qualified experts and gap between theory and practice.

1.8.1 Capital Size and Liquidity

The average size of the assets of Islamic financial institutions (IFIs) is not as big as the assets of the conventional financial institutions despite the rapid growth of the Islamic financial institutions. It is clear that the assets of the Islamic financial institution represent 1% of the global financial market. To put in context the size of the Islamic finance industry, it is approximately equal to the size of the balance sheet of HSBC as of 2014.[5]

According to Al-Omar and Abdel-Haq (1996, p.9), the capital of IFIs is limited in comparison to the total capital of the financial institutions, and this has led to being marginally recognize by the central banks of IFIs which are obliged to go along with non-Islamic rules.

[5] https://www.islamicfinance.com/2014/12/size-islamic-finance-market-vs-conventional-finance retrieved on (22-9-2015 23:05)

In this context, Iqbal (2008, p.99) pointed that several studies showed that Islamic financial instruments encounter many obstacles; one of these obstacles is the limitation of Islamic financial instruments, hence, Islamic financial instruments should expand the array of financial services that depend on the financial engineering on both assets and liabilities side in order to increase the group of financial instruments that will help the IFIs to develop liquidity and to achieve good portfolio and risk management opportunities for themselves and the clients.

The largest IFI sector is banking sector. The Islamic banks are working with limited short-term traditional instruments, and the products are rare for medium to long-term maturities. Ahmad (2010, p.2) indicated that the major problem IFIs have encountered is the lack of short-term investment avenues. The conventional interest-based sovereign debt instruments such as T-bills and Investment Bonds are not good resorts for IFIs' investments; therefore, the short-term liquidity management has been considered as a real problem for IFIs.

Iqbal (2007, p.3) added that the reason of the shortcomings is the shortage of markets that sell, trade, and negotiate financial assets of the bank. "There are no revenues for securitizing dormant assets and taking them off the balance sheet." From now on, it is obvious that the long-term and sustainable growth of the Islamic financial markets will get benefit from the development of well-functioning secondary markets and the introduction of liquidity-enhancing and risk-sharing products.

1.8.2 Conflicts Between Islamic Scholars

The jurisprudential debate between Muslim scholars has recently taken part over the issue of the Islamic finance and the traditional finance. This large-scale jurisprudential dispute reached its peak with the emergence of doctrinal opinions that allow dealing with traditional banks. For example, there is a fundamental difference among some of them about the concept of bank interest. It is well known that interest is prohibited in Islam. However, since the emergence of modern banks, the scholars have differed whether to deal with them by interest or not, in accordance with adapting the transaction between the bank and its clients. The jurists considered the relation as a loan contract that brings benefit, so it is regarded as part of the prohibited interest. On the other hand, if the relationship is considered to be investment as the economists call it, it would be a corrupt speculative. A third group saw it as part of the new transactions and the relationship between customers and the bank is part of new contracts that are not named in Islamic jurisprudence, so they are halal. Waseem (2008, p.33) pointed out that the Islamic finance may be influenced by the different opinions of the Islamic scholars; perhaps one of them approves a transaction and the other may disapprove it according to Islamic laws.

1.8.3 Shortage of Qualified Experts

On the other hand, there are not enough qualified scientists with sufficient experience in Islamic finance. Ahmad (2010, p.3) and Iqbal (2007, p.4) asserted that the major problem of IFIs is the scarcity of the competent scholars and qualified managers in the subjects of the Islamic finance. They reported that despite the rapid development of the Islamic finance industry, the Islamic finance experts have not developed with the advancement of the Islamic finance; there are very few competent human resources in Islamic laws and contemporary economics and finance. Currently, some academic institutions introduced courses on the Islamic finance, but there are not high-qualified professors who can handle such courses properly.

1.8.4 Gap Between Theory and Practice

The practice of Islamic finance sometimes departs from its theory. Aljarhi (2013) argued that there is no Islamic economic model that is applied in the real world. Many countries have political systems raising the flag of Islamic economy; however, implementation is limited to some application such as zakah, murabaha, and Islamic finance while the majority of products have bad repute, without a coherent common denominator between them.

According to Iqbal (2007, p.5), "*Islamic institutions are supposed to be financial intermediaries "pass-through" where the profit or loss on the assets side is transferred to the investors (depositors)*". Also, IFIs support risk-sharing financial contracts that indirectly approve the equity-and-partnership-based financial instruments.

However, there is a gap between practice and theory in aspects and the risk-sharing instruments. Also, Iqbal (2007, p.6) stated that the assets composition of selected Islamic banks reveal “a bias towards trade-based, short-term and fixed-income-like instruments.” For instance, the share of *musharakah* and *mudarabah* is less than 10% which is different from the theory of asset structure.

Ahmad (2010) pointed out that Islamic banks were involved in the interest based money market because the conventional interest-based benchmark (KIBOR) is used as the base of pricing products of the Islamic finance. As a result, the clientele thought that there is no difference between the Islamic financial products and other conventional products because Islamic ones utilize the same interest based benchmark. Also, this argument has focused on establishing a different benchmark for investment pricing and which may perhaps be impossible because of the limited market.

2. INTERNATIONAL ISLAMIC FINANCIAL INSTITUTIONS AND BANKS

The Islamic financial industry is considered as a new entrant to the world of finance because its operating principles differ from the conventional finance modes of operation which are traditionally practiced in the West. It operates in compliance with the Islamic *Shariah*. This has raised the need for developing appropriate Islamic financial instruments (IFI) and services in this industry.

Financial innovation is an important phenomenon in any sector of the modern economy, and it raises the efficiency of financial intermediation. Also, it will lead to higher levels of competitive ability (Frame & White, 2004, p.119). There is an increasing demand for IFI to satisfy the needs of the Muslim clients according to the *Shariah*. Islamic institutions have been gearing up for further expansion by continuing to develop and refine the market innovative financial instruments, on both the assets and liabilities sides. In recent years, many new Islamic financial products have been developed and used increasingly in financial market activities, including equity, bond trading, Islamic insurance investment, reinsurance (*Takaful*), Islamic syndicated lending, investing in Islamic collective investment schemes, and other wealth and asset management products (El Qorchi, 2005,p.3). Thus, there is a need to improve the efficiency and effectiveness of Islamic finance operations through better utilization of resources and increasing the size of investments (Al-Salem, 2009).

2.1 International Islamic Financial Institutions

The growing of Islamic industry and its strong impact public policy have many issues. International organizations, policymakers, regulation authorities, and academic focus on the risks, environment of operation and the regulation system of Islamic Financial Institutions. There are many institutions established, such as the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), the International Islamic Rating Agency (IIRA), the Islamic Financial Services Board (IFSB), General Counsel for Islamic Banks and Financial Institutions (GCIBAFI), the International Islamic Financial Market (IIFM), and the Liquidity Management Center (LMC). It is noteworthy that these international Islamic financial organizations are making progress in directing the activities of all companies all over the world, which will be discussed in details in the following sub-sections.

2.1.1. AAOIFI

AAOIFI stands for Accounting and Auditing Organization for Islamic Financial Institutions; it was established in February 26, 1990, in order to provide the Islamic financial institutions and customers with the *Shariah* standards. The main goal of AAOIFI is to ensure that the participants follow the Islamic finance principles. The approved standards for the business functions are determined by the leadership and the regulatory body of AAOIFI. Such areas include accounting, transactions, governance, ethics, and investments.[6]

One of its most important achievements is the issuance of 98 standards in the fields of accounting, auditing, ethics and governance that the central banks and regulatory authorities adopted in many countries as guidelines or on a mandatory basis. Many institutional members that support AAOIFI include central banks, regulatory authorities, financial institutions, accounting and auditing firms, and law firms from more than 45 countries. Also, many prominent Islamic financial institutions around the world follow its standards which introduced an advanced degree of harmonization of international Islamic finance practices[7]

2.1.2. IIRA

The Islamic International Rating Agency (IIRA) was established in July 2005 to support and facilitate the development of IFM by determining and explaining related investments or credit risk and also providing an estimation of the risk profile of instruments and entities. The IIRA is the sole rating agency that provides Islamic capital markets and the Islamic banks in Muslim-majority countries with a rating vision that includes the capital instruments and especially Islamic financial products to the capital markets and banking system in the Islamic countries, and hence enriching the analytical experience in these markets.[8] IIRA's rating system includes the matchless characteristics of the Islamic finance

[6] http://aaoifi.com/?lang=en (24/12/2016 17:13)
[7] http://aaoifi.com/about-aaoifi/?lang=en (24/09/2017 15:17)
[8] http://iirating.com/corprofile.aspx (24/12/2016 18:04)

that adopt the quality perspective and which is the goal of IIRA that will develop the capital markets in countries where the IIRA is established. Clearly, multilateral development institutions, leading banks, other financial institutions, and rating agencies sponsor IIRA. The shareholders of IIRA are from eleven countries, which make up the primary marketing focus of IIRA, and it has a Board of Directors and independent Rating Committee [9]

2.1.3. IFSB

The Islamic Financial Services Board (IFSB) is an international standard-setting organization that encourages and enhances the stability and trustworthiness of the Islamic financial services by issuing international prudential standards and guiding principles for IFI (capital markets, banking, and insurance sectors) according to the confirmed principles. Furthermore, IFSB conducts researches, carries out the initiatives on the industry, and organizes seminars and conferences for industry stakeholders. Until April 2017; it has issued 19 standards about risk management, observation, Sukuk, solidarity and other subjects related to Islamic finance[10].

2.1.4. GCIBAFI

GCIBAFI stands for General Council for Islamic Banks and Financial Institutions; it was founded in 2001, and its head quarter is in Bahrain. Also, it is affiliated with the Organization of Islamic Cooperation (OIC). It represents the Islamic financial services internationally, promotes its function, and strengthens the relations among its members and with similar-in-interests' institutions. GCIBAFI now has about 120 members in more than 30 jurisdictions, and they represents market players, professional firms, international inter-governmental associations and industry associations. It is recognized as an essential element in the global construction of the Islamic finance.[11] GCIBAFI aims to support the Islamic financial services industry by representing and defending them in terms of regulatory, financial and economic policies that are in the general interest of its members and that foster the development of the Islamic financial services industry through the promotion of best practices. GCIBAFI focuses to achieve its strategic objectives in the following areas: 1)

[9] http://www.iirating.com/ (24/12/2016 18:12)
[10] http://www.ifsb.org/ (24/12/2106 14:11)
[11] http://www.cibafi.org (25/12/2016 19:23)

Professional Development, 2) Research and Publications, 3) Policy, Regulatory Advocacy and 4) Awareness and information sharing.[12]

2.1.5. IIFM

The International Islamic Financial Market (IIFM) is a standard-setting association for the Islamic finance industry. In general, it concentrates on standardization of Islamic financial contracts and product templates relating to the capital and money market, corporate finance and trade finance segments of the industry. IIFM was established in 2002 by a set of the Islamic Development Bank, Bank Indonesia, Autoriti Monetari Brunei Darussalam, Central Bank of Bahrain, Bank Negara Malaysia and Central Bank of Sudan as a neutral and non-profit foundation[13](IIFM is also supported as a member by some regulatory and government bodies like Dubai International Financial Centre, State Bank of Pakistan, National Bank of Kazakhstan, Indonesia Financial Services Authority, national and international financial organizations and other market participants. IIFM aims at presenting the best financial practices in the international markets and fulfilling the Islamic compliance through creating an efficient Islamic finance industry. In addition, it conducts many seminars and business workshops to develop this kind of industry.[14]

IIFM principal activities and current focus includes:

- Addressing the documentation and standardization needs of the industry in the areas of Capital & Money Market, Corporate Finance & Trade Finance
- Creating a global platform through bringing regulatory organizations, financial foundations, law firms, stock exchanges, industry institutions, infrastructure service providers and other market participants on a common platform through creating specific global working groups and committees.
- Ease unification, Shariah harmonization and legal reforms in Islamic financial markets.
- Hold consultative meetings, specialized events conferences, and workshops.

[12] http://www.cibafi.org (24/09/2017 21:33)
[13] http://www.iifm.net (25/2016 20:00)
[14] http://www.iifm.net (25/12/2016 20:45)

2.1.6. LMC

Liquidity Management Centre (LMC) is an Islamic bank for investment. It was founded in 2002 by the Central Bank of Bahrain which determines its regulations. Its purpose is to present Islamic economic solutions that will best develop the ICM. It helped in the establishment of geographically expansive Islamic inter-bank market that will assist the Islamic financial associations in dealing with the short-term liquidity. As a result, this will ensure facilitation of the progress of the Islamic banking sector. Moreover, LMC attracts various assets from different sources (from private and public sectors) in target Markets. These assets are securitized into readily transferable securities or structured into other innovative investment instruments. Furthermore, it is considered as a center of Islamic advisory services, including but not restricted to the scope of structured finance, corporate finance and project finance.[15]

2.2. Islamic Banking and Products

Islamic Financial products is also considered as intermediary between the surplus of saving and the deficit units. Notwithstanding that, interest is substituted by other financial instruments. It is clear that the conventional institutions depend on interest in their transactions, but the Islamic institutions avoid any instrument, interest, and benefit from other instruments in their intermediary activities.

The main difference between Islamic institutions and conventional ones is that the return of IFIs is achieved through the actual sharing in the profit/loss base and bearing the risks by taking liability in real business and investment activities. For example, Ayub (2007, p.186) argued that the Islamic banking deals with deposits on the profit/loss sharing basis and to a certain degree on the basis of *Wakalah* rather than service charges or fees of the agency. In the case of *Musharakah* or *Mudarabah* of assets, in the event of loss, the liability is taken up by the business owners and they bear the risk in trading activities as long as the assets remain in their ownership. In leasing case, the owners of assets buy the assets and then rent them, and they will accordingly accept the expenses and risks. That means that IFIs are acting as intermediaries since they are gathering savings from the investors in order to fund business, industry, and agriculture.

[15] http://www.lmcbahrain.com (25/12/2016 21:11)

There are also similarities between the conventional finance and the Islamic finance in terms of the financing products and instruments. Actually, the Islamic finance modifies the conventional financial instruments, and such modification is achieved by following the *Shariah* laws.

Several Islamic financial instruments have been introduced to meet the needs of potential investors and customers. Most of these instruments have been offered by Islamic banks. In the following sections, Islamic financial instruments, which are generally based on banking activities, will be discussed.

2.2.1. Islamic Banking

Banks, as financial institutions, play an important role in the modern economy. Banks can have an effect on the economic transactions, the income distribution, and the changes of prices. In addition to other functions, the banks primarily can make the savings available to the entrepreneurs and also present current account facilities, letters of guarantee, transfers of money, payments of utility bills, loans for borrowers, easy durables and investments.

Like conventional commercial banks, Islamic banks offers similar services, however, there are some disparities between Islamic and conventional counterparts in that Islamic banks share profit and loss with their customers, while the conventional banks practice contrary to this method.

In their definition of Islamic banking system, Salleh and Hassan (2004, p.143) stated that the Islamic banking depends on faith and Islamic *Shariah* to frame its policies. Also, the Islamic banks encourage the profit-sharing and forbid the interest in any of their economic activities. This definition demarcates the pillars of IFIs: orientating by Islamic *Shariah* through the board of Islamic scholars, which are called the "*Shariah* Supervisory Board" (SSB), and most significant in terms of concept of finance, the prevention of using of interest on borrowing and lending money.

Iqbal and Molyneux (2005, p.19) pointed out that Islamic banking went through many stages, so it should be "viewed as an evolving system." No one can doubt that there are many Muslim investors who want to run their transactions according to *Shariah* laws. Therefore, Islamic businesspersons and scholars have developed the financial institutions that provide Halal profits. However, Islamic banking is still in the phases of amelioration and development.

Islamic banking theory indicates that the liabilities of Islamic banks are limited to demand deposits, and they depend on the profit and loss sharing basis; therefore, they are guaranteed. When such Islamic banks are exposed to macroeconomic crises or specific banking crises, the investment depositors automatically encounter the same risks. These banks are less probably going to go bankrupt compared to the conventional banks. Thus, it can be said that an Islamic banking industry is relatively more stable than conventional one. On the other hand, to manage funds, the Islamic banks used two kinds of accounts. The first one is the investment accounts, which depend on contracts where the funds are managed on behalf of their providers. The second one is the current accounts in which the investment account is in a limited period (M. Khan, 1986).

According to Khan (1994, p13), Islamic Banking has been criticized for being risk-free profits and for the absence of recognizing the money-time value. However, defenders of the Islamic finance stated that the concept is not totally correct because, according to the modern economic theory and analysis, Islamic banking depends on the equity-based system, not the debt-based system of the conventional banking (Khan, 2000, p.628). IFIs provide the customers with an indefinite rate of profits, and in this case, the risks will be shared between investors and banks. Due to this system, Islamic banks can adapt the value of their assets and liabilities to the changes in the fair market value of the investment. Thus, the IFIs and the investors share the same risks and losses. On the contrary, the conventional banking system does not consider the changes in the fair market value of investments; it alone bears the loss, which is resulting in disequilibrium between the real value of assets and liabilities and ending with negative net worth of the bank (Haron, 2000, p.631). This is also confirmed by Liaqat et al., (2013, p.838) as they stated that the aim of banning interest and the necessity of the Islamic financial system are emphasized in the Islamic economic system, and the financial atmosphere is made by the values of the Islamic financial system among partners, intermediaries, lenders, and borrowers. The prohibition of pre-determined interest rate on loans forces IFIs to monitor the borrowers at a fair cost and to get the accurate information about the profit because the lenders might provide inexact information about the real profit (Diamond and Dybvig, 1983, p.401). As a result, the portfolios of IFIs are "concentrated in short-term, trade-related assets". The short-term financings have badly affected the investment, growth and economic development; this confirms the social commitment between the banks and the customers.

Islamic banking and Islamic products become very common not only between Muslims but also between non-Muslims all over the world. Generally speaking, the entire world starts to like Islamic banking more. (Ahmad, 2014, p.63). Sole (2007, p.9) explained that Islamic banking begins to appear in many conventional financial systems. It has expanded in many Muslim regions and non-Muslim areas such as Canada, UK, and Japan.

Islamic banking has risen dramatically in the last two decades despite the unconformity between the financial framework of IFIs and the business of the conventional markets. In 2008, the volume of Islamic banking, which is active in 50 countries, has achieved $951 billion (Hanif, 2011, p.161). While in 2015 this volume has risen to reach $1.5 trillion[16]. Middle East still represents 80% of Islamic banking, while 20% is distributed to the rest of the world. (See Table2)

Table 2: Islamic Finance Segments by Region

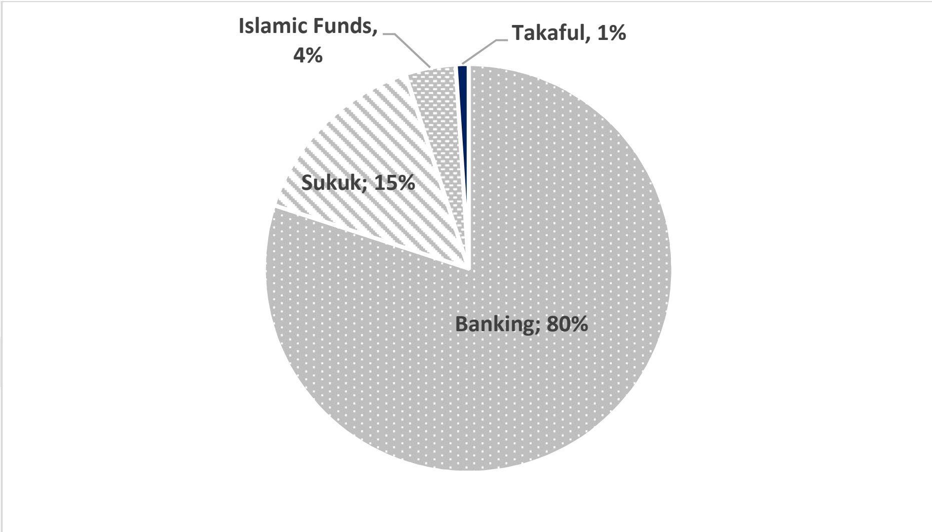
Region	Banking Assets	*Sukuk* Outstanding	Islamic Funds' Assets	*Takaful* Contributions
Asia	209.3	174.7	23.2	5.2
GCC	598.8	103.7	31.2	10.4
MENA (exc. GCC)	607.5	9.4	0.3	7.1
Sub-Saharan Africa	24.0	0.7	1.4	0.5
Others	56.9	2.1	15.2	-
Total	**1496.5**	**290.6**	**71.3**	**23.2**

Source: Islamic Financial Services Industry Stability Report 2016

[16] Islamic Financial services Industry Stability Report 2016 , p.7
http://www.ifsb.org/docs/IFSI%20Stability%20Report%202016%20(final).pdf (03/03/2017 14:12)

On the other hand, Islamic banking constitutes the greatest part of the Islamic financial assets all over the world, wherein 2013, the Islamic banking assets have been estimated to be 80% of total Islamic financial assets in the world (as shown in Figure 3).

Figure 3: Islamic Financial Assets by Sector



Source: Islamic Financial Services Industry Stability Report 2016

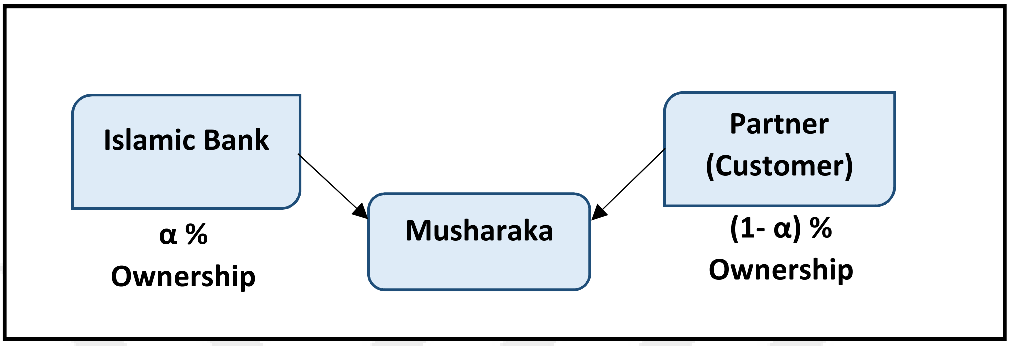
2.2.2. Products and Services of Islamic Banks

The IFI includes many instruments that comply with Islamic law such as (i) *Musharaka* (Joint Venture), (ii) *Mudarabah*, (iii) *Murabaha* (cost-plus pricing), (iv) *Salam*, (v) *Istisnaa*, (vi) and *Ijara* (leasing). Most of these instruments are run by Islamist institutions or Islamic banks. Aggarwal and Yousef (2000, p.96) classified *Musharaka* and *Mudarabah* financing under the Profit and Loss Sharing (PLS) principle while *Murabaha*, *Salam*, *Istisnaa*, and *Ijara* were classified under the Mark-up principle.

2.2.2.1. Musharakah (Partnership)

Musharakah means partnership or joint venture. It is based on Islamic financial instruments and PLS mechanism. Tariq (2004) in (Masood, et. al., 2012) stated that *musharakah* is an agreed-on contract between Islamic banks and other partners to increase the joint capital of investment (see figure 4). This agreement need not necessarily to be formal and written; it can be oral. Every partner (Islamic bank and customer) is an agent of and for the other party, as all the partners benefit from the contract of *musharakah*. The *Shariah* determines the limited liability of shareholders in a *musharakah* based legal entity, such as a joint-stock company or a corporation. The partners cannot be held liable for more than their share of capital invested.

Figure 4: Musharka framework



Source: Edited from (Shubbar, 2010)

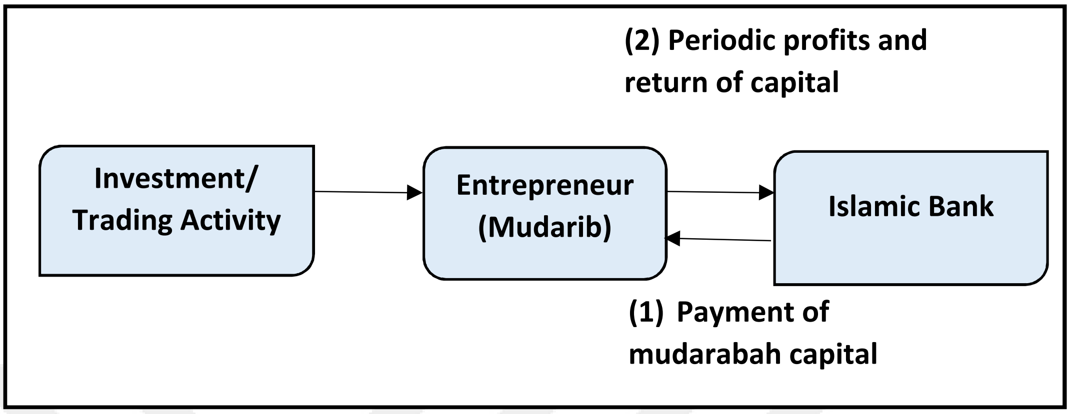
The ratios or percentage of sharing profits should be pre-determined as a proportion or percentage while fixed amount pre-determination is totally unaccepted (Masood, et.al., 2012). As a result, the partners in *musharakah* utilize some of the total capital. To sum up, the profits are distributed mutually and with the consents of the parties involved, and the loss is determined by the investment proportion.

2.2.2.2. Mudarabah (Passive Partnership)

Kazarian (1993, p.284) stated that the *mudarabah* is based on PLS principle of the Islamic finance in which the responsibility of providing the entire capital needed for a business lies on financier, while the experience and labor are the responsibility of the entrepreneur. Then, the profits and the losses are determined depending on the certain fixed ratio. The only person that bears the losses and the risks is the bank (financier); the liability of the entrepreneur is confined only to his/her efforts and his/her time. Notwithstanding, if the entrepreneur shows any mismanagement, he/she will bear the losses.

In other words, *Mudarabah* as defined by Taj El-Din (2002, p.6) "*as a form of partnership in which one of the parties (capital owner) pays a quantity of money to another party (called Mudarib, manager) who will invest it in a commercial activity, and the profits are distributed according to the agreed contract"*.

Figure 5: Mudarabah framework



Source: Edited from (Shubbar, 2010)

The process of *mudarabah* is in accordance with the following steps as shown in figure 5.

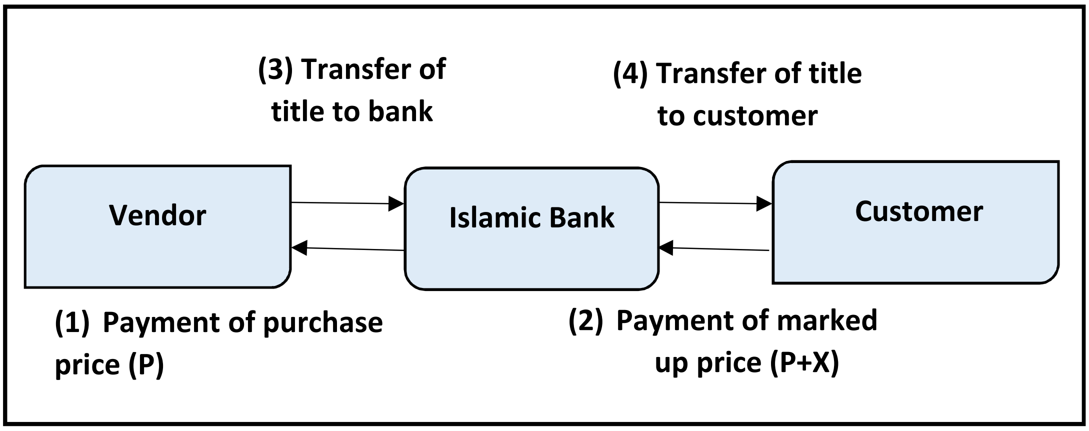
(1) The Islamic bank (or any capital owner) provides the *mudarib* with all the capital to fund a specified enterprise. The *mudarib* contributes management expertise (without any contribution of capital).

(2) In the case of profit, the *mudarib* deducts his share of profit of the enterprise, that was agreed on the contract time, then the rest of profit with the fund is payable to the owner of capital. While in the case of a loss, the capital owner should bear all losses unless the loss has occurred from the negligence on the side of the *mudarib*.

2.2.2.3. Murabahah

Murabahah has been featuring in economics since the late nineteen-seventies and early eighties. Shubbar (1993,p.24) defines *murabaha* (cost-plus financing) as "*A contract between Islamic bank (seller) and client (buyer) under which the seller informs the buyer of his cost of acquiring or producing a specified product as well as the agreed profit margin (or markup)*".

Figure 6: Murabahah framework



Source: Edited from (Shubbar, 2010)

The process of *Murabaha* is in accordance with the following steps (as shown in figure 6)

(1) The Islamic bank buys the asset from the vendor for the purchase price (P).

(2) The customer then buys the asset from the Islamic bank at a marked up price (P+X), which is payable on a deferred payment basis.

(3) The title to the assets is transferred to the bank at the time of purchase (if the Islamic bank does not own it at that time).

(4) The title to the assets is transferred to the customer.

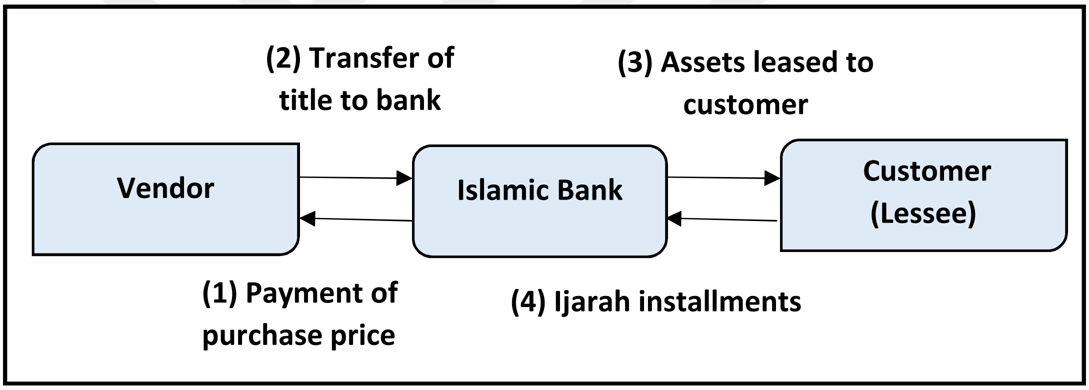
Usually, the customer provides other assets as collateral to the bank for period of financing.

Murabaha financing can be used for short-term and long-term investment (Warde, 2000, p.133). The price of the product equals the total cost and the profit which can be paid in two ways: lump sum or installments (see Figure 6). Most importantly, the amount of money paid for the assets is delayed, and the proceeds are fixed according to the basis and cost before the agreement. Accordingly, the company should be committed to the installments basis when paying the price (Maiyaki, 2013, p.281). The examples of such contract are real estate, cars, and retail personal financing.

2.2.2.4. Ijarah (Leasing)

Ijarah is an economic Arabic word that originally comes from a word meaning "leasing." Obviously, there is no clear difference in the proceedings, between the Islamic *ijarah* and the conventional leasing. Simply because, in *ijarah*, the lessors (the financial institutions like banks) buy the financial properties, and in turn lease them to the other party, the lessee, in a form of leasing. The two parties should identify the payment while writing the contract, and the money should be paid when benefiting from the property or the assets (Jobst, 2007, p.25). The Islamic bank (the lessor) and the customer exercise *ijarah* in physical items (for example, buildings), or a facility is purchased by the lessors and it is rented to the lessees for a certain time and certain leasing amount (see Figure 7)

Figure 7: *Ijara* framework



Source: Edited from (Shubbar, 2010)

2.2.2.5. Musharakah Mutanaqisah

Musharakah mutanaqisah is one of the types of *musharakah*. It is also known as "shared equity" and it is usually used for home financing. This type of *musharakah* might be considered as a derivative of the combination of the original *musharakah* and *ijara* styles of financing (Smolo & Kabir Hassan, 2011, p.237). In this method, these two highlighted methods of finance are joined in order to facilitate the transfer of the asset to another owner.

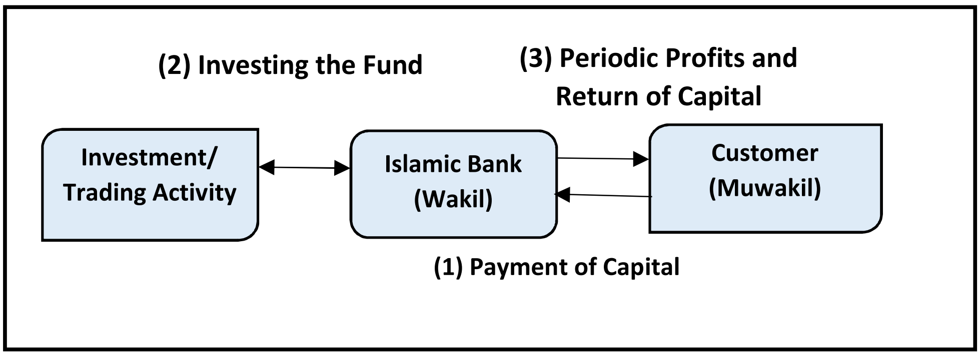
Musharakah mutanaqisah has three steps. First, there is a partnership (*musharakah*) between the customer and bank, which is implemented through a contract. For instance, the bank and the customer buy a house with an initial capital investment equals 80% and 20%, respectively. The second step is carried through an *ijarah* contract between the bank and customer. Here, the customer (renter) rents the house from the bank and pays the rental payment to the bank, which is shared between the bank and the customer based on their proportion of the shares. Finally, the customer will purchase the bank's shares until the house is completely owned by the customer. Clearly, the shares of the customer are rising, while that of the banks are falling slowly (that is called the periodical redemption by the customer). This process is done through the sale contract (Smolo and Hassan, 2011).

There is a similarity between the *musharakah mutanaqisah* and the *musharakah*, but the difference is in the periodic payment. *Musharakah mutanaqisah* includes the profit and the cost of the asset, while *musharakah* only includes the profit (this payment is carried out when the business takes off). At the end, the asset will be completely paid and owned by the customer (Meera and Abdulrazzaq, 2009, p.5).

2.2.2.6. Wakalah

Wakalah is a very important financial instrument in the Islamic economic industry. According to Ismail (2010, p.31), *wakalah* is a contract of agency signed by two parties; the agent (*wakeel*) and the investor (*muwakil*). The agent performs tasks on behalf of the investor who pays to the agent (see figure 8).

Figure 8: *Wakalah* framework



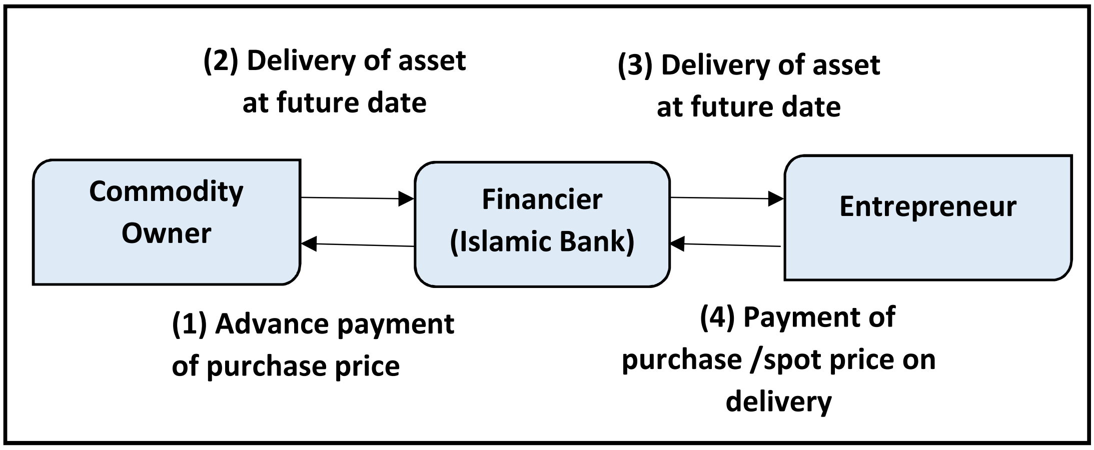
Source: Edited from (Shubbar, 2010)

Wakalah has many types, like *wakalah* in sale, *wakalah* in the purchase, unrestricted *wakalah* (also called absolute agency), restricted *wakalah*, special *wakalah* and general *wakalah*. However, restricted and unrestricted *wakalah* are considered as two major types of *wakalah*. Greuning and Iqbal (2009) as cited in (Hassan,et al,.2013, p.1698) explained that unrestricted wakalah is a wakalah in which the funds can be invested in any assets freely, and, in this *wakalah*, the Islamic banks are not a partner in profit sharing, but they charge the service fee.

2.2.2.7. Salam

Salam is also called deferred-delivery, purchase or forward sale. In this case, commodities are transacted before they come into existence. The function of the Islamic bank is to buy the commodity according to the orders of the client and to make advance payments of the purchase price to the seller, while the asset will be delivered in future at certain times. Finally, the client will pay the money in installments on specified dates (see Figure 9). The quality and quantity of commodities should be specified at the time of writing the contract (Shubbar, 2010, p.26).

Figure 9: Salam framework



Source: Edited from (Shubbar, 2010)

2.2.2.8. Istisnaa (manufacturing contract)

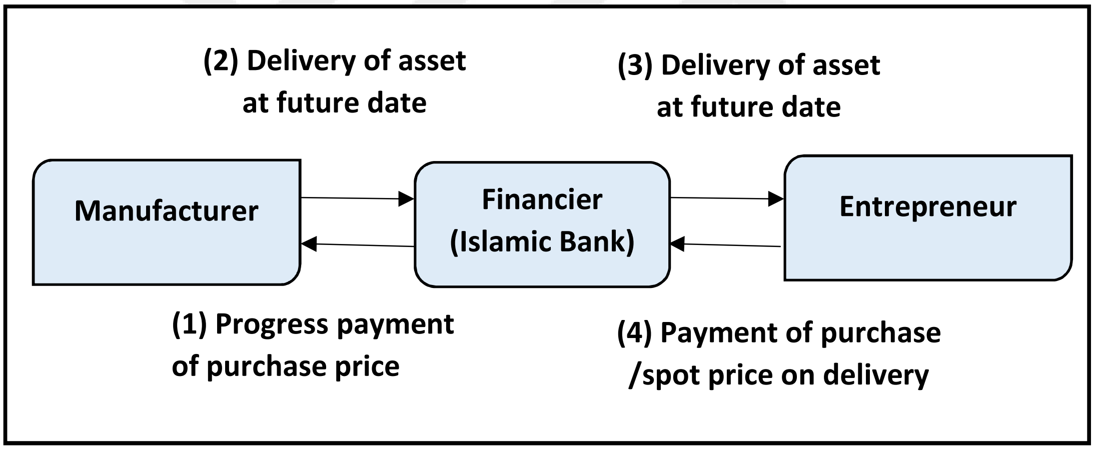
Istisnaa is an exchange/sale contract in which the delivery is delayed; the commodity is transacted before it comes into existence. The Islamic bank prepares the products going on with the desires of the clients for manufacturing purposes. At the end, client pays the pre-agreed money in installments on specified dates.

The process of *Istisnaa* takes place in accordance with the following steps (as shown in figure 10)

(1) The financier (Islamic bank) makes progress payments for the manufacturer.
(2) The commodity is delivered to the bank at a future date.
(3) The bank transfers the assets to the entrepreneur.
(4) The entrepreneur pays the agreed spot price to the financier on delivery.

The construction projects are the best example of *Istisnaa* (Iqbal and Mirakhor, 1987).

Figure 10: *Istisnaa* framework



Source: Edited from (Shubbar, 2010)

2.2.2.9. Takaful (Islamic insurance)

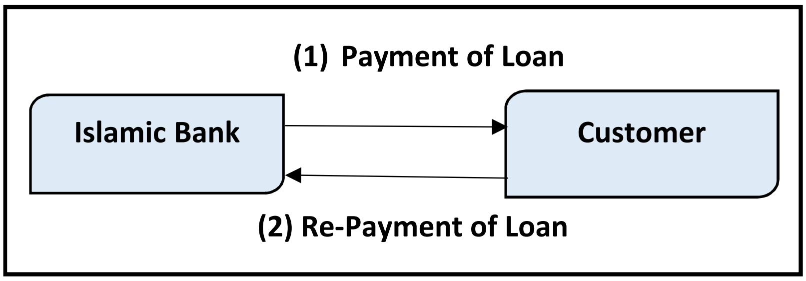
Takaful is an Islamic insurance concept that relies on the Islamic banking activities in order to go along with the Islamic Shariah. This transaction has been carried out in various forms for more than 1400 years. It comes from the Arabic word *Kafalah*, meaning "the guarantee of each other" or "joint guarantee" against certain losses (Cheikh, 2013, p.292).

Hassan et. al., (2013, p.17) stressed that *Takaful* is an agreement of cooperation between the Takaful company (insurer) and client (insured) under which the insurer protects the insured from the losses and risks in the future. The insured pays the specified money to the insurer as a contribution (premium) during the *takaful* period. Notwithstanding, if the losses did not happen to the insured participants during the agreement period, they would get back all the paid money and the returns (profits) gained by the insurers from using the gathered money based on the principle of *mudarabah*. The profits gained from policy-holders fund of the *takaful* arrangement are only for the policy-holders, not to the shareholders; this concept marks the difference between the conventional insurance and Islamic insurance. Khorshid (2004, p.87) stated the risks are shared amongst the policy-holders in Islamic insurance, but in the conventional insurance they are transferred from the policy-holders to the insurer in exchange of the premium. The best examples are the life and car insurances.

2.2.2.10. Qard Hasan (benevolent loan)

Qard Hasan is an interest-free loan (benevolent loan) granted for social purposes, such as giving these loans to the needy. The borrower obliges to repay the lender the principal sum borrowed on the maturity date of the loan (see Figure 11). However, the borrower has the right to reward the lender for his loan by adding any sum over the principal amount. On the other hand, Islamic banks charge a commission to cover the administrative expenses (the loan transactions). Iqbal and Mirakhor (1987, p.49) stated that this commission is not related to the amount or maturity of the Qard Hasan.

Figure 11: Qard-Hasan framework



Source: Edited from (Shubbar, 2010)

3. ISLAMIC CAPITAL MARKETS

The financial markets are physical or non-physical places where buyers and sellers participate to trade financial instruments and assets such as stocks, bonds, derivatives and many others. The capital markets are a vital segment of the financial market components of the Islamic financial market.

Capital markets are the markets where securities are issued to increase the medium and long-term financing and also matching the users of capital with the suppliers of capital within the investment transactions. The capital markets are divided into two markets: the primary market for new issuances of securities and the secondary market where the transactions are done through an exchange or in the over-the-counter (OTC) market.

Like the conventional capital market, the Islamic Capital Market (ICM) is a vital component of the overall Islamic financial market as it provides liquidity to individuals or institutions that they need in order to invest. ICM refers to the market where financial activities are carried out in ways which do not disagree with the Islamic principles. As it is explained earlier, the Islamic finance has its own nature and features that are derived from the principles of Islamic law, the Shariah. The most important part of these characteristics includes, not dealing with interest-based transactions, avoiding dubious transactions, and avoiding stocks of companies dealing in illegal activities or instruments. Also, it should be free from any type of unethical or immoral transactions, such as short selling, insider trading, and market manipulations. To sum up, ICM is the market where the Shariah laws govern all the financial transactions (Ali, 2005, p.14).

Despite the differences between conventional and Islamic systems, one can say that ICM actually performs the same functions as the conventional markets do in following the ethical matters in distribution of benefits and in any economic activities.

3.1 Objectives of ICM

Islamic *Shariah* does not approve hoarding of money; in contrast, it encourages investing the wealth. Therefore, it will be better for the investors to invest their money rather than being Islamic taxed (*zaka*t). Dusuki, (2010, p. 230) stated that ICM, like the conventional finance, complements the function of Islamic banking in increasing funds for long-term investments in which *Shariah* laws ease their process through ensuring sufficient utilization of the resources and optimal distribution.

In principle, the aims of the ICM follow the Islamic laws. In this context, Al-Ghazali, n.d (as cited in Alhabshi, 1994, p.3) stated that the fundamental objective of ICM is to affirm the justice distribution to the sectors which provide the investors with the best profits through providing funds from surplus to deficit units; in order to boost the economy in general. As mentioned above, the two markets, Islamic and conventional, have the same objectives, but the former follows the *Shariah* laws.

3.2 Regulatory and Legal Framework of ICM

Every institution, especially financial institution, needs to be regulated and controlled closely. This is important to protect the investors' capital from failure and deception of the financial intermediaries, and to prevent money laundering or any kind of financial crimes. To achieve the objective of control and regulation, there must be a very effective governance in the institutions and the financial institutions, and securities should be well-regulated.

According to Wilson (2006, p.117), better regulation can decrease and overcome economic problems. If customers do not trust any financial institution, it may lead to financial panics and crises. He also said that in the ICM, the regulation process is very active and effective; the regulation system provides sufficient reporting, observation of capital adequacy, controlling of risk management and customer disclosure.

ICM has an important role in the growth of the global economy; it becomes very crucial to safeguard the market with lawful framework. Maiyaki (2013, p.5) showed a strong connection between the development of the economy and the regulatory framework in any economic activity. Effective regulatory protection results in the increase of the capital market. In other words, an accurate legal rules implementation can lead to the development and expansion of the capital market and vice-versa.

On the other hand, Naughton and Naughton (2000, p.151) claim that there are many obstacles facing the progress of ICM. It is clear that Islamic Finance does not approve the interest rate, and the system is well organized in the Muslim communities; the writers show that there are economic desires to employ the Islamic economics in the equity markets. They point out that although the common stocks are legal tools in the Islamic economy, there are illegal practices in the stock trading, such as "speculation, margin trading, short selling, and equity future and options" which are very constrained and impossible to be accepted in the Islamic markets.

However, ICM is so outlandish that it demands to organize the principles of regulation and sitting during its activities; therefore, the Islamic economists have different beliefs about how to ameliorate the ICM's structure in order to be able to control and monitor the organizations that adopt the Islamic financial (El Qorchi, 2005, p.5). There is a main rational argument that if any firm accepts all the Shariah laws, the practicality of the Islamic economic system will be impossible to some extent. In addition to this, when a company follows the Islamic economic rulings and there is an unnecessary non-halal part of their dealings, this will not cancel the Islamic orientation of the company and it will be a kind of Following-Islamic-*Shariah* corporation (ISRA, 2011). To sum up, there is an established criterion that can determine the Islamic standards which the company should follow to be under the umbrella of the Islamic economy (Kamarudin, et.al. , 2014,p.278).

In this context, Alhabshi (1994) states that the market activities of the company can be legal as long as we don't find any actions that is non-Shariah-compliant, and if there is no interest among transactions, the company is legal, too. This is justified by two reasons. The first reason is that the Islamic financing cannot meet the financial need of the companies. The second reason is that the activities of the Islamic finance are subsidiary, not primary. Another criterion is that the holding and parent companies should be lawful and their subsidiaries should be lawful, as well. For example, if the holding company is lawful, but its subsidiary is illegal, both the holding company and its subsidiary are illegal according to the second criterion. However, if the subsidiary company is legal and the parent company is illegal, the stocks of the former company are lawful, but the latter are not.

Theoretically and even practically, there is no difference between the conventional equity and the Islamic equity; Islamic equity is a business partnership that includes the loss and return altogether. As a result, if the organization leadership wants to divide the profits, the participants in the company's shares could take part of the profits (ISRA, 2011). In addition, the capital profits may be taken in consideration when the company sells the shares at the best and approved prices. Interestingly enough, the capital owners can discuss the securities of their companies when their companies reach the stage of illiquid assets. On the other hand, there will be no negotiation in a large number of the assets that is liquid, but they will be sold at par value. The securities that the traders are dealing with in the financial markets are available on the primary and secondary markets; the beginning of dealing with the securities is at the primary market. On one hand, the initial public offer (IPO) is the suitable way to enable the organizations to raise fund from the holders of the stocks and bonds in the primary markets. On the other hand, the secondary market only considers the transaction of securities if they are available. The funds of the secondary markets are not presented to the first issuing organization, but the secondary market permits the securities and prepares liquidity to the security owners. Such secondary markets are not proper for the Islamic economy because the transaction in the Islamic markets is not qualified for the secondary markets (Maiyaki, 2013, p.5).

The contracts depending on the Islamic equity are built on *mudarabah* and *musharakah* which must be in harmony with the ethics of the Islamic economy; the business must be halal (Wilson, 1997, p.1333). The equity based on the *Shariah* includes the equity of company which contains halal business. However, if the company has amalgamated both *Shariah* and non-*Shariah* businesses, its operation must be monitored carefully.

3.3 Islamic Financial Market Instruments

Islamic financial market, like their conventional counterparts, include money markets and capital markets, but there are some differences in the instruments, the functions and the procedures. (Azmat, et.al. , 2014,p.2) stated that the conventional instruments and the Islamic ones are similar to some extent, and IFM considers the risk and reward when the companies employ some techniques.

Nowadays, Islamic financial system exists parallel to conventional financial system. There are some Islamic finance concepts and instruments related to pre-Islamic days that are employed these days, such as *mudharabah* and *musharakah*. As soon as Islam had been established in the Middle East, the trade financing activities were guided by the Islamic principles which then got formal and institutional. Also, the development of new formal structures followed the state-based financing to facilitate the business process.

3.3.1. Islamic Equity Market

The equity is considered as the major instruments of IFM. Maiyaki (2013,p.279) pointed that under the Islamic equity market, there are *Shariah* compliant security transactions such as Islamic Exchange Traded Funds, Islamic Real Estate Investment Trust (REIT), Islamic unit trust funds, Islamic unit mutual funds, and the Islamic venture capital or Private Equity.

3.3.2. Islamic Equity Funds

The point at which the Islamic equity funds (IEFs) and traditional equity funds are similar is in that the investors mostly utilized all their funds wholesomely in order to invest in the shares. Despite the similarity between them, the only distinction is that the IEFs go along with the rules of the Islamic *Shariah* to earn *halal* gains because of the fact that Muslims are not allowed to deal with interest or to invest in non-Islamic companies, such as alcoholic companies (Khan, 2015,p.136).

Before 1990, there was no consensus among scholars of Islamic jurisprudence regarding the permissibility of investing in IEFs. After the agreement amongst the Islamic scholars on investing in IEF, and during the rising investments in the Middle East, the Muslim investors started using IEFs. Clearly, as soon as the IEFs was allowed, the Gulf Cooperation Council (GCC), Middle East and South Asian countries have been supporting the Islamic funds (Mansor, et.al., 2012, p.140). In 2012, the amount of Islamic funds were about 750 with

US$80 billion under management against 60 funds, and less than US$2 billion twelve years before (Al-Rifai, 1999). (El Khamlichi, et.al., 2014) noted that the non-Muslim investors admired the ethical investment as an alternative to the social responsible investing, and that makes IEFs more approved by others.

3.3.3. Islamic Unit Trust/Mutual Funds

El Khamlichi, et al., (2014, p.2) pointed out that the unit trust funds – mutual funds– is an investment that includes collecting groups of investments from the individual investors and the economic institutions which have the same financial aim, investment process, and risk tolerance.

Islamic funds have helped businessmen in collecting all individual and company's investments and employ them in the financial securities. The Islamic funds obey the rules of Islamic law, and at the same time, they consider the risk, liquidity, ethics, and religion that some investors want. According to the Islamic funds, the investments and their decisions should be in line with the qualitative and quantitative criteria of Islamic law (El Khamlichi et al., 2014, p. 3).

The Islamic unit trust only deals with and in investment process, halal stock and bonds following the Islamic standards. Strictly speaking, the *Shariah*-based stocks do not include the conventional banking, insurance, gambling, alcoholic companies, non-halal food products or any products causing physical, mental or social problems. In terms of Islamic principles, these products contain elements that are prohibited by Allah, and they have detrimental effects on humans (Ahmad and Haron, 2006). Also, the interest charge (*Riba*) is not tolerated in Islamic Unit Trust.

The Islamic mutual fund is a very important economic activity in management, and it affects the Islamic system positively. Therefore, in the last three decades, the Islamic mutual funds have been rapidly increasing, and the affinity of the investors towards the Islamic economy has been rising, as well. The mid-eighties were the beginning of the Islamic mutual fund activities. Al-Rifai (1999, p.1) notes that the North American Islamic Trust had established the first Islamic fund in June 1999 in Indiana, so as to meet the needs of the

Muslims investors. It is clear that the industry of Islamic mutual funds is the fastest activity in the Islamic financial system and this may result in the revival of the practicality of Islamic mutual funds. Nevertheless, Mansor, et.al. (2012, p.140) argues that the Islamic mutual funds have not reached the expected stage at which it can be competing with the general mutual funds.

3.3.4. Islamic Real Estate Investment Trust (REIT)

Security Commission Malaysia[17] defines Real Estate as "*property trust fund, and that means unit trust and investment trust scheme that invest or propose to invest primarily in income-generating real estate*".

Investment in the real estate could be for two purposes. The first one is called residential purposes, such as buying houses, hotels, and apartments, while the other one is called commercial purposes, such as acquiring offices, retail units, warehouses and other buildings for commercial aims. Considering the returns on such investments, there are two possibilities: the capital appreciation and the periodic distributions, hence, the difference between the conventional and Islamic real estate investments is erased.

For investors seeking to invest in *Shariah*-compliant manner, they must be aware of the restrictions and conditions of the Islamic principles in order to realize what makes their activities Islamic or negates it.

Real estate should be distinguished as an asset class and the investors need to be acquainted with the Islamic laws, especially the laws of property. For example, the investment in shopping mall is acceptable when that investment does not include any anti-Islamic standards; such as, betting and selling alcohol which are generally not allowed. Generally speaking, there is no complexity when you invest in a tenanted property; however, that simplicity could be an issue in the economy (Wilson, 2007, p.8).

Establishing real estate business that is in compliance with the *Shariah law* is advantageous because the prices of the property and equity markets are hardly related;

[17] Securities Commission Malaysia (2008). Islamic Capital Market Review *Annual report*

therefore, this can lead to lowest risk and variegation. The limitation in the liquidity is a serious problem in the property investment according to the Islamic or conventional system due to the slowness of the turnover and the long-term investment of such property. (Wilson, 2007, p.9).

3.3.5. Islamic Exchange Traded Funds (IETFs)

Ferri, (2008, p.15) stated that the Exchange Traded Funds that started in 1924 were a very crucial activity in the history of investment with unlimited mutual fund offering. After the 1987 market crash and the request by the law company of Leland, O'Brien, and Rubinstein, new securities rules have been reconsidered by the U.S. Securities and Exchange Commission (SEC) in order to ease the exchanges. According to Ferri (2008, p.19), SEC issued the Investment Company Act in 1990, so as to enable the creation of mutual funds, the permits, the quittance, and shared formation. Hamedanchi, and Altenbach (2009, as cited in Diaw et al., (2010, p. 132) states that the State Street Global Advisors, in 1993, launched the Exchange Traded Funds to follow the S&P500. Furthermore, Islamic Exchange Traded Funds (IETFs) are one of the pioneering explorations in the financial engineering in the 20th century, and a lot of investors have admired these funds because their advantages compensate the disadvantages. Securities Commission of Malaysia (SC) defined IETFs as a *"listed index-tracking fund, structured as a unit trust scheme whose primary objective is to achieve the same return as a particular market index*", while Diaw et al. (2010, p. 132) defined IETFs as an "*essentially open-ended unit trust funds, listed and traded on a stock exchange with unique in-kind creation and redemption mechanisms supported by participating dealers and liquidity provider*".

In terms of advantages, *Shariah*-compliant IETFs try to offer various investment possibilities, in addition to the previous pool of investment, for both of Muslim and ethical investors to be part of the international financial system. In spite of the exceptional increase of the traditional IETFs, *Shariah*-compliant IETFs have been recognized since 2006 by the time the Dow Jones Islamic Market (DJIM) and Turkey ETF were part of Istanbul Stock Exchange, so that they could be aware of the DJIM Turkey Index (Diaw et al., 2010).

3.4 Islamic Securitization

Asset securitization (also referred simply to as “securitization” is the process by which securities are created by a Special Purpose Vehicle (SPV) and issued to investors with a right to payments supported by the cash flows from a pool of financial assets held by the SPV (Barth, p.4). From the perspective of credit originators, this market enables them to transfer some of the risks of ownership to parties willing or able to manage them. By so doing, originators can access the funding markets at debt ratings which is higher than their overall corporate ratings, and which generally gives them access to broader funding sources at more favorable rates. By removing the assets and supporting debt from their balance sheets, they can be able to save some of the costs of on-balance-sheet financing and manage potential asset-liability mismatches and credit concentrations.

In the absence of tradable debt and valuation problems of financing contracts, Islamic finance has proven conceptually difficult, especially when it comes to money management. Banks operating under Islamic law are predisposed to adopt buy-and-hold investment strategies and to carry excess short-term reserves for lack of sufficient long-term re-investment opportunities, which has inhibited efficient financial intermediation and capital-market deeply.

Nonetheless, financial institutions have been able to develop various forms of Islamic financial instruments that are virtually identical to their conventional counterparts in substance. However, these securities are not surrogates for conventional interest-based securities that mimic the interest rate structure. (Jobst, 2007, p 14-15)

Islamic securitization fits with the notion of Islamic finance and since most Islamic financial products are based on the concept of asset backing, the economic concept of asset securitization is particularly amenable to the basic tenets of Islamic finance. Asset securitization describes the process and the result of issuing certificates of ownership as pledge against existing or future cash flows from a diversified pool of assets (“reference portfolio”) to investors. It registers as an alternative, capital market based refinancing mechanism to diversify external sources of asset funding in lieu of intermediate debt-finance based primarily on the risk assessment of securitized assets (Jobst, 2006, p 23).

Islamic securitization transforms bilateral risk sharing between borrowers and lenders in Islamic finance into market-based refinancing of one or more underlying Islamic finance transactions. In its basic concept, originators would sell existing or future revenues from lease receivables (asset-based), "sale-back profit" (debt-based) or private equity from a portfolio of Islamically acceptable assets to a Special Purpose Vehicle (SPV), which refinances itself by issuing unsecured securities to market investors, who are the "capital market corollary" to a singular lender in Islamic finance. They assume the role of a "collective financier" whose entrepreneurial investment does not involve guaranteed, interest-based earnings (Jobst, 2007, p:16)

3.5 Sukuk Market

Debt market or (Sukuk market) is one of the major component of the ICM. In this respect, Haider and Azhar (2011, p.20) mentioned that sukuk are the most important and prominent elements of Islamic capital market. They constitute about 90% of the Islamic capital market. According to AAOIFI, sukuk are "*certificates of equal value representing undivided shares of ownership intangible assets, usufruct, and services*", and it identifies 14 structures of sukuk[18]. On the other hand, the Securities Commission Malaysia (SC) (2004) defines sukuk as "*any securities issued according to any Islamic concepts and principles approved by the Shariah Advisory Council*". Simply, Sukuk represent a value of an asset and are frequently indicated as an Islamic bond, while the best translation for it is the Islamic Investment Certificate.

Sukuk was virtually unknown prior to 1987. The *Fiqh* Academy of the Organization of Islamic Cooperation (OIC) legitimized the use of sukuk in February 1988 (Khan, 2013, p.251), but later sukuk emerged as a viable financing option particularly in the 2000s (Azmat et al., 2014, p.131). Maiyaki (2013, p.282) noted that sukuk is increasingly common. Clearly, the Islamic finance have been resorting to the sukuk as one of the most appropriate investment activities because the Islamic insurance (*takaful*) and the *Shariah*-based funds cannot deal with the traditional securities since they allow the interest (Wilson, 2008, p171). As illustrated in (figure 13), the 2016 (IIFM) Sukuk report pointed out that the issuance of Sukuk has seen significant growth; it jumped from $ 1.17 billion in 2001 to $ 50 billion in 2007. Due to the

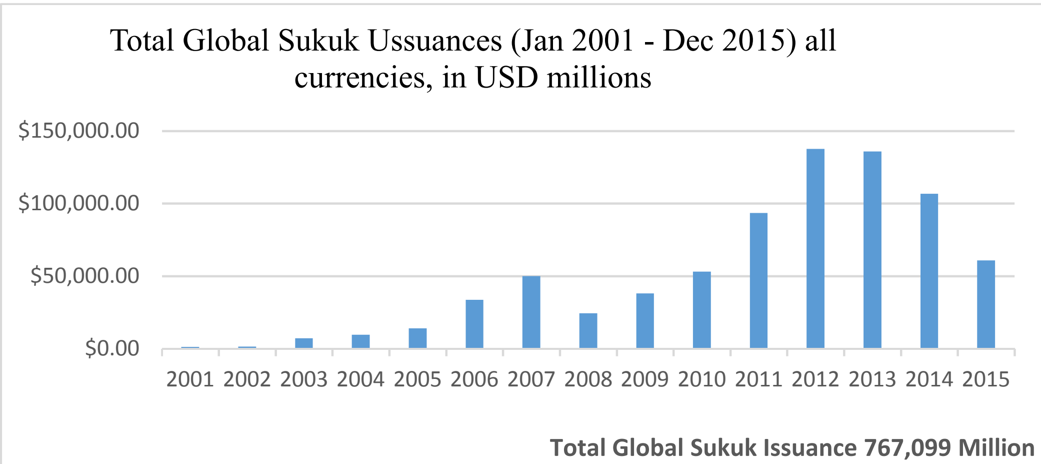
[18] Accounting and Auditing Organization for Islamic Financial Institutions (2007). *Statement on the purpose and calculation of the capital adequacy ratio for Islamic banks.*

global financial crisis, the issuance of Sukuk dropped to $ 2.43billion in 2008, then it reached its peak $137.56 billion and $135.87 billion in 2012 and 2013. In 2014, due to Malaysian central bank policy decision to discontinue issuance of short-term investment Sukuk, the total Global issuance of Sukuk has been declined.[19]

On the other hand, the size of the Sukuk has achieved dramatic growth from US$50 billion in 2004 to US$130 billion in 2012[20], while the Thomson Reuters pointed, in the 2015/16 report of the Global Islamic Economy that the size of outstanding sukuk jumped to $295 billion at the end of 2014[21] and the size is expected to rise to $3.247 trillion by 2020.

Sukuk can be issued for existing assets or for assets that will exist in the future. Investors who purchase sukuk are rewarded with a share of the profits derived from the asset. They do not earn interest payments because doing so would violate sharia. Sukuk are usually secured or backed by some underlying assets, which allow the investment to have security integrated into them (Obaidullah, 2005, p.161). Accordingly, under the case of default by the sukuk issuer, the sukuk generally assures investors, or sukuk holders, the ability to recover their investments completely or partly, from the liquidation of the assets.

Figure 12: Global Sukuk Issuance 2001-2015



Source: International Islamic Financial Market (IIFM))

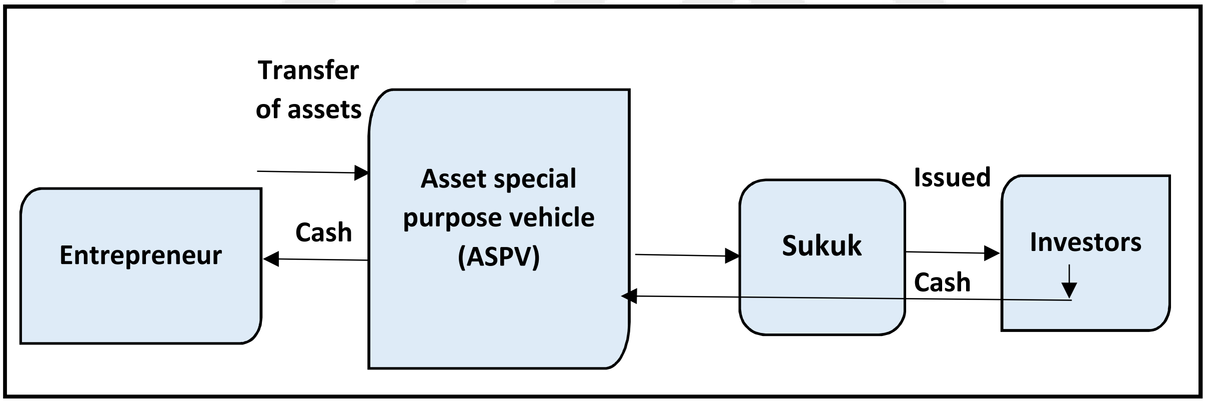
There are similarities between the sukuk and the conventional bond, but the main difference is that the sukuk are asset-backed. As a result, there is an additional beneficial

[19] International Islamic Finance Market- Sukuk report 5 edition- March 2016
[20] World Islamic Banking Competitiveness Report 2013–14
[21] Thomson Reuters & Dinar Standard. State of the Global Islamic Economy Report 2015/16, pp. 40-41

ownership of the underlying asset. The asset will be leased to the investors, and the returns will be added to the sukuk (Cakir and Raei, 2007, p.3).

The ICM of the long-term funding and its activities is enriched by the sukuk, which can replace the companies and the public foundations by the banking investment. (Abbas, 2005, p.15) states that the Islamic banks have employed the funds with the system of *murabahah* by the inter-bank markets with the foundations that act as the investor who purchases and sells the assets to get the returns of the reserves of the liquidity, but now there are sukuk that manage the liquidity. Clearly, the Islamic banks had hindrances, and one of these problems is the scarcity of the institutions organizing the funds according to the aforementioned method; therefore, there is an increase in the charges, whereas there is a decrease in the returns. On the other hand, the sukuk will help the investors to manage the liquidity very well.

Figure 13: Framework of sukuk



Source: Edited from (Shubbar, 2010)

3.5.1. Comparison between sukuk and bond

It is very important to distinguish between the Sukuk and bonds. Clearly, bonds are certificates that contain financial commitments; the borrowers release these bonds to the creditors. In addition, there is a guarantee obligation from the creditors who will repay the capital with the charge to the borrowers. The bonds mainly try to use the loan relationship to activate the issuers' leverage. That relationship implies interest which is banned in Islam (Adam and Thomas, 2004, p.5).

Bonds are easily traded in a secondary market, so they are considered very liquid in nature. Bonds risks are highly connected with the credit risk of the issuer. On the other hand, sukuk are the owner of the asset that moves from the issuer to the sukuk holders in forms of Shariah-compliant contracts, such as lease, partnership, or sale contract that stem from the business activities. The sources of the returns can either be from profits of real underlying assets attached to sukuk or from leases, sales or partnerships that modify the sukuk as asset-backed instruments. Structuring the sukuk determines whether they are debt instruments or equity instruments. As regards the risks, the risks of the sukuk are more than that of the conventional bonds because the former includes the credit risk, the market risk, the asset equity risk, the regulatory risk and so on (Nanaeva, 2010, pp. 21-22).

The features of the *Sukuk* and the normal bond are fixed duration, bear profit (coupon), reasonable tradable at yield price. Bakar (2008) as cited in (Zakaria, et.al., 2013, p.131) has demarcated the differences between the sukuk and the conventional bonds. First, Sukuk represents the undivided shares in ownership of projects, assets, usufruct, and services. Second, *Sukuk* also show the co-partnership relationship between the issuer and the investor. On the other hand, conventional bond is debt obligation, which can be either secured against certain underlying assets or unsecured in the form of promise to pay. In the same context, Zakaria et al. (2012, p. 663) demonstrated that both conventional bond and sukuk can be debt tools, but only the sukuk can be an equity tool. Moreover, the bondholders, the organization or the individuals, have cash money, but the sukuk holders have the liquid assets. Sukuk involve several contracts to create financial obligations, while conventional bonds issue a contract of loan only to create debt and as regards the returns, the source of return in the conventional bond is from Interests, whereas the return of the sukuk is from the financial gains.

3.5.2. Types of Sukuk

Since sukuk can be structured in in numerous ways, proper classification of sukuk is crucially important for issuers in order to determine the aim of sukuk structures, as well as the nature of sukuk structures. AAOIFI has classified sukuk investments in their Shariah standards, such classification and definitions are given in the following sub-sections.

3.5.3. Sukuk Al-Murabahah

Concerning the term *Sukuk Al-Murabahah*, Securities Commission of Malaysia stated that *Sukuk Al-Murabahah* is a "*certificates of equal value evidencing the certificate holder's undivided ownership of the asset, including the rights to the receivables arising from the underlying contract*".

Sukuk Al-Murabahah exercise direct structuring of securities. First, the company or the investors try to get pieces of advice from the bank to have the best knowledge about the securities; therefore, special purpose vehicle (SPV) is made to achieve this aim. The function of SPV is to produce securities and to employ the accumulated gains from the investors to pay for the asset. After that, the agency contract is invalid when the SPV's agent receives the assets from the financier (the seller). Then, the company takes ownership of the commodity through contract-SPV.

Sukuk Al-Murabahah has debt feature, but they are face value, which does not allow them to be traded in the secondary markets, hence, they are not liquid. The maturity yield on the financial assets has legitimate proceeds, therefore, it can be negotiated. Because the sukuk *Al-murabaha* cannot be traded in the secondary market, this reduces the investment with sukuk- *Al-murabaha* (Maiyaki, 2013, p.4)**.**

3.5.4. Sukuk Al-Ijara

The object of an *Al-Ijarah* lease contract is a desirable, known, permissible and accessible usufruct; therefore, it can be seen as the sale of usufruct (Jobst, 2007, p.25) *Sukuk-Al-Ijara* is considered to be the most ideal option for structuring debt securities.

The Securitization process for this type of sukuk is as follows: The company tries to benefit from the bank's advice about the securities; an SPV is created to issue securities to investors. After which the SPV purchases assets needed by the company from a vendor. The company plays agents' role of SPV and delivers the assets from the vendor. Finally, on the *ijara* basis, the company owns the assets, and the money is paid to SPV who then gives the proceeds to the investors. The investors can negotiate with the Sukuk *Al-Ijara* in the secondary markets because of the fact that Sukuk-*Al-Ijara* represents pro-rata ownership of the assets and not debt.

Rohmatunnisa (2008, p.28) stated that *Al-Ijara* features both debt and equity. It seems as debt because the *ijara* is like the asset-backed loan. Regarding the equity, *Sukuk-Al-Ijara* is the positive or negative predictable salvage value. Maiyaki (2013, p.281) mentioned that it's possible to predict the *Ijara* rentals, but sometimes it will be difficult to do this because of the maintenance and insurance expenses. Also, the instruments' possessors are insecure due to the ownership-related risks because those owners are part of the ownership of the assets.

3.5.5. Sukuk-Al-Salam

Sukuk Al-Salam are Islamic finance instruments which are based on an underlying forward financing transaction where the financial institution pays in advance for buying specified assets, which the seller will supply on a pre-agreed date. *Sukuk Al-Salam* are issued by the seller of Salam goods and are subscribed by the buyers of those goods. Sukuk holders will become the owners of the underlying products. The subscription proceeds provide the funds needed to pay the cost of the Salam product. After subscription, the sukuk holders will be the actual owners of the underlying product, and as such are entitled to receive the sale price of their sukuk or the sale price of the underlying goods sold on the basis of a parallel Salam if the original contract is offset. However, these Sukuk involve market risk as the price of the underlying asset may decrease instead of moving up in future properties at a future date.[22]

It has been suggested that practically *Sukuk Al-Salam* are committed to the Islamic standards, and they are similar to the traditional treasury bill of the three-month short financing that is declared by the government because the profits and the maturity are stated as soon as the agreement is done (Bahrain Monetary Agency, 2002).

Instead of delivering any item at specific time, the arrangement SPV conveys the money from the buyer to the seller. Obviously, that item should be described, and the

[22] http://www.investment-and-finance.net/islamic-finance/s/salam-sukuk.html (01.10.2017 21:10)

quantity, quality, date, and place of delivery should be defined. Also, SPV has the authority to assign an agent to sell the item at any higher price after the seller deliverers the item to the buyer, and the amount of profit difference is for the investors or the sukuk holders. (Obaidullah, 2005, p.99).

The risks of market and of counterparty is faced by the *Salam* sukuk owners. Specifically, the risks of market appear as soon as the item cannot be in the markets or can be sold at a lower price, and when the vendor loses the ability to deliver the item, the counterparty risk arises. Nevertheless, the markets risks may be lessened when a third party independently promises to buy the instrument at a predetermined price with the delivery.

As a result, by the time the instrument holders deliver the items as promised, SPV will give them to the third party as promised as well. Most importantly, this unilateral promise follows the law and legal principles (Maiyaki, 2013, p.281).

3.5.6. Sukuk-Al- Istisnaa

The certificates of *sukuk Al-Istisnaa* have equal value and gather the needed money for the products of the certificate holders. Engku (2008) stated that the producers issue the certificates, and the purchasers of the goods are the subscribers. It should be noted that the money taken from the subscribers represents the price of the products. Furthermore, the Islamic Banks, during the manufacture of the asset, financially help the producer and give a title to the product, and after the process of production is completed, the title will be granted to the developer by the time they agree on a delayed payment, or it may lease the manufacturer to the producer based on *Sukuk-Al-Ijara* (Jaffar, 2010, p.44).

Sukuk Istisnaa has helped in implementing projects that require many resources, and the SPV, who constitutes the sukuk owners and functions as a producer of the instruments which will be delivered to the buyer. In this sukuk, the asset is produced, and the SPV is responsible for making sure that the instrument is made by the subcontracts or the others. Then, the buyers, on delayed terms even the price that equals the face value, pay for the products using the *sukuk* as a verification of indebtedness. The *sukuk* have sundry periods of maturity to count the number of payments on which they agreed because of the gradualism of the funds needed in these *sukuk* (Maiyaki,2013, p.5). Most importantly, the *sukuk* structure is considered as a confirmation of indebtedness of buyer; therefore, the certificates may only be sold in the markets at the face value.

3.5.7. Sukuk Al-Mudaraba

Sukuk Al-mudaraba are financial tools to increase the capital equity (common ownership) and offer the shares of the owners in the funded projects. The issuer of *sukuk Al-mudaraba* is the capital manager who will tempt the investors to use these sukuk. After that, the issuer tends to invest the capital in the predetermined project, and both the vendor and the buyer agree on a rate of proceeds. Also, as long as the project provides the manager with the gains, "the manager will apply the pre-agreed profit-sharing ratio". Finally, when there is a loss, the investors will only deal with this problem[23].

3.5.8. Sukuk-Al-Musharaka

These investment sukuk embodied the equity ownership on them[24]. Strictly speaking, the only difference between *musharaka* and *mudarabah* is the nature of the relationship between the issuers of the sukuk and their owners, by which the issuers establish a committee of the sukuk owners, who can be referred for investment decision makers. The *musharakah sukuk* is appropriate when the investors borrow money to fund the large commercial activities. Also, these sukuk can be negotiated, and we can sell and buy these sukuk at the secondary market (Zakaria, 2012, p. 664)

3.5.9. Hybrid/Pooled Certificates

These certificates are based on an underlying pool of assets, including *ijarah*, *murabahah* receivables, and *Istisnaa* with the condition that at least 51 percent of the pool comprises *ijarah* assets. The return on these certificates can only be a predetermined fixed return. (Nazar, 2015,p.4)

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[23] ISRA. (2011). Islamic Financial System. Kuala Lumpur: International Shari'ah Research Academy for Islamic Finance) Vol. 3, Issue 2, pp 113 – 131

[24] ISRA. (2011). Islamic Financial System. Kuala Lumpur: International Shari'ah Research Academy for Islamic Finance) Vol. 3, Issue 2, pp 113 – 131

3.5.10. Variable Rate Redeemable Certificate

Musharakah is the underlying contract of this type of sukuk, thus they have a relatively stable rate as compared to dividend payouts. By nature, these sukuk is considered senior to the issuer's equity, and they have a redemption feature. The structure of sukuk depends on *musharakah* returns, and the floating rate of return on these sukuk would not be linked to market benchmarks such as LIBOR but would rather depend on the issuers' actual performance.(Nazar, 2015, p.4).

3.5.11. Fixed-Rate-Zero-Coupon Certificate

These type of instruments can be formed where the assets to be mobilized are not created at the time of issuance. Consequently, the fund mobilized through Zero-Coupon Non-tradable Sukuk would be to create more assets on the balance sheet of the company through *murabaha* and *istisna*. However, financial instruments of this nature would not readily be tradable due to Shariah restrictions (Jonsson, 2006. p.175).

3.6 Islamic Derivatives

Financial derivatives, like forwards, futures, options, and swaps represent the instruments and the instruments' payoffs relate to the securities. Conventionally, the derivative instruments are utilized for two specific cases or (reasons), "hedging and speculation". The aim of hedging is to lessen the risks that is being faced by the banks and customers, whereas the speculation aims at activating the risks that bring proceeds. The types of speculation, like *Gharar* and *Maysir,* are prohibited in the Islamic finance; therefore, (Salehabadi & Aram, 2002, p.3) explained that using this derivatives is not allowed for speculation.

Also, (Colditz & Stocker, 2009, p.14) stated that in the conventional derivatives, the payment and the delivery are carried out in the future and this is absolutely not acceptable according to Islamic principles and trade of liabilities. Lastly, to assess the conventional derivatives, the investors should follow interest-based models, hence, the Islamic financial foundations cannot use them to assuage the risks.

3.7 Islamic Stock Market Indexes

The Islamic scholars have used the *Shariah* screening criteria to distinguish the Islamic indices from the conventional stock indices. The Islamic scholars are always interested if the returns earned by the investors in the Islamic finance/indices are distinctive from the conventional finance/indices. They stated the stock guidelines which are still in use in developing the Islamic financial stocks all over the world (Hassan, 2001). Generally speaking, there are two criteria of Islamic screenings: positive and negative. The positive screenings search for companies that adopt the Islamic ethical standards (quantitatively and qualitatively), while the negative screenings exclude any stocks which are not following *Shariah* requirements in finance (Rana and Akhter, 2015, p.15).

Most of the Islamic scholars approved buying and selling of stocks and shares, as long as they do not interfere with the legitimate rules because they represent real assets. Moreover, the payments of dividend are in accordance with Islamic principles since dealing with interest is illegitimate in Islam. Hence, mutual funds and equities are considered more compatible with *Shariah* screenings criteria of profit and risk sharing than fixed-income assets (Rana and Akhter, 2015, p.4)

In addition, the advocates of the Islamic finance argue that the Islamic financial standards offer a useful economic and social concept to evaluate potential investments. Islamic investors consider the Islamic laws in their investments, and this grants the relaxation and the lawful profits.

3.7.1. Islamic Indexes Examples

The remarkable growth of the Islamic capital market encouraged many companies and stock exchanges to establish Islamic indices (compatible with requirements of Islamic law or *Shariah*) such as Dow Jones and FTSE and others.

3.7.1.1 The Dow Jones Islamic Market Index (DJIM)

The Dow Jones Islamic Market Index (DJIM) is an Islamic equity benchmark index. It is a subset of Dow Jones Global Indexes (DJGI) family. According to (Moran, 2000, p.257), the rise of the Islamic investors who want to run their transactions according to *Shariah* finance encourages the Company of Dow Jones to launch the Islamic Market Index. This market is still in successful progress, so the Company of Dow Jones decided to make a benchmark of Islamic Investment. For that, the company started to create an index for the growing number of investors who are interested in following the Islamic religious principles.

Therefore, the first Dow Jones Islamic Market was established in Bahrain in February 1999. After which the Company of Dow Jones was able to launch other indices in some other countries, such as USA, UK, Canada, and Japan; in addition to this, it launched one sector index for global technology and a blue chip extra liquid index.

The Dow Jones Islamıc Market "Turkey Index" (DJIMTR) was launched in September 2004. The index joins the family of more than 60 other Dow Jones Islamic indices. The index was designed to measure the performance of stocks traded in Turkey which is subjected to pass through the rule-based screening in order to ensure adherence to Shariah law investment guidelines. The index is calculated in the local currency, the Turkish lira.

Now, the Company of Dow Jones Islamic Market Index has more than 600 companies globally in more than 70 countries, and it included 100 industry groups and 9 economic sectors with more than 23 trillion dollars as a market capital. The Company of Dow Jones is expected to launch extra indices, such as real-estate investment trust index, United States Small Cap Islamic index, and an Internet index.

- **Sector-Based Screens**

According to the standards that are established by the *Shariah* Supervisory Board, the following businesses: alcohol, tobacco, pork-related products, conventional financial services (banking, insurance, etc.), weapons and defense, and entertainment (hotels, casinos/gambling, cinema, pornography, music, etc.) are inconsistent with *Shariah* law because most of the Islamic scholars stated that these industries and financial instruments are not in harmony with the Islamic laws regarding financial economy.[25]

The real-time stock prices (i.e. closing traded prices and latest available currency rates) of the underlying companies are utilized in the calculation of the DJIM index. The weight of the index is determined by the float-adjusted market capitalization. Weights are reviewed quarterly.

- **Financial Ratio Screens:**[26]

According to the financial ratio screens, all of the following must be less than 33%:

- Total debt divided by trailing 24-month average market capitalization

$$\frac{\text{Total Debt}}{\text{Trailing 24} - \text{month Average Market Capitalization}} < 33\%$$

- The sum of a company's cash and interest-bearing securities divided by trailing 24-month average market capitalization:

$$\frac{(\text{Cash} + \text{Interest} - \text{Bearing Securities})}{\text{Trailing 24} - \text{month Average Market Capitalization}} < 33\%$$

- Accounts receivables divided by trailing 24-month average market capitalization:

$$\frac{\text{Accounts Receivables}}{\text{Trailing 24}-\text{month Average Market Capitalization}} < 33\%$$

- The trailing 24-month average market capitalization (i.e. the total assets of a company) is applied to reduce volatility.

3.7.1.2 FTSE Shariah All-World (SAW) Index

The FTSE *Shariah* All-World Index is one of the indices created by FTSE Group with the aim to offer investment products that meet the needs of the Islamic investors internationally. This index becomes available to represent the performance of the largest and most liquid companies (*Shariah*-compliant) which rely on the FTSE Global Equity Index

[25] Dow Jones Islamic Indexes Methodology Oct. 2015 http://www.djindexes.com/islamicmarket

[26] (http://www.djindexes.com/islamicmarket/) (Accessed 1Oct. 2014)

Series (GEIS) Large and Mid-Cap companies. Using the Large and Mid-Cap stocks from the FTSE, as a base universe, the companies included in the index series and their components are then screened according to *Shariah* principles. *Shariah* screening is conducted by *Yasaar* Research company to design a Shariah-compliant index (Shubbar, 2010, p.52). It is owned by *Yasaar* Limited,[27] the leading global *Shariah* consultancy.

The screening passes the following steps. First, the companies are examined to know if they are following the *Shariah* laws or not. The non-Shariah-compliant companies will be dismissed. Then, the rest of the companies are examined on a financial basis in which the financial ratios of the companies should be met; after that, they will be included in the Islamic index (Shubbar, 2010, p.53).

The screening for business activities and financial ratios is as follows:

- **Screening of Business Activity**:

Initially, companies participating in any of the following activities will be liquidated as non-Shariah compliant:

(a) Conventional Finance (Banking, Finance, and Insurance, etc.).

(b) Non-halal food production and pork-related products (any other activity related to non-halal food and pork).

(c) Alcohol.

(d) Tobacco.

(e) Entertainment (Casinos, Gambling, and Pornography).

(f) Weapons, arms and defense manufacturing.

[27] Yasaar Shariah consultancy Ltd. provides Shariah solutions for Banking and Finance. Further details on Yasaar Ltd can be found at: http://www.yasaar.org

- **Financial Ratio Screens:**

After that, the remaining companies should be screened on a financial basis. The following conditions of financial ratios must be met for companies to be considered compliant of Shariah:

(a) Debt is less than 33% of total assets.

(b) Cash and Interest bearing items are less than 33% of total assets.

(c) Accounts receivable and cash are less than 50% of total assets.

(d) Total interest and non-compliant activities income should not exceed 5% of total revenue.

The FTSE Shariah All-World index includes the stocks of a variety of companies around the world which are divided into Developed and Emerging segments.

The index consists of large and medium companies from different industries, and the top 10 constituents of the index are: Exxon Mobil, Total, Chevron (Oil & Gas), BP, Microsoft (Technology), Johnson & Johnson, Procter and Gamble (Personal and Household Goods), Novartis (Health Care), Pfizer, and Coca-Cola (Food & Beverage)[28]

3.7.1.3 Jakarta Islamic Index

The Jakarta Islamic Index (JII) is an Islamic stock market index founded on July 3, 2000 on the Jakarta Stock Exchange (known also as Indonesia Stock Exchange (IDX) to facilitate the trading of public companies according to Islamic principles code and following the Shariah law which prohibits: speculation, gambling, and traditional financing and banking. The JII may not list companies that produce or distribute goods such as food, drink, or morally harmful items which are inconsistent with Islamic values.

The JII must meet performance requirements as well as procedural standards, such as:

- The share should be listed on the exchange market for at least three months before application in the index.

[28] For more information on the FTSE (GEIS), visit the FTSE Shariah website: http://www.ftse.com/shariah

- The company's financial report (annual or mid-year) must have an obligation asset ratio of no more than 90%.
- Rank in the top 60 shares based on the previous year's average Market Capitalization.
- Rank in the top 30 shares based on the previous year's average liquidity in the regular market.
- The listed share will be re-evaluated every six months, once in January and another in July.

3.7.1.4 KAT50

January 2011 saw the commencement of the launching of Turkey's Istanbul stock exchange participation index which comprises of 30 companies that comply with Islamic principles[29]. The index incorporated companies that are not active in the fields of interest-based financing. It also included companies that do not deal or involved in producing alcoholic drinks, gambling, packaging of pork meat, tobacco products, entertainment, media, advertisement, tourism, weapon production, taking interest on gold or foreign currency trade.

However, these companies are required to have achieved some financial ratios in order to be accepted in the participation index and the rate of total interest-bearing debt of companies willing to join the index to that of the market capitalization should not be more than 30% , in addition to this, the rate of interest-bearing cash and securities to market capitalization should not be more than 5%[30] . In the present time, the participation index encompasses 50 companies and the index code is KAT50 and its index, as of July 9; 2014 was calculated, using Price and Return index data value calculations, respectively. The top 50 companies with the highest public market capitalization of stocks that is consistent with these rules constitute the index companies. Stocks are composed of group A & B, which include Real Estate and venture capital investment trusts, traded at BIST national market and corporate product market. Stocks in this index are subjected to quarterly periodic review[31]

[29] https://www.reuters.com/article/turkey-islamicindex-refile/refile-istanbul-stock-exchange-launches-islamic-style-index-idUSLDE7050MH20110106 (08.12.2017 23: 17)
[30] http://www.katilimendeksi.org/subpage/121/index_info (08.12.2017 21: 10)
[31] http://www.katilimendeksi.org/subpage/121/index_info (08.12.2017 21: 22)

4 ISLAMIC AND CONVENTIONAL STOCK MARKETS: PERFORMANCE, CAUSALITY AND DETERMINANTS

4.1 Islamic and Conventional Stock Market Performance

The Islamic stock market has recently been evolving to become an integral part of the global financial system. As the international financial integration starts increasing and strengthening, Islamic stock market has not only attracted the Muslims but also the non-Muslims investors who desire investing in socially responsible portfolios. As a result, Islamic indexes has been founded such as, Dow Jones Islamic Market Index (DJMI) and FTSE Global Islamic Index Series, which are interested in the stock of corporations that are compatible with the Islamic law. Because of the morality of the Islamic financial system, the products seem to be more attractive to reinsure investors, stabilize financial systems and help to avoid future financial downturns (Jawadi, et al., 2014, p.11)

On other hand, the high volatility in the stock market scan has a deep economic influence on the economy and the daily life of people. A collapse in stock market prices has the ability to cause widespread economic troubles. The most famous one is the 1929 crash which was the main factor that caused the 1930s great depression. On the other hand, daily volatility in the share prices can also have an impact on the economy.

The global financial crisis started in the USA in 2007 and its effects spread to the rest of the world in 2008 (Ellaboudy, 2010; Kassim and Majid, 2010). It goes without saying that many of the stock markets were affected by the crisis. At the same time, the Islamic stock markets were not immune from this effect (see for e.g. Jawadi et al. 2014; Hayat & Kraeussl 2011; Albaity and Ahmad 2008)

This section highlights the performance of Islamic indices compared to their conventional counterparts and the impact of the subprime crisis on their performance. The study divided the period of analysis in this section into three periods, namely the pre-crisis period (January 2000 to July 2007), during crisis period (August 2007 to December 2008); (following: Kareem, et. al., 2010; Moeljadi, 2012; Arouri and Jawadi, 2009) and after crisis period from January 2009 to December 2014.

This investigative research was done adopting the monthly total return and the risk-adjusted by employing descriptive statistics in addition to the "Sharpe ratio”

4.1.1 Literature review

A number of studies have emerged addressing different aspects of the stock market performance. This section reviews some of the studies which deal with the performance of both conventional and Islamic indices as well as the impact of the global crises on their performance.

The financial performance of Islamic and conventional indexes was studied by Jawadi et al. (2014). Islamic and conventional indices were selected from three major regions as a sample study namely from; the USA, Europe, and the World. The analysis of daily closing price of indices covered the period 2000–2011. To achieve the objectives of the study, different performance ratios (Sharpe Ratio, Treynor Ratio, and Jensen Alpha) and CAPM-GARCH model were utilized to provide a precise performance. The findings pointed out that while conventional stock indices seemed outperformed before the crisis, the Islamic stock indices have outperformed them during the crisis.

Reddy and Fu (2014) compared the performance of the *Shariah*-compliant stocks and the conventional stocks. The study was applied on Australian Stock Exchange over the period 2001-2013. Their findings reported that despite the significant difference in the performance of the Islamic and conventional stocks listed on the Australian stock exchange in terms of risk, the performance of both Islamic and conventional tends to be similar.

Abdelkader and Salem (2013) tried to investigate the performance of Islamic microfinance institutions compared to conventional counterparts. This study was applied on the MENA region during the period 2005-2010. The analysis of non-parametric data envelopment (DEA) showed that there are no significant differences in the efficiency of the Islamic institutions and conventional institutions. That means that the religion and the use of Shariah-compliant products do not affect the efficiency of microfinance institutions in the MENA region.

The main objective of the study of Norman, et. al. (2013) is to compare the performance of Shariah-based and conventional unit trust fund in Malaysia. The data of seven Islamic equity funds and seven conventional equity funds were computed from January 2003 to December 2012. To evaluate the performance of unit trust funds, Sharpe index model, Treynor index model, and Jensen index were used. The result reported that the performance of conventional unit trust funds was outperformed during pre-crisis and after crisis period, while Islamic unit trust funds have better performance during the period of financial crisis. Also, the analysis showed that Islamic funds have lower standard deviation than the conventional funds which implied that Islamic funds are less risky than conventional funds.

Ahmad and Haron (2012) compared the performance of Islamic unit trust funds with the conventional trust funds in Malaysia. The *Syariah* index represented the market benchmark for the Islamic funds while for the composite index of the Kuala Lumpur Stock Exchange (KLSE) was used to represent conventional funds. The analysis of monthly data spanned over a period from February 2000 to January 2003 by using Adjusted Sharpe Performance Model, Treynor model, and Adjusted Jensen Model to evaluate the performance of funds. The results reported that on average, the performance of conventional fund was outperformed on the Islamic funds. Nevertheless, t-test analysis reported that there is no significant difference in the mean performance of both funds.

The study of Lean and Parsva (2012) addressed the performance of Islamic indices compared with conventional indices in Malaysian FTSE market. The Capital Market Pricing Model (CAPM) was employed to investigate the performance of five indices by using daily data over the period March 2007- February 2011. The findings revealed that the performance of Islamic indices achieved excess in return during the entire period with the same level of risk, but during the crisis, this excess of return was lost. In addition, the results indicated that the Islamic indices have low risk and high risk-adjusted returns. Moreover, all Malaysian indices became risky and sensitive indices after the financial crisis.

Also, Albaity and Mudor (2012) examined the difference of returns, the short dynamics and the long run relationship of Islamic indices in comparison to the conventional markets during the subprime period, pre and post-subprime crisis. The results of the study which is conducted in the USA and Malaysia showed the absence of difference on returns between the Islamic indices and conventional ones. The researchers found that the co-integration in the Islamic indices exists in the pre-crisis and post-crisis periods; however, there is no co-integration in the conventional indices in the sub-periods.

Hayat and Kraeussl (2011) addressed the issues of the risk and return characteristics of Islamic equity funds. The sample included 145 Islamic equity funds worldwide during the period 2000 to 2009. By applying CAPM, the findings of the study showed that Islamic equity funds underperformed compared to conventional equity benchmarks.

Shubbar (2010) aimed to identify the impact of 2008 financial crisis on Islamic indices and conventional indices. The study was applied on FTSE *Shariah* All-World Index and Dow Jones Islamic Market Index as Islamic ones and FTSE Global All-Cap Index and Dow Jones Global Total Stock Market Index as conventional ones. To measure the performance of indices many models were utilized namely Capital Asset Pricing Model (CAPM), Sharpe Ratio, Jensen's Alpha, Appraisal Ratio, Treynor Ratio, Market Timing Ability and Modigliani & Modigliani Model. The findings showed that the conventional indices returns are slightly better than the Islamic indices returns, while Islamic stock indices were comparatively more stable than their conventional counterpart.

Albaity and Ahmad (2008) examined the financial performance of Islamic index (Kuala Lumpur Syariah Index) compared with the conventional counterpart (Kuala Lumpur Composite Index) in Malaysia. To measure risk-adjusted returns, the study utilized Sharpe ratio, Treynor ratio, and Adjusted Jensen's Alpha, while causality and Johansen co-integration tests were employed to examine the relationship between two indices during the period 1999–2005. The results of this study indicated that there are significant statistical differences in performance between Islamic and conventional stock market indices. Also, the analysis noted that bi-directional causality relationship between the two indices in short-run and long-run.

Sadeghi (2008) studied the impact of applying the Shariah-compliant Index on the performance and liquidity of shares in the stock market of Malaysia. In order to evaluate mean cumulative abnormal returns, the study utilized an event study methodology. The findings indicated that the introduction of Shariah-compliant had a positive influence on the stock market performance.

Abdullah et al. (2007) tried to investigate the differences in performance between conventional and Islamic mutual fund in Malaysian stock market. In order to estimate the mutual funds' performance, standard methods were used namely; adjusted Sharpe index, Treynor's Index, Jensen Alpha and Adjusted Jensen Index. The main result of this study was that the performance of the Islamic funds was better than the conventional counterpart during the bear period of economic; however, the performance of conventional funds recorded better results than the Islamic funds during the period of bullish economic conditions.

By using Value-at-Risk (VaR) Al-Zoubi and Maghyereh (2007) compared the performance of Dow Jones Islamic Index (DJIS) and the Dow Jones (DJIM) WORLD Index in terms of risk during the period 1996–2005. The finding showed that the value of VaR is less for Islamic typed DJIS than that of the conventional index DJIM. This result is interpreted mainly to the principle of Islamic finance which depended on profit-and-loss sharing instead of borrowing.

Hussein (2004) tried to investigate the hypothesis that says: ethical investment has lower performance compared with its conventional benchmarks. He applied the FTSE Global Islamic Index, FTSE All-World Index and FTSE4Good index covering the period July 1996 to August 2003. This study adopted the raw risk and risk-adjusted to measure the performance of indices by employing Jensen return (2008) model and CAPM. The analysis indicated that both the FTSE Global Islamic Index and FTSE All-World index performed were similar over the entire period. However, during bull market period the FTSE Global Islamic Index had statistical significance, positive and abnormal performance, while its performance was lower than that of the conventional indices in the bear market period. The finding asserted that the employment of ethical screening does not have a negative influence on performance of Islamic Index.

Table 3 summarizes some of these previous studies comparison on Islamic and conventional stock market performance.

Table 3: Summary of Empirical Studies on Islamic and Conventional Stock Market Performance

Author(s)	Sample	Model(s)	Finding
Jawadi, et. al. (2014)	USA, Europe, and the World 2000-2011	Sharpe, Treynor, Jensen Alpha and CAPM-GARCH	Conventional stock indices outperformed before the crisis, while Islamic stock indices have outperformed them during the crisis
Reddy and Fu (2014)	Australia 2001-2013	Sharpe ratio, Treynor ratio, and Jensen's Alpha	Despite the significant difference in performance of the Islamic and conventional stocks listed on the Australian stock exchange in terms of risk, the performance of both Islamic and conventional tends to be similar
Ahmad and Haron (2012)	Malaysian Market 2000-2003	Adjusted Sharpe, Treynor, Adjusted Jensen Model	There is no significant difference in the means performance of Islamic and Conventional funds.
Abdelkader and Salem (2013)	MENA region 2005-2010	non-parametric data envelopment (DEA)	There is no significant differences in the efficiency of the Islamic institutions and conventional institutions. This means that the religion and the use of Shariah-compliant products do not affect the efficiency of microfinance institutions in the MENA region.
Norman, et. al. (2013)	Malaysia 2003-2012	Sharpe, Treynor, and Jensen	The performance of conventional unit trust funds outperformed during pre-crisis and after crisis period, while Islamic unit trust funds have better performance during the period financial crisis
Lean and Parsva (2012)	Malaysia 2007-2011	CAPM	The performance of Islamic indices achieved excess in return during the entire period with the same level of risk but during the crisis, this excess of return has been lost.
Hayat and Kraeussl (2011)	worldwide 2000-2009	CAPM	Islamic equity funds were underperformers compared to conventional equity benchmarks
Shubbar (2010)	FTSE Shariah, DJIM, FTSE Global All-Cap and Dow Jones Global 1 Jan. 2008- 31 Dec. 2008	CAPM, Sharpe Ratio, Jensen's Alpha, Appraisal Ratio, Treynor Ratio, and M & M Model.	The findings showed that the conventional indices returns are slightly better than the Islamic indices return, While, Islamic stock indices were comparatively more stable than their conventional counterpart.
Albaity and Ahmad (2008)	Malaysia 1999-2005	Sharpe ratio, Treynor ratio, and Adjusted Jensen's Alpha	There are significant statistical differences in performance between Islamic and conventional stock market indices
Sadeghi (2008)	Malaysia	event study methodology	The introduction of Shariah-compliant had a positive influence on the stock market performance.
Abdullah, et al., (2007)	Malaysian stock market 1995-2001	Treynor's Index, Jensen Alpha, and Adjusted Jensen Index	The performance of the Islamic funds was better than the conventional counterpart during the bear period of economic; however, the opposite happened during the period of bullish economic conditions
Al-Zoubi and Maghyereh (2007)	worldwide 1996-2005	Value-at-Risk (VaR)	The finding showed that the value of VaR is less for Islamic one DJIS than for conventional index DJIM
Hussein (2004)	UK 1996-2003	Jensen & CAPM	The employing of ethical screening does not have a negative influence on performance of Islamic Index

4.1.2 Data and Sample

In order to compare the performance of Islamic stock indices with the performance of conventional stock indices, five countries namely: USA, UK, Canada, Japan, and Indonesia, which have both Islamic stock market and conventional stock market, were selected as sample studies. These indices (as shown in Table 4) are: Dow Jones Islamic Market U.S. Index (DJIMUS), S&P500 Composite Index (S&PCOMP), Dow Jones Islamic Market U.K. Index (DJIMUK), FTSE 100 Index (FTSE100), Dow Jones Islamic Market Canada Index (DJIMCA), Composite Index (S&P/TSX), Dow Jones Islamic Market Japan Index (DJIMJAP), Nikkei225 stock average index (NIKKEI225), Jakarta Islamic Index (JII) and Jakarta Composite Index (JCI). The data of indices were obtained from DATASTREAM.

Table 4: Selected Indices for the study

Country	Name of the index	Short name	Sector	Inception	Type
USA	Dow Jones Islamic Market U.S.	DJIMUS	Composite	29.12.1995	Islamic
	S&P500 Composite Index	S&PCOMP	Large cap	04.03.1957	Conventional
UK	Dow Jones Islamic Market U.K. Index	DJIMUK	Composite	05.24.1999	Islamic
	FTSE 100 Index	FTSE100	Large cap	03.10.1984	Conventional
Canada	Dow Jones Islamic Market Canada Index	DJIMCA	Composite	29.12.1995	Islamic
	S&P/TSX Composite Index	SPTSX	Composite	01.01.1977	Conventional
Japan	Dow Jones Islamic Market Japan Index	DJIMJAP	Composite	29.12.1995	Islamic
	Nikkei 225 stock average index	NIKKEI 225	Large-cap	07.09.1950	Conventional
Indonesia	Jakarta Islamic Index	JII	Composite	03.07. 2000	Islamic
	Jakarta Composite Index	JCI	Composite	25.09.1992	Conventional

The monthly data on total return for indexes are utilized in the analysis. The analysis carried out by covering 180 months from January 2000 through December 2014 (except the data of Indonesia which started from July 2000 to December 2014). An earlier start data of Indonesia was not possible due to the fact that the information on Jakarta Islamic Index was not available as at the time of starting the research). The total return on stock of all indices denominated in the home currency of each respective countries in order to avoid potential distortion caused by the currency devaluations. The study divides the period of analysis in this section into three periods, namely the pre-crisis period (January 2000 to July 2007), during crisis period (August 2007 to December 2008) following: (Abdul Kareem et al., 2010;) (Moeljadi, 2012); (Arouri & Jawadi, 2009) and after crisis period from January 2009 to December 2014.

4.1.3 Methodology

The main concern of this part of the study is a comparison of conventional and Islamic indices performance, which involves studying the impact of the global crisis on their performance. To achieve this objective, the descriptive analysis and Sharpe ratio analysis are utilized.

4.1.3.1 Descriptive Statistics

The first phase of data analysis is descriptive analysis. Descriptive statistics are numbers that quantitatively describe or summarize a sample (Mann, 1995), rather than use the data to learn about the population that the sample of data is thought to represent. The descriptive analysis helps to provide a preliminary description of the natural data of time series. In addition, it enables a comparison of the basic performance indicators of the stock indices. It is suitable to give an accurate description or characteristics of variables such as the number of observation (N), the mean, the standard deviation (Std. Dev), maximum (Max) minimum (Min), skewness and kurtosis.

4.1.3.2 Sharpe Ratio

In order to provide a comprehensive analysis of risk and returns on both Islamic and conventional stocks indices, three common ratios are used to measure performance which include the Sharpe ratio, Treynor ratio, and Jensen's Alpha. The Sharpe ratio (SR) is explained in this section, which is the most commonly used method to measure finance and economic performance in literature.

The SR was introduced by William Sharpe in 1966. Although SR was introduced six decades ago, it can be considered as the first risk-adjusted performance measure. It was found widely favored in literature and in practice because it is simple and easy to apply (Cvitanić, et.al, 2008). The SR measures the relation between the risk premium and the standard deviation of the rate of total returns generated by the index (i.e. it reflects the return with regards to its risk).

The formula of SR can be written as follows

$$SR = \frac{R_i - R_f}{\sigma_i} \quad \ldots (1)$$

where:

R_i: the average rate of total return of index *I* for the sample period.
R_f: the average return of a risk-free rate for the sample period.
σ_i: the standard deviation of rate of total return of index *I* over the sample period.

Standard deviation σ_i is used to measure the risk of index. It can be calculated as shown in equation 2:

$$\sigma = \sqrt{\frac{\sum (R_{i,t} - R_i)^2}{N-1}} \quad \ldots (2)$$

Where $R_{t,i}$ is the total on return of the index *i* at time *t*, R_i is the average total return for index *i* and *N* is the number of observations.

The returns on the indices are obtained from total return of indices. The rate of total return for each index is calculated as equation 3:

$$R_{i,t} = TR_t - TR_{t-1}/TR_{t-1} \quad \ldots. (3)$$

Where:

$R_{i,t}$ is rate of monthly change of total return on *i* index at time *t,* TR is total return on index *i* at time *t,* $TR_{i,t-1}$ is total return on index *i* one period before time *t*.

4.1.4 Data Preprocessing

After selecting the variables, the data is collected according to the selected variables, the data should be prepared for analysis purposes. This stage is generally called data pre-processing and the aim of this step is to avoid the discrepancy and noise in the time-series of data and to further find out the relationship between variables. The data of indices was transformed into natural logarithms to achieve stationary in data and to prevent spurious results in order to reduce the heteroscedasticity.

Using the state variables as mentioned above, and following (Kasa, 1992; Masih and Masih, 2001; Avcı, 2006; Saiti, et al., 2014; Naseri and Masih, 2014;Dewandaru, et. al., 2014; Yilmaz, et. al., 2015) index total return is calculated as given in the equation 4:

$$TR_{i,t} = \ln (TR_{i.t} / RT_{i.t-1}) \;\ldots.\; (4)$$

where: $TR_{i,t}$: denotes stock returns on index i during the month t, $TR_{i,t}$ and is the total return of the index i during the month t and, $RT_{i.t-1}$ is the total return of the index i during the month t-1.

4.1.5 Empirical Findings

4.1.5.1 Descriptive Statistics

Descriptive statistics were calculated for the rate of change of the monthly total return series of the ten indices from five stock markets in their local currencies over the whole 15-year time period and for the three sub-periods. Tables 5, 6,7 and 8 show in details the results of the descriptive analysis, in particular, the mean, the standard deviation (Std. Dev), and maximum (Max) and minimum (Min). In addition, skewness and kurtosis statistics were calculated in order to examine the symmetry of the total return distribution.

Table 5: Descriptive Statistics of 01/01/2000 – 31/12/2014

Period	country	Canada		UK		USA		Japan		Indonesia	
	Type of index	S&PTSX	DJISMCA	FTSE 100	DJIMUK	S&PCOMP	DJISMUS	NIKKEI 225	DJIMJAP	JCI	JII
All period	Mean	0.0061	0.0046	0.0036	0.0032	0.0047	0.0041	0.0024	-0.0004	0.0137	0.0153
	Maximum	0.1684	0.2559	0.1245	0.1805	0.1599	0.1451	0.1580	0.1146	0.1832	0.1828
	Minimum	-0.1678	-0.3026	-0.1356	-0.1568	-0.1664	-0.1514	-0.2455	-0.1503	-0.2618	-0.2837
	Std. Dev	0.0462	0.0842	0.0434	0.0546	0.0486	0.0512	0.0602	0.0496	0.0670	0.0728
	Skewness	-0.6867	-0.5379	-0.5460	-0.1237	-0.5253	-0.4656	-0.4081	-0.4962	-0.4065	-0.3906
	Kurtosis	2.3588	1.7173	0.6298	1.0622	1.5163	0.8440	0.8816	0.2618	1.1846	1.5664

Some important points can be noted from the descriptive analysis for the whole period in Table 5. The mean total return varies across the Islamic and conventional indices in the five markets. Indonesia performed the best in both Islamic index and conventional index with a mean total return of (1.53% and 1.37%) per month, respectively. While the worst performing index was Islamic index of Japan with a negative mean total return of (-0.04%).

On the other hand, when comparing both indices (conventional and Islamic) in each country, the analysis indicates the following results: on the performance basis, which was measured by the total return, the conventional indices appear higher than the Islamic counterparts in all countries except in Indonesia. While on a risk basis, which was measured by the standard deviation, the Islamic indices appear risky than the conventional counterparts except in Japan. This result is not considered somewhat a surprising result, as the conventional indices are more diversified than those restrictive Islamic indices.

Skewness is the slope of the distribution and should be within -2 and +2 range for normally distributed series. Negative values indicate that data are skewed left and positive values indicate that data are skewed right. While kurtosis is the peak of a distribution and should be within -3 and +3 range when data is normally distributed. A flatter distribution has a negative kurtosis. However, a positive kurtosis value indicates that the distribution has heavier tails and a sharper peak than the normal distribution.

It can be seen in Table 5 in terms of the skewness that all value of indices is negatively skewed which means that the distribution has a left tail. However, all the kurtosis values are positive and within 0 and +3 range which indicated that the distribution is platykurtic with lower than or normal kurtosis.

Table 6 shows the descriptive statistics of total return pre-crisis of the Islamic and conventional indices in the five markets. Both Indonesian indices performed the best in the pre-crisis with average of total return of (2.09% and 1.51%) per month and the Islamic Index outperformed the conventional counterpart. The worst performing index was the Japanese Islamic index with a negative mean total return of (-0.24%).

Table 6: Descriptive Statistics of 01/01/2000 – 31/07/2007

Period	country	Canada		UK		USA		Japan		Indonesia	
	Type of	S&PTSX	DJISMCA	FTSE 100	DJIMUK	S&PCOM	DJISMUS	NIKKEI 225	DJIMJAP	JCI	JII
Pre-crisis period	Mean	0.0080	0.0070	0.0028	0.0033	0.0026	0.0008	0.0014	-0.0024	0.0151	0.0209
	Maximum	0.1037	0.1966	0.0700	0.0880	0.1061	0.1449	0.1150	0.1146	0.1588	0.1828
	Minimum	-0.1267	-0.3005	-0.1356	-0.1278	-0.0952	-0.1372	-0.1296	-0.1379	-0.1340	-0.1853
	Std. Dev	0.0419	0.0816	0.0389	0.0433	0.0392	0.0487	0.0537	0.0517	0.0656	0.0725
	Skewness	-0.6531	-0.7673	-1.0478	-0.3531	-0.2736	-0.3527	-0.2018	-0.3897	-0.1884	-0.0841
	Kurtosis	0.7247	1.5583	1.3826	0.0479	0.3444	0.8256	-0.3186	0.0606	-0.4489	-0.0199

The descriptive statistics also indicates that, at pre-crisis period, the conventional indices outperformed the Islamic counterparts in Canada, USA, and Japan. In contrast, the Islamic indices outperformed the conventional counterpart UK and Indonesia as well, and its indices appear risky than the conventional counterparts except in Japan.

Table 7 shows the descriptive statistics of total return during crisis, the most important thing to note here is that all indexes, without any exception, recorded negative monthly average returns, which means all average of total return of the five countries were less than the rate of free risk of return during the crisis. Furthermore, the range of average was between (-0.0235) and (-0.0402). This explains the obvious effect of the financial crisis on all selected markets. However, the Islamic indexes were less affected compared to conventional counterparts in USA and Japan. In terms of standard deviations, all indexes (Islamic and conventional) recorded greater volatility in the period during crisis compared to other periods, while the Islamic indices appear riskier than the conventional counterparts except in Japan.

Table 7: Descriptive Statistics of 01/08/2007 – 31/12/2008 period

Period	country	Canada		UK		USA		Japan		Indonesia	
	Type of index	S&PTSX	DJISMCA	FTSE 100	DJIMUK	S&PCOMP	DJISMUS	NIKKEI 225	DJIMJAP	JCI	JII
During crisis period	Mean	-0.0246	-0.0314	-0.0235	-0.0321	-0.0323	-0.0249	-0.0402	-0.0281	-0.0288	-0.0301
	Maximum	0.0554	0.1263	0.0535	0.0720	0.0512	0.0542	0.0877	0.0654	0.1272	0.1709
	Minimum	-0.1678	-0.3026	-0.1131	-0.1568	-0.1664	-0.1514	-0.2455	-0.1503	-0.2618	-0.2837
	Std. Dev	0.0680	0.1198	0.0518	0.0650	0.0606	0.0584	0.0742	0.0543	0.0910	0.1061
	Skewness	-1.0287	-0.7060	-0.2911	-0.4343	-0.9890	-0.9641	-1.1014	-0.4398	-0.8439	-0.6969
	Kurtosis	0.1147	0.1547	-1.0960	0.0813	0.6425	0.1573	2.9327	0.5406	1.7434	1.2863

Table 8: Descriptive Statistics of 01/01/2009 – 31/12/2014 period

Period	country	Canada		UK		USA		Japan		Indonesia	
	Type of index	S&PTSX	DJISMCA	FTSE 100	DJIMUK	S&PCOMP	DJISMUS	NIKKEI 225	DJIMJAP	JCI	JII
post-crisis period	Mean	0.0111	0.0100	0.0109	0.0115	0.0161	0.0152	0.0137	0.0086	0.0219	0.0194
	Maximum	0.1684	0.2559	0.1245	0.1805	0.1599	0.1451	0.1580	0.1000	0.1832	0.1781
	Minimum	-0.1108	-0.2183	-0.1039	-0.1567	-0.1477	-0.1295	-0.1216	-0.1169	-0.1283	-0.1270
	Std. Dev	0.0430	0.0766	0.0445	0.0616	0.0520	0.0498	0.0605	0.0435	0.0589	0.0600
	Skewness	0.2441	0.3611	-0.1443	0.1108	-0.4592	-0.3931	-0.1403	-0.5269	0.1783	0.2894
	Kurtosis	2.9246	1.8842	0.3272	0.7829	1.3350	0.9046	-0.2159	0.4791	1.0884	0.9898

Table 8 shows the descriptive statistics of total return after the crisis. With regard to the mean total return on the picture overturned, all indexes witnessed positive average returns. Moreover, the highest average of total return was recorded for Indonesian conventional index with value of 0.0219 and the lowest index was recorded in Islamic index of Japan. However, in post-crisis period, all indices, volatility recorded a decline compared to the crisis period.

The standard deviation of Islamic indices in Canada, UK, and Indonesia are higher than the conventional counterparts, while the result is inverse in each of the USA and Japan.

4.1.5.2 Sharpe Ratio

According to SR, the higher the SR of index, the greater its financial performance. Indeed, if the value of SR is positive (resp. negative), the index *i* will outperformed (resp. underperforms) the referential given by the ratio of risk-free asset. Table 9 shows risk-adjusted returns for indices (both Islamic and conventional) of five countries using SR. The results report that during the entire period in all the five countries, the conventional indices outperformed the Islamic counterparts except in Indonesia (the SR are 10.3% and 8.8% of JII and JCI, respectively). As well as, during the pre-crisis period, it can be noted that the Islamic index in Indonesia outperformed conventional index (the SR are 15.6% and 8.4% of JII and JCI, respectively), while the Islamic index of UK outperformed the conventional counterpart a bit, and the both type of indices in USA and Japan recorded negative SR, respectively.

Table 9: Sharpe ratio of indices total return

Country	Canada		UK		USA		Japan		Indonesia	
Type	SPTSX	DJIMCA	FTSE100	DJIMUK	S&PCOMP	DJIMUS	NIKKEI225	DJIMJAP	JCI	JII
Whole Periods	**0.090**	0.030	**0.080**	0.057	**0.045**	0.032	**0.012**	-0.042	0.088	**0.103**
Pre-Crisis	**0.122**	0.050	0.071	**0.074**	**-0.033**	-0.064	**-0.025**	-0.101	0.084	**0.156**
During Crisis	-0.403	**-0.286**	**-0.461**	-0.500	-0.600	**-0.496**	-0.572	**-0.559**	-0.395	**-0.350**
Post-Crisis	**0.242**	0.122	**0.244**	0.186	**0.301**	0.297	**0.225**	0.195	**0.277**	0.230

The result during the crisis period clearly indicated that the dropping in SR for all indices and all values become negative, meaning that the rates of total return were less than the average of risk-free rate in their countries. Nonetheless, the performance of Islamic indices in all countries except UK was better than their conventional counterparts. The post-crisis period results indicated the recovery of all the indices to achieve positive SR and positive returns and the performance of conventional indices become better than the performance of Islamic counterparts.

4.2 The Co-Movement Relationship Between Islamic Stock Market and Conventional Stock Market

It is recognized that global stock markets relationships play an important role in the decisions of the international investors all over the world. From the empirical evidence of modern portfolio theory of Markowitz, it is shown that international diversification decreases the total risk of a portfolio (Naseri and Masih, 2014). To design a good-diversified portfolio, the investors should understand how the stock markets returns are related to each other. It is clear that the portfolio adjustment will be needed when the patterns of the market correlation change. All-over-the-world affected by the shocks via equity markets, the wealth channel, and the confidence effect make the monetary policy to be affected by the developments of the international stock markets. On the other hand, the correlations among the stock markets become an object of interest for the policy-makers because they indicated for the stability of the global financial system.

Islamic stock market has become an important part of the international stock markets; it has also evolved to become an integral part of the international financial system. While the process of the international financial integration gets more intensified, the question, what is the degree of co-movement between the Islamic stock markets and their conventional counterparts, still remains open. This part of study attempts to evaluate the inter-dependence between the conventional and the Islamic stock markets performance from the period between January 2000 and December 2014 covering the recent global financial crisis.

The main objective of this part of the study is to investigate the co-movement among Islamic markets and conventional stock markets. Specifically, the relationship between Islamic and conventional stock market will be analyzed by the use of Islamic and conventional indices.

The concept of co-integration is used to measure co-movement among stock markets, following Wong, et. al. (2004) and Zhou (2013). Co-integration means that there is a theoretical relationship among the variables and this relationship is not spurious, hence, they are in equilibrium in the long run. It also indicated that each variable contains information for the prediction of other variables (Naseri and Masih, 2013).

In this section of study, the co-movement between conventional stock indices and Islamic stock indices in the five countries will be discussed. The analysis in this section consists of following tests; the first is the Dikey Fuller and unit root test to examine the stationary of the data. Moreover, the Vector Auto-regression (VAR) and Granger Causality test are also used to test the co-movement between indices.

4.2.1 Literature Review

There are a number of studies in the existing literature that have addressed the stock market integration. These researchers focused on various stock markets with different sample periods and frequencies of data; they used various econometric methods and interpreted their results according to different perspectives. In spite of the miscellaneous previous studies that investigated the relationships among the stock markets, there have been, to some extent, a few studies tackling the issue of the co-movement of Islamic stock markets and conventional counterparts. The previous studies, which deal with the relationship and co-movement between financial stock markets can be classified into three categories namely: studies that investigate and compare the relationships between Islamic stock and conventional stock markets, the focuses on the linkage between the Islamic markets across countries, and the relationships between the conventional markets among themselves.

Dewandaru, (2014b) is one of the studies which addressed the issue of relationship between Islamic stock market and conventional stock market. They studied the co-movements and their transmission amongst the equity markets of the Gulf Cooperation Council (GCC) indices and other international Islamic indices (Asia Pacific, US, Eurozone, and ASEAN) as well as with Global Islamic bond index. The techniques of multi-timescale wavelet analysis and multi-horizon were used to examine the domain of time and frequency at the same time. Remarkably, there is, to some extent, a similarity between the movements in Islamic equity indices and the conventional counterparts. In conclusion, the researchers discovered the weakness in the stock market integration amongst the equity markets of GCC equity and other international Islamic indices.

In a similar study by Saiti and Masih (2014) using the time series techniques, examine the dynamic causal linkages in the daily return amongst the seven major conventional and Islamic stock indices in East Asia with analyzing seven conventional and Shariah-compliant stock indices (Asia Shariah index, FTSE Shariah China Index, Malaysia EMAS Shariah Index, Hang Seng Index, China SSE Composite Index, Nikkei 225 and KOSPI) from October 26, 2007 to March 1, 2011. The results of the study suggested that there are theoretical and long-run co-movements in Shariah China Index with the Islamic and conventional markets and that the Shariah China Index is Granger-caused by all the conventional and Islamic markets, therefore, the China conventional SSE market is followed by the Malaysia Shariah market.

With having an adverse result, Park and Masih, (2015) tried to examine the diversification opportunities between Dow Jones Islamic Market (DJIM) and some International conventional indexes. The results showed that the co-integration between the DJIM index and three conventional indexes such as DAX, Hang Seng, and KL does not exist at all. Nonetheless, S&P and DJIM are co-integrated, and that co-integration explains the long-term theoretical relations amongst the indices.

In another study, Achsani, et. al., (2007) concluded that the linkage of Islamic stock markets tends to mismatch across countries. The result shows that whereas there are significant correlations between the Islamic stock indices of US and Canada, Indonesia and Malaysia, and Japan and Asia Pacific, this is not the same result for some other Asian countries. On the other hand, the findings pointed out that, USA Islamic stock market has a strong effect on the other Islamic stock markets. Conversely, the Canadian, Malaysian, Indonesian and Asia Pacific stock markets have a weak influence on the Islamic stock market of USA.

Arshad and Rizvi (2013) studied an attempt to determine if the fundamental changes or the short-term effects influence the Islamic indices in comparison with the conventional indices. This study used continuous wavelet approach to measure co-movements between Islamic financial indices and emerging financial markets, covering a time period between 1997–2011. The findings showed that the Islamic indices are very good alternatives for investors because they are not affected by the shocks to global financial services, and they are characterized as unchangeable indices because they have stable screening standards.

According to studies which focused on the relationship between Islamic stock markets across the countries, the results are contradictory. For instance, Hussin et. al., (2013) applied Vector Auto Regression (VAR) approach in studying co-integration between Islamic stock markets and they discovered the absence of the integration between the Islamic stock market of Malaysia and Indonesia's as well as the world markets.

In similar study, Kassim and Kamil (2012) try to study the effects the global crises have caused on the integration and co-movements of Islamic stock markets. The researchers used the time series techniques of co-integration and focused on the period between February 15, 2006, to December 31, 2008. Interestingly, the researchers never found the co-integration among the Islamic stock markets in both pre-crisis and during crisis. Therefore, the long-run co-movements among the Islamic stock markets were immune to the 2007 subprime crisis.

In another study, Kassim, (2013) attempts to investigate the effect of the 2007 global financial crisis on the integration of the Islamic stock markets. The study was applied on 7 Islamic stock markets. Auto-Regressive Distributed Lag approach and the multi-variate Vector Error Correction Mechanism were used. The results of the research pointed out that the integration level of the Islamic stock market was exposed to many changes due to the global financial crisis. The level of development and the geographical factors have, during the times of crisis and non-crisis, affected the Islamic stock markets integration.

Several studies examined the inter-dependence amongst the conventional markets. The majority of the results of these studies indicated an existence of relationship. For example, Chow, Huang, et.al. (2013) conduct research on the integration of the East Asian economies with US economy with regard to the co-movement of stock market prices, and they used the varying correlations and regressions in their research. The study found integration of East Asia, among Japan, US, and China. On the other hand, it found a weak linkage between Japan and US stock markets. Bonfiglioli and Favero (2005) consider the discrepancy between the interdependence and contagion to explain the co-movements among the stock markets. The result showed that there is a significant correlation between US and German stock markets in the long-term, whereas the two stock markets are interdependence of each other in the short-term.

In et. al., (2002) employed the VAR model to study Asian stock markets, their linkages and interactions. They found the linkage between the stock markets during the crisis except in the markets of Malaysia. Moreover, during the crisis, Singapore and Australia get rising linkages compared with other Asian stock markets. The results added that despite the US market being independent during the crisis, it was still connected with the Asian Markets. And another similar study is that of Roca, et. al., (1998) that examined the price linkage in the five ASEAN markets (Malaysia, Indonesia, Thailand, Singapore, and Philippines) in long-run and short-run using co-integration technique of Johansen procedure, Granger Causality, Impulse Response function and Variance Decomposition for 1988-1995 period. The findings of their study indicated that the ASEAN markets (except of Indonesia) were very tied to each other in only the short-run periods. In addition to that result, Singapore and Thailand have many linkages with the other international markets, but Indonesia has no ties with ASEAN markets. Also, a similar result was conducted by Kasa (1992) when he studied common stochastic trends technique to test the co-integration in the stock markets of the USA, UK, Germany, Japan, and Canada and used quarterly and monthly data from January 1974 through August 1990. He found out that the co-integration exists in the countries' stock markets, and this trend, according to the factor analysis, is very necessary for the Japanese stock markets, unlike the Canadian stock markets.

The divergence in the result of the previous studies might be partly explained by not only the differences in data but also the different methodologies implemented to inspect the relationship between different stock markets as well as the nature of markets and the explanation of factors.

This study contributed to this literature by (i) investigating the co-movement issue through the implementation of different co-movement measures, (ii) and focusing on different international regions including Western countries and one of emerging countries.

4.2.2 Data

In order to study the co-movement between conventional stock indices and Islamic stock indices, monthly data of closing prices for indices are utilized in the analyses. The analysis was carried out using data of 2000 – 2014 data periods.

4.2.3 Methodology

This part of the study aims to investigate the co-movement among Islamic and conventional stock markets indices. In order to achieve this aim, a set of analysis methods are utilized which include the stationarity test, Vector Autoregressive Model, Engle-Granger Co-integration and Granger Causality test.

4.2.3.1 Stationarity Test

In order to conduct valid statistical inferences, a key assumption in time series analysis must be made. This assumption is the modeling time series called the covariance stationarity. A time series is stationary if its properties, such as mean and variance, do not change over time. If a time series is not stationary, the analysis results will have no economic meaning. Therefore, a non-stationarity time series gives spurious results. However, it can convert the data to a stationarity time series by using its differences. Prior to that, it must have defined whether a time series is stationarity or not. This tests ensure that distortions are only temporary and will disappear and return to their long-run means. There are many versions of these tests, but the most common is augmented Dickey-Fuller (ADF) unit root test, which was developed by Dickey and Fuller (1979), and it was utilized. This is very important to examine the stationarity of the data and to avoid spurious regression.

4.2.3.2 Vector Autoregressive Model (VAR)

VAR model is one of the most successful, easy to use and flexible models for the analysis of multiple time series analysis. It has been used extensively since the 1950s.VAR is an extension of the autoregressive model to efficiently multivariate time series. Experience has shown that the VAR model is very useful for understanding the dynamic behavior of financial and economic time series (Zivot and Wang, 2006).

4.2.3.3 Engle-Granger Co-integration

The Engle-Granger co-integration test is one of the most important tests, which is utilized in several studies like Kanas (1988); Garcia-Pascual (2003); Phengpis and Apilado (2004); Kasa (1992); Choudhary (1994); Arshanapalli and Doukas (1993); Gilmore and

McManus (2002); and Corhay et al. (1993). It studies the linkage among stock markets, that is, it examines whether the indices are theoretically linked or not. If the indices are co-integrated to each other, it means that there is a co-movement among these stock markets in the long term reaching the equilibrium, even if they may be moved differently in the short term (Park and Masih, 2015).

4.2.3.4 Granger Causality test

Granger Causality tests are used to investigate the causal relationship between variables in economics models. Therefore, according to Granger causality, if a time series X "Granger-causes" a time series Y, then the past values of X should include information that helps to predict Y. The mathematical formulation of Granger Causality is based on linear regression models of stochastic processes (Granger 1969).

The Granger Causality test is utilized to investigate the causal relationship between the conventional indices and the Islamic counterparts and the co-movement linkage between them.

4.2.3.5 Preprocessing data

After selecting the variables, the data is collected according to the selected variables; the data should be prepared for analysis purposes. This stage is generally called data pre-processing. The aim of this step is to avoid the discrepancy and noise in the time-series of data and to find out the relationship between variables. The data of indices was transformed into natural logarithms to achieve stationarity in data and to prevent spurious results and also to reduce the heteroscedasticity.

Using the state variables as mentioned above (Kasa, 1992; Masih & Masih, 2001; Avcı, 2006; Saiti, et. al., 2014; Naseri and Masih, 2014; Dewandaru, et. al., 2014; Yilmaz, et al., 2015) the index total return is calculated thus:

$$R_{i,t} = \ln (TR_{i.t} / TR_{i.t-1}) \quad \ldots(5)$$

where: $R_{i,\,t}$: denotes stock returns of index *i* during the month *t*, $TR_{i,\,t}$ is the total return of the index *i* during the month *t* and $TR_{i.t-1}$ is the total return of the index *i* during the month *t-1*

4.2.3.6 Unit Root test

ADF test is used in determining whether there is a unit root in the total return of indices used in the study. The results of ADF are shown in Table 10. The null hypothesis of a unit root is not rejected for all indices in log level, whereas it is rejected when it is taken in their log first differences. Therefore, the results support the stationary series at 0.05 level, and we can say that it satisfies the necessary conditions for co-integration test.

Table 10: Unit Root Test Results for series of study

Country	Variables	Augmented Dickey-Fuller test- ADF			
		Level		1st Diff.	
		Statistic	P-value	Statistic	P-value
Canada	Log(DJIMCN)	-1.97	0.299	-13.29	0.0000
	Log(S&PTSX)	-1.11	0.710	-11.29	0.0000
UK	Log(DJIMUK)	-1.78	0.390	-15.27	0.0000
	Log(FTSE100)	-1.89	0.334	-13.64	0.0000
USA	Log(DJIMUS)	-0.65	0.855	-13.16	0.0000
	Log(S&PCOMP)	-0.79	0.820	-12.52	0.0000
Japan	Log(DJIMJAP)	-3.17	0.023	-12.08	0.0000
	Log(NIKKEI 225)	-2.13	0.232	-11.45	0.0000
Indonesia	Log(JII)	-0.90	0.785	-10.68	0.0000
	Log(JCI)	-0.35	0.913	-10.20	0.0000

Note: All monthly returns were calculated as log using monthly closing prices.

4.2.3.7 Vector Autoregressive Model (VAR)

4.2.3.7.1 Select optimal length of Lags.

Prior to carrying out the co-integration test, we applied VAR analysis to know the number of the lags needed for co-integration test. Table 11 shows the results of the selected length of lags for each VAR model in each country according to Final Prediction Error (FPE) and Akaike Information Criteria (AIC) criteria (for more details see Appendix 2). The results showed that the length of lags in Canada is six, while for UK, Japan and Indonesia two lags were selected and for USA, three lags were selected for their average.

Table 11: Optimal length of lags

country	Canada		UK		USA		Japan		Indonesia	
criteria	FPE	AIC	FPE	AIC	FPE	AIC	FPE	AIC	FPE	AIC
Optimal length	6	6	2	2	3	3	2	2	2	2

4.2.3.7.2 VAR Lag Exclusion Wald Test

Wald test is used to examine the lags that should be excluded from the analysis. According to the Wald test, if the p-value is greater than 0.05 level, then this lag must be excluded and vice versa. Table 12 showed the results of Wald test. The model excluded (2, 4 and 5) lags from the DJIMCN index, while (2, 3, 4 and 5) lags from S&PTSX index. For UK, lag (2) from DJIMUK, (1 and 2) lags form FTSE100. In USA, the model excluded (1 and 2) lags from both indices. For Japan excluded lag (2) from DJIMJAP and lag (1 and 2) form NIKKEI 225. For Indonesia excluded lag (2) from JII and from JCI.

Table 12: Lag Exclusion Wald Tests results

	Canada		**UK**		**USA**	
	DJIMCN	SPTSX	DJIMUK	FTSE100	DJIMUS	S&PCOMP
Lag Excluded	**2,4,5**	**2,3,4,5**	**2**	**1,2**	**1,2**	**1,2**

	Japan		**Indonesia**	
	DJIMJAP	NIKKEI 225	JII	JCI
Lag Excluded	**2**	**1,2**	**2**	**2**

4.2.3.7.3 VAR model estimation

Table 13 showed the relationship between Islamic and conventional indices for each country. Therefore, the results of VAR model are as follows**:** for Canada and Indonesia, we notice that there is a two-way relationship, which means that Islamic and conventional stock markets affect each other, while the effect of conventional stock markets on Islamic index is stronger. For UK, USA, and Japan, there is only a one-way relationship, which means that only conventional stock markets affect the Islamic stock markets.

Table 13: Final VAR models results.

Canada			UK			USA		
lags	**DJIM**	**S&PTSX**	**lags**	**DJIMUK**	**FTSE100**	**lags**	**DJIMUS**	**S&PCOM**
DJIMCN(-1)	-0.572*	-0.218*	DJIMUK(-	-0.441*	-	DJIMUS(-3)	0.499*	-
DJIMCN(-3)	0.333*	--	FTSE100(-	0.389*	-	S&PCOMP(-3)	-0.589*	-
DJIMCN(-6)	0.652*	0.385*			-			-
S&PTSX(-1)	1.113*	0.513*			-			-
S&PTSX(-3)	-0.697*	--			-			-
S&PTSX(-6)	-1.045*	-0.685*			-			-
Constant	0.000	0.003	**Constant**	0.000	-	**Constant**	0.002	-
F-Statistic	6.565	7.176	**F-Statistic**	4.925	-	**F-Statistic**	2.966	-
R-square	0.192	0.146	**R-square**	0.053	-	**R-square**	0.033	-

Japan			Indonesia		
lags	**DJIMJAP**	**NIKKEI 225**	**lags**	**JII**	**JCI**
DJIMJAP(-1)	-0.161	-	JII(-1)	0.213*	0.261*
NIKKEI 225 (-1)	0.264*	-	JCI(-1)	0.312*	0.257*
Constant	-0.002	-	**Constant**	0.006	0.005
F-Statistic	4.029	-	**F-Statistic**	12.597	14.949
R-square	0.044	-	**R-square**	0.126	0.146

4.2.3.8 Granger Causality

In order to examine the direction of the relationship between indices, Granger Causality is tested at the first three lags (1, 2, and 3) for each country. Table 14 showed the results of Granger Causality; it can be noted that there is a Granger Causality in two ways in

Table 14: Granger Causality test results.

Country	**Granger Causality**	**Lag = 1**		**Lag = 2**		**Lag = 3**	
		F	**P-Value**	**F**	**P-Value**	**F**	**P-Value**
Canada	S&PTSX does not Granger Cause DJIMCN	12.61	**0.000**	6.57	**0.002**	6.87	**0.000**
	DJIMCN does not Granger Cause S&PTSX	5.39	**0.021**	2.60	**0.077**	2.88	**0.038**
UK	DJIMUK does not Granger Cause FTSE100	0.95	0.330	1.08	0.341	0.95	0.417
	FTSE100 does not Granger Cause DJIMUK	6.42	**0.012**	3.07	**0.049**	2.22	0.088
USA	DJIMUS does not Granger Cause S&PCOMP	0.03	0.859	1.66	0.197	1.20	0.310
	S&PCOMP does not Granger Cause DJIMUS	0.61	0.437	3.05	**0.049**	2.88	**0.038**
Japan	DJIMJAP does not Granger Cause NIKKEI 225	0.45	0.503	0.20	0.816	0.44	0.725
	NIKKEI 225 does not Granger Cause DJIMJAP	6.16	**0.014**	2.21	0.113	2.06	0.107
Indonesia	JII does not Granger Cause JCI	9.90	**0.002**	5.79	**0.004**	4.76	**0.003**
	JCI does not Granger Cause JII	18.13	**0.000**	10.58	**0.000**	7.70	**0.000**

Canada, which means Islamic and conventional stock markets affect each other. However, for UK, USA, and Japan, there is only one-way Granger Causality towards the Islamic markets, which means that the conventional stock markets affected the Islamic stock markets. For Indonesia, two ways Granger Causality exists between Islamic and conventional stock markets. These results significantly matched with the results of the previous VAR analysis.

4.2.3.9 Engle-Granger Co-Integration Test

Table 15 showed the results of co-integration between closing share price series for Islamic and conventional indices in each country using Engle-Granger co-integration test. The results indicated that all of the test P-values are greater than 0.05, therefore, we can accept the null hypotheses "H_o: series are not co-integrated". This means that there is no co-integration between series in each country in long-term. In the same vein, the investors can utilize the portfolio diversification between the Islamic and conventional stock market to reduce the risk in long-term.

Table 15: Engle- Granger co-integration test results.

Country	Dependent	z-statistic	P-Value.*
Canada	Log(DJIMCN)	-9.28	0.399
	Log(S&PTSX)	-5.02	0.728
UK	Log(DJIMUK)	-4.69	0.754
	Log(FTSE100)	-11.26	0.284
USA	Log(DJIMUS)	-4.61	0.761
	Log(S&PCOMP)	-5.29	0.706
Japan	Log(DJIMJAP)	-11.70	0.262
	Log(NIKKEI 225)	-7.16	0.553
Indonesia	Log(JII)	-16.63	0.100
	Log(JCI)	-15.73	0.121

*Mackinnon (1996) p-values.

4.3 The Determinants of Stock Market Performance

The increasing importance of stock markets widely around the world encouraged research in the factors that is affecting the performance of these stock markets. On the other hand, the stock market's performance is attracting a lot of attention of investors from all around the globe because of the expectation of high returns. However, as it is well known to all the high return is accompanied by high risks (Avcı, 2006). Therefore, investors should look for the most suitable equity markets to invest in, in order to achieve greater goals. This requires knowledge of the most important factors and variables that may affect the performance of the market.

This present part of the study attempts to investigate the relationship between stock market performance and macroeconomic variables in some countries. The influence of selection of macroeconomic variables on the performance of both conventional and Islamic indices will be applied.

4.3.1 Literature Review

Many studies have been conducted to investigate the impact of macroeconomic variables on the performance of stock indices. Most of these studies focused on the conventional stock market and identified factors such as exchange rate, interest rate, risk premiums, GDP, inflation, industrial production, money supply, oil price, gold price, balance of trade and so on to explain indices performance. The following are some of these studies. (For the summary of these studies see Appendix 1)

Zafar (2013) examined the impact of group of macroeconomic factors (real interest rate, foreign direct investment, and domestic credit) on stock market performance of Pakistan using 1988- 2008 data. The Market Capitalization ratio was used as a measure for stock market performance. Data was analyzed through using regression analysis. The study highlighted that both foreign direct investment and value traded have positive impact on the performance of Pakistani stock market. While, there is a negative relationship between real interest rate and stock market performance, whereas there is no significant impact of the banking sector development on stock market performance.

Garcia and Yue (2010) examined the macroeconomic determinants of the Shanghai Composite Index (SCI) performance including the influence of US macroeconomic variables in Chinese stock prices. The study utilized the Johansen Maximum Likelihood to investigate whether there is co-integration linkage between international and domestic macroeconomic variables and the SCI. The main findings pointed out that the prices of Chinese stock are determined by changes in domestic variables, such as the exchange rate, inflation, money supply, short-term interest rates and industrial production. This study also argued that US economic and financial indicators, such as the industrial production, Dow Jones Industrial Average and the consumer confidence index, are significantly affecting Chinese stock prices.

The impact of macroeconomic factors on stock market in Sri Lanka is examined by Gunasekarage, et. al. (2004) This study addressed the following factors: (i) the exchange rate (ii) the consumer price index (as a measure of inflation), (iii)the treasury bill rate (as a measure of interest rates) and (iv) the money supply, as macroeconomic variables. The study covered the period from 1985-2001 and used a set of analysis approaches that include: unit roots test, co-integration test, vector error correction models (VECM), variance decompositions (VDCs) and impulse response functions (IRFs) to test both short-run and long-run relationships between stock market index and the above macroeconomic variables.

The analyses pointed out that the consumer price index, the Treasury bill rate, and the money supply have a significant impact on the stock market. The Treasury bill rate recorded the strongest influence on changes of stock price compared to other variables. However, the share price index does not have any influence on macroeconomic variables except for the Treasury bill rate. The finding of IRF and VDC analyses stated that shocks to economic variables explained only a minority of the forecast variance error of the market index; these effects did not persist for very long time.

Sloan (2012) applied the Arbitrage Pricing Theory (APT) to check the determinants of the stocks returns of the Dow Jones stock market for the period 1990-2011. The study concentrated on some variables such as the previous returns, earnings Yield, dividend yield and book-market ratio as specific firm factors; and T-bill rate, Unemployment, Default Spread, Term Spread, Real GDP and inflation as macroeconomic factors. The results pointed out that a significant relationship exist between previous return, unemployment, inflation, real GDP, earnings yield, term Spread, T-bill rate and stock returns.

The influence of macroeconomic factors on stock market in Nigeria is examined by Osisanwo and Atanda (2012). They used the ordinary least square (OLS) for the period from 1984 to 2010. The findings suggested that there is significant influence on interest rate, exchange rate and previous stock return on the stock returns in Nigeria.

Naceur, et. al. (2007) aimed to identify the macroeconomic determinants, which have an important influence on stock markets performance in Middle Eastern and North African (MENA). Both fixed effects and random effects models were applied in this study over the period 1990-1999. The study found that saving rate, stock market liquidity, financial intermediary, and the stabilization variable have important role in stock market development.

The study of Omondi and Muturi (2013) aimed at identifying the factors which are affecting the financial performance in Kenya. This study applied an explanatory research on sample of 29 listed firms during the periods of 2006-2012. Descriptive statistics and inferential statistics were used to analyze data. To assess the interrelationship between the variables, Pearson correlation was used, whereas multiple-regression was used to evaluate the effect of the independent variables on the dependent ones. The findings showed that liquidity, company size, and company age had a significant positive effect on financial performance, while the leverage had significant negative effect on financial performance.

Aurangzeb (2012) determined the factor influencing the performance of stock market in South Asia. The study was applied in India, Pakistan, and Sri Lanka over the period from 1997 to 2010 and his findings pointed out that the exchange rate and foreign direct investment have positive and significant effect on South Asian countries' stock market performance while; inflation and interest rate have significant negative effect on South Asian countries stock market performance.

Ali, et. al. (2010) examined the relationship between macroeconomic indicators and prices of stock market in Pakistan, by using both Johansen's co-integration method and Granger's causality test to analyze data from 1990 to 2008. The study argued that there is co-integration between stock exchange prices and industrial production index. However, no causal relationship was found between macroeconomic indicators (exchange rate, inflation, index of industrial production and balances of trade) and the prices of stock exchange in Pakistan.

Garcia and Liu (1999) examined the macroeconomic determinants of stock market performance in 15 industrial and developing countries over the period from 1980 to 1995. The result of this paper found out that saving rate, real income, liquidity, and financial intermediary development are important determinants of stock market capitalization.

Hussin, et. al. (2012) research focused on the relationship between the Islamic stock market development and macroeconomic factors in Malaysia. Vector Auto Regression (VAR) method was applied. Monthly data from 1999 to 2007 were used in this research. The result indicated that industrial production index and consumer production index had positive and significant effect on Islamic stock market prices, while money supply and exchange rate had significant negative effect on Islamic stock market prices. Meanwhile, the result of Granger causality showed that consumer production index, money supply, and exchange rate are Granger cause Kuala Lumpur *Syariah* Index and the Kuala Lumpur *Syariah* Index is the Granger cause for industrial production index, exchange rate and consumer production index.

By using the smooth transition regression method, Bredin, et. al. (2005) tested the relationship between stock returns and the macroeconomic for Canada, U.S., Germany, France, U.K, and Japan over the period 2000 - 2006. Results showed that the inflation and the interest rate were strong determinants of stock market returns for the six countries, while industrial production, growth and oil prices and dividend yields are considered in individual cases. On the other hand, results showed that covariance of countries' return with the world market portfolio increased during the crisis.

Vejzagic and Zarafa (2013) examined the long-term relationships between a set of macroeconomic factors and the FTSE Bursa Malaysia *Shariah* Index for the period 2006-2012 M9 with 72 monthly observations. By using the following methods: co-integration test, Variance decomposition (VDC), Impulse Response Function (IRF) and Vector Error Correction Model (VECM), the researchers argued that FTSE Bursa Malaysia *Shariah* Index had an important role in economy, it has clearly affects the major macroeconomic variables such as the exchange rate, money supply, interest rate and consumer price index. The findings showed significant relationship with exchange rates, interest rate, and money supply; it's negatively affecting exchange rate and interest rate while positively affecting money supply.

By using the Calderon-Rossell Model, Yartey (2008) analyzed the panel data of 42 developing economies over the period 1990 to 2004 and examined both macroeconomic and institutional determinants of stock market development. The result showed that macroeconomic factors such as gross domestic investment, income level, banking sector development, stock market liquidity and private capital flows were essential determinants of stock market development in developing market countries. Also, the analysis showed that bureaucratic quality, law, and regime, and political risk are important determinants of stock market development because they enhance the external finance.

The study of Apiyeva (2007) aimed at examining the major determinants of the stock market performance in some emerging economies of Latin America and Asia Pacific. The study adopted annual data and covered the period of 1985-2003. This research used the multivariate linear model to examine a set of macroeconomic variables, such as foreign exchange rates, inflation, market integration, Institutional Investors' country ratings, financial risk premiums, and the U.S interest rates to explain their role in the fluctuations of the total returns on the Latin America and Asia Pacific stock markets. The results pointed out that the financial risk premium and Institutional Investors' country ratings are the main determinants of the stock market performance in the mentioned above stock market.

Patel (2012) investigated the effect of macroeconomic determinants on the performance of the Indian Stock Market. This research utilized monthly data over the period 1991-2011 for some macroeconomic variables, namely, exchange rate, inflation, interest rate, money supply, index of industrial production, oil price gold price and silver price, and both of Sensex stock market index and S&P CNX Nifty stock market index. By applying a group of method such as the Augmented Dickey Fuller Unit root test, Granger Causality test, Johansen Co-integration test, and Vector Error Correction Model (VECM), the analysis finds out that there was a long-term equilibrium relation between stock indices and all above mentioned macroeconomic variables. Also, the analysis found evidence that exchange rate, Index of

Industrial Production and Oil Price are Granger Cause stock market indices. Finally, the price of gold, silver, and oil were major determinants of stock markets.

Kumar (2013) studied monthly data from January 2001 to May 2013 of twelve macroeconomic variables by using factor analysis to identify the factors which influence the performance of Indian stock market. The findings of Exploratory Factor Analysis (EFA) and the Principal Component Technique pointed that industrial performance play important role in the stock market performance. On other hand, the policy of interest rates had some impact but it did not seem sustainable.

Duca (2007) examined causality direction on long-term trends by employing the Granger causality test in between GDP and stock market price. The study was conducted in each of US, UK, Germany, and Japan. Quarterly data was used over the period 1957- 2004. The result pointed out that for all above-mentioned countries, except Germany, stock prices appear to Granger cause GDP. Moreover, no causality was found in the reverse direction. While in the case of Germany, the relationship between stock prices and GDP is independent of one another.

By applying the Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT) framework, Ouma and Muriu (2014) examined the impact of the macroeconomic variables on Kenya stock returns over the period 2003-2013. The findings showed that exchange rates, inflation, and money supply had an effect on the stock market returns. However, exchange rates had negative influence on stock returns, while there was not a significant relationship between interest rates and long-run returns.

Maghyereh (2002) applied Johansen’s vector error-correction technique and utilized monthly time series data during the period from 1987 to 2000, to investigate the long run relationship between the Jordanian stock prices and a set of macroeconomic variables. The findings of the study presented that exports, foreign reserves, industrial production, interest rates and inflation were important determinants of stock prices in the Jordanian stock market.

The purpose of Noman, et. al. (2012) study was to explore the direction of causality between exchange rate and stock market in Bangladesh. The paper applied the Granger causality tests using monthly data spanning over January 1983 to June 2010. The analysis indicated the absence of any causality between exchange rate and stock market.

Maku and Atanda (2010) examined the long-run macroeconomic determinants of stock market performance in Nigeria over the period 1984 and 2007. The results of Augmented Engle-Granger Co-integration test indicated that the performance of stock market in Nigeria was determined by macroeconomic factors in the long-run. However, the analysis revealed that the stock market in Nigeria was more responsive to changes in inflation rate, money supply, and exchange rate and real output.

Coleman and Tettey (2008) examined how macroeconomic factors has influenced the performance of stock markets in Ghana Stock Exchange. The study utilized quarterly time series data spanning from the period 1991-2005. Co-integration and the error correction model methods were employed to investigate both short and long-run relationships. The result of the study pointed that inflation rate and lending rates had an adverse effect on stock market performance, while Treasury bill rates had a weak effect on stock market performance in Ghana.

By using the arbitrage pricing theory (APT), Rjoub, et. al. (2009) examined the effect of six macroeconomic indicators on stock returns on Istanbul Stock Market. The selected factors were the exchange rate, the interest rate, risk premium, unanticipated inflation, money supply and unemployment rate. The study was based on a monthly data, for the period January 2001 to August 2005 and the findings revealed that there was a significant relationship between the stock return and the selected macroeconomic variables; such as the term structure of interest rate, unanticipated inflation, money supply and risk premium.

By applying the multivariate vector auto-regression, Babatunde, et. al. (2013) tried to investigate the interactive relationships between oil price shocks and the price stock market in Nigeria. The study covered the period from 1995 to 2008 and the quarterly data was used. The findings of this study revealed that the stock market returns showed insignificant positive response to shocks of oil price, but after a period of time the stock market return reverts to negative effects depending on the nature of the oil price shocks.

Rana and Akhter (2015) employed (GARCH-M) model in order to investigate and compare the performance of Islamic stock index (KSE Meezan Index) and two conventional stock indexes (Karachi Stock Exchange index KSE-30 and KSE-100 index) in Pakistan for the period of June 2008 to November 2013. The findings of this study stated that the interest rate volatility had a positive and significant effect on KSE -100, whereas the Islamic index KMI-30 remained unaffected by the interest rate volatility. A significant impact exchange rate volatility was found on both conventional and Islamic indices. The result of parametric t-test analysis pointed out that there is no significant difference between returns on Islamic index and conventional indices in Pakistan. This means *Shariah* screens did not have negative impact on the Islamic stock index.

Singh, et. al. (2011) attempted to examine causal relationship between index returns and certain crucial macroeconomic variable namely, GDP, Inflation employment rate, exchange rate and money supply in Taiwan. The analysis was based on stock portfolios. The period of study spanned from 2003 to 2008, and the regression analysis was employed. The study utilized four criteria in portfolio construction: price/earnings ratio (P/E ratio), Market capitalization, PBR, and yield. Empirical findings argued that GDP and exchange rate have positive impact on the returns of all portfolios, whereas inflation rate and money supply have negative relationship with returns of portfolios

Abdelrahim, (1990) aimed at investigating the relationship between macroeconomic variables and Kuwait stock prices and utilized Ordinary least squares regression analysis, for both monthly and quarterly data for the period 1979-1988. The analysis stressed that there was a significant relationship between stock prices and some macroeconomic such as the; sight deposits, government expenditure, oil revenues, exchange rate, money supply.

Cherif and Gazdar (2010) used panel data from fourteen MENA countries. The study covered the period from 1990 to 2007. The study aimed at investigating the influence of macroeconomic factors and institutional quality on stock market development. The findings of the research indicated that the income level, stock market liquidity, and interest rate influence the stock market development.

4.3.2 Data and sources

The quarterly data, spanning from the first quarter of 2000 to the last quarter of 2014 (except data of Indonesia, starting from 3rd quarter to last quarter of 2014) was utilized, therefore making use of 60 data points sufficiently for effective analysis. The data were obtained from various sources. Data on the total return of indices were obtained from DATASTREAM, while the macroeconomic data were collected from many websites such as the Organization for Economic Cooperation and Development (OECD), International Monetary Funds, OEDDATA, World Gold Council, Organization of the Petroleum Exporting Countries (OPEC) after which, the natural logarithm of the data was calculated for each variables before starting the analysis process setip.

4.3.3 Variable description

This study uses some set of macroeconomic variables, which have been used in previous literature, namely, the total return (TR), Interest rate (IR), Consumer Price Index (CPI), Foreign Exchange Rate (ER), Growth Domestic Product (GDP), Money Supply (M3), Gold Price (GP) and Crude Oil Price (OP). These variables will be discussed in more detail in the following sub-sections.

4.3.3.1 Total return on Indices

The total return (TR) reflects the overall performance of the index, thus the stock market, and it is considered as the dependent variable in the analysis. TR includes reinvested dividends, capital gains, etc. DATASTREAM defines TR as a "*theoretical growth in value of shareholding over a specified period, assuming that dividends are reinvested to purchase additional units of equity or unit trust at the closing price applicable on the ex-dividend date*"[32]. In practice, the decision makers and investors often care about total return rather than closing price because closing price seems to be misleading. In this context, Koller et al., (2010) argues that the most common approach to measure stock market performance is to calculate its total returns.

[32] http://findb.aalto.fi/docs/Datastream/datastream_time_series (20/01/2016 19:25)

4.3.3.2 Exchange rate

According to the traditional economic models, any changes in exchange rates will affect balance-sheet of a firm through its ability of competitiveness as represented in foreign currency and hence, profits and equity leading to the capital markets price adjustments. This result of volatility in price adjustments of individual firms has driven the influence on the index (Vejzagic. 2013. p. 197). The studies of Branson, et al. (1977), Meese and Rogoff (1983), Wolff (1988), Ghartey (1998), Hasan and Javed (2009), and Samadi, et. al. (2012) had found some relationship between exchange rates and stock price.

In this study, the Special Drawing Rights (SDR) is used for measuring the change in the value of change rates. SDR is the account unit used by IMF and is not a currency per se. The currency value of the SDR is determined by calculating the local currency based on exchange rates of the market for the basket of major currencies (the U.S. dollar, Euro, pound sterling, and Japanese yen).

4.3.3.3 Interest rate

The interest rate policy can briefly be defined as any official action prepared to influence the structure and level of money rates of interest. An interest rate is a rate which is imposed or charged for the use of money. It is usually expressed as an annual percentage as principle. It is calculated by dividing the value of interest by the value of the principal. Interest rates often fluctuate as a result of inflation and policies of the central bank. This can play an essential factor in deciding the amount of savings as opposed to investing. If the rate of interest is low, people will decline savings and they will tend to invest more in the market indexes; therefore, it is supposed that interest rate may play a vital role in market indices (Vejzagic & Zarafat, 2013)

The study used 3 months treasury bill interest rates, followed all of K. Coleman & A. Tettey, (2008) who stated that the three months treasury bill is market-based, also Hakim & Rashidian (2002), Shamsuddin, (2014) and Binmahfouz, et.al.(2012).

4.3.3.4 GDP

In literature review, many of studies such as that of Christopher, et. al., (2006); Ikoku (2007) and Maku and Atanda, (2010) argued that GPD in one of fundamental macroeconomic variables that determines the stock prices and therefore the stock market performance.

There are several ways to calculate GDP, but the most common one is the expenditure method, so the expenditure method is used in calculating the GDP. The expenditure method includes total consumption, government spending, investment, and net exports.

4.3.3.5 CPI

The consumer price index (CPI) is a measure of the price change in consumer goods and services. The CPI is used to track the pace of inflation. Numerous studies have investigated the relationship between CPI and stock returns. Most of the findings of these studies indicated existence and negative relationship between stock returns and CPI for diverse countries. For instance, see Geske and Roll (1983); Asprem (1989); Cauchie, et. al., (2004); Ahmed and Mustafa (2012).

4.3.3.6 Money supply (M3)

Money supply in any economy has a significant influence on other macroeconomic variables depending on the strength of money multiplier (Kumar, 2013); therefore, it has been included in the proposed macroeconomic factors that perhaps could determine the performance of the stock market. In this study, the broad money supply, M3 is used. M3 involves demand deposits, money in circulation, time deposits, savings, long-term deposits and foreign currency deposits.

4.3.3.7 Gold Price (GP)

The gold is considered as an asset value; it acts as an important saving material. Gold price is a good indicator of how healthy economy is. Rising gold prices mean that the economy is not healthy because investors turn to gold to protect their investments from an inflation or a crisis but when the gold prices fall, that usually indicates that the economy is healthy. This is because investors have left gold for other monetary alternatives and more gainful investments such as stocks, bonds or real estate (Amadeo, 2012). Gold Price is selected in this study as independent variable to check whether gold price has any significant influence on stock market performance.

4.3.3.8 Oil Price (OP)

Blanchard and Gali (2009) stated that there is causal linkage between oil price and the economy. While, Patel (2012) argued that a higher oil price increases the cost of production, which may also decrease the profit of firms, and therefore, decrease in stock prices. Hence, the negative relationship between oil price and stock price is expected. The International Brent crude oil price is used in this study, in US$ per barrel.

4.3.4 Hypotheses

This section of this research attempts to examine the selection of some macroeconomic determinants on the performance of Islamic and conventional stock indices. This study is based on the following hypotheses that clearly define the research objectives thus:

Ho1: Interest rate has no significant impact on stock index performance

Ho1-a: Interest rate has no significant impact on conventional stock index performance

Ho1-b: Interest rate has no significant impact on Islamic stock index performance.

Ho2: Exchange rate has no significant impact on stock index performance

Ho2-a: Exchange rate has no significant impact on conventional stock index performance

Ho2-b: Exchange rate has no significant impact on Islamic stock index performance.

Ho3: GDP has no significant impact on stock index performance

Ho3-a: GDP has no significant impact on conventional stock index performance

Ho3-b: GDP has no significant impact on Islamic stock index performance.

Ho4: Consumer price index has no significant impact on stock index performance

Ho4-a: Consumer price index has no significant impact on conventional stock index performance

Ho4-b: Consumer price index has no significant impact on Islamic stock index performance.

Ho5: Money supply has no significant impact on stock index performance

Ho5-a: Money supply has no significant impact on conventional stock index performance

Ho5-b: Money supply has no significant impact on Islamic stock index performance.

Ho6: Oil price has no significant impact on stock index performance

Ho6-a: Oil price has no significant impact on conventional stock index performance

Ho6-b: Oil price has no significant impact on Islamic stock index performance.

Ho7: Gold price has no significant impact on stock index performance

Ho7-a: Gold price has no significant impact on conventional stock index performance

Ho7-b: Gold price has no significant impact on Islamic stock index performance.

4.3.5 Methodology

In order to achieve the aim(s) of this part of the study, which is assessing the relationship between stock markets indices of both Islamic and conventional performance and macroeconomic variables, some techniques and analysis are employed. Descriptive analysis is generally the first phase of data analysis. In brief, a descriptive analysis is suitable to give an accurate description or characteristics of variables.

After that and before implementation of time series analysis, the time series to be analyzed should be stationary. For this, augmented Dickey-Fuller (ADF) unit root test, which was developed by Dickey and Fuller (1979), was employed. This is very important to examine the stationarity of data and to avoid spurious regression.

The multiple regression analysis (this model was first used by Pearson in 1908) is applied to examine the relationship between dependent variables and independent variables. The general purpose of multiple regression model is to investigate the relationship between several independent variables and a dependent variable. |In addition, the stepwise regression models were applied to avoid multicollinearity problems. The Stepwise regression iterative construction of a regression model that involves automatic selection of independent variables. Stepwise regression can be achieved either by trying out one independent variable at a time and including it in the regression model if it is statistically significant, or by including all potential independent variables in the model and eliminating those that are not statistically significant, or by a combination of both methods. Following Sufian, et. al., (2012) who suggested that a stepwise regression technique can be used to build stable models and avoid severe multi-collinearity problem. The E-views 8 software is used for this purpose.

The following equation for multiple linear regression-model explains the potential relationship between a dependent variable (SIP) and an independent variable (macroeconomic factors).

$$SIP = f(IR, ER, GDP, CPI, M3, GP, OP) \ldots.. (6)$$

Where:

SIP- stock index financial performance measured by total return; IR= interest rate; ER= exchange rate; GDP= gross domestic product; CPI= consumer price index; M3= money supply; GP= gold price; OP= oil price.

$$CSIP_i = \alpha + \beta_1 IR_i + \beta_2 ER_i + \beta_3 GDP_i + \beta_4 CPI_i + \beta_5 M3_i + \beta 6 GP_i + \beta_7 OP_i + \mathcal{E} \ldots(7)$$

$$ISIP_i = \alpha + \beta_1 IR_i + \beta_2 ER_i + \beta_3 GDP_i + \beta_4 CPI_i + \beta_5 M3_i + \beta 6 GP_i + \beta_7 OP_i + \mathcal{E} \ldots(8)$$

And where:

α = constant, $\beta_1 \ldots \beta_8$ = the slope which represents the degree in which financial performance changes as the independent variable change by one-unit variable. CSIP = conventional stock index performance, ISIP = Islamic stock performance, $_i$= the country, and $\mathcal{E}$ = error term.

4.3.5.1 Descriptive Statistics

Before embarking on the empirical analysis, it is important to examine the collected data which is used in the analysis by using descriptive analysis. This is the tool that summarizes the data and provides the measures of the sample data. Descriptive statistics were calculated from the natural logarithm of quarterly data of the five countries of the study sample. The data included: total return series of one conventional index, total return series of the counterpart, Islamic index, IR, ER, CPI, M3, OP, GP, and GDP over the 15-year time period.

Five different tables are formulated for this descriptive analysis study using the data of five countries. Table 16 shows details of the results of the descriptive analysis for each country, in particular, the number of observation (N), the mean (Mean), the standard deviation (Std. Dev), and maximum (Max) and minimum (Min).

4.3.5.2 Descriptive Statistics for Canada

Table 16 showed the descriptive statistics related to Canada. The result of descriptive analysis of the first dependent variable, S&PTSX index, suggested that, the mean value of quarterly total return is (10.17) and the low value is (9.53), which was recorded in 2002 q4, while the high value is (10.73), which was recorded in 2014 q3 and standard deviation is (0.33). While the result of descriptive analysis of the second dependent variable, DJISMCA index, suggests that the mean value of the quarterly total return is (7.52), the low value is (6.60), which was recorded in 2002 q4, while the high value is (8.13), which was recorded in 2008 q3 and standard deviation is (0.43), which is on the lower side compared to S&PTSX index. This low of standard deviation of DJISMCA is due to small size of Islamic market.

Table 16: Descriptive Statistics related to Canada.

Variable	N	Mean	Minimum	Maximum	Sta. Dev.
S&PTSX	60	10.17	9.53	10.73	0.33
DJISMCA	60	7.52	6.60	8.13	0.43
IR	60	0.73	-0.97	1.77	0.72
ER	60	0.56	0.41	0.75	0.10
CPI	60	4.55	4.39	4.68	0.08
M3	60	4.38	3.86	4.94	0.33
GP	60	6.52	5.57	7.45	0.64
OP	60	3.99	2.83	4.75	0.56
GDP	60	12.83	12.49	13.12	0.18

The average of IR value is (0.73) and it touched the low of (-0.97) and the peak of (1.77) with standard deviation (0.72). The average of Canadian's ER is (0.56) while the min.

is (0.41) and the max is (0.75). The standard deviation is (0.10). CPI showed mean of (4.55), low of (4.39), high of (4.68) and standard deviation (0.08). The average of money supply is (4.38), the min of (3.38), the high of (4.94), while the standard deviation is (0.33). The average of gold price is (6.52), the min of (5.57), the high of (7.45), while the standard deviation is (0.64). The average of oil price is (3.99), the min of (2.83), the high of (4.75), while the standard deviation is (0.56). The average of Canadian GDP is (12.83) and it touched the low value of (12.49) and the peak value of (13.12) with standard deviation of about (0.18).

4.3.5.3 Descriptive Statistics for UK

Table 17 shows the descriptive analysis related to UK; the first dependent variable which is FTSE 100 shows that, the mean value of quarterly total return is (8.05), the low (7.51) which was recorded in 2003 q2, while the high is (8.53) which was recorded in 2014 q3 and standard deviation is (0.26), while the result of descriptive analysis of the second dependent variable, DJISMUK index, suggests that the mean value of the quarterly total return is about (7.92), the low is (7.27), which was recorded in 2002 q4, while the high is (8.46) which was recorded in 2014 q3 and standard deviation is (0.31).

Table 17: Descriptive Analysis of UK

Variable	N	Mean	Minimum	Maximum	Sta. Dev.
FTSE 100	60	8.05	7.51	8.53	0.26
DJIMUK	60	7.92	7.27	8.46	0.31
IR	60	0.81	-0.71	1.84	0.98
ER	60	-0.12	-0.28	0.05	0.09
CPI	60	4.54	4.39	4.72	0.11
M3	60	4.23	3.59	4.62	0.35
GP	60	6.52	5.57	7.45	0.64
OP	60	3.99	2.83	4.75	0.56
GDP	60	12.76	12.44	13.04	0.18

Interest Rate average of about (0.81) was recorded and its lowest value was (-0.71) while the highest value reached value of about (1.84) with standard deviation of (0.98). The average UK's ER is (-0.12) while the min is (-0.28) and the max is (0.05) with standard deviation of (0.09). CPI showed mean of about (4.54), low of (4.39), high of (4.72) and standard deviation of (0.11). The mean money supply is (4.23), the min (3.39), the high is (4.62), while the standard deviation is (0.35). The average of gold price is (6.52), the min of

(5.57), the high of (7.45), while the standard deviation is (0.64). The average of oil price is (3.99), the min of (2.83), the high of (4.75), while the standard deviation is (0.56). The average of GDP in the United Kingdom was worth is about (12.76) and it touched the low value of (12.44) and the peak value of (13.04) with standard deviation of about (0.18).

4.3.5.4 Descriptive Statistics for USA

Table 18 shows the descriptive analysis related to USA. The statistics of S&PCOMP states that the mean value of quarterly total return is about (7.58), the low is (7.10), which was recorded in 2002 q4, while the high is (8.18), which was recorded in 2014 q3 and standard deviation is (0.26), while the result of descriptive analysis DJISMUS index, suggests that the mean value of the quarterly total return is of (7.80), the low is (7.24) which was recorded in 2002 q4, while the high is (8.43) which was recorded in 2014 q3 and standard deviation is (0.28). The standard deviation of DJISMUS is higher than S&PCOMP and this indicated that DJISMUS is highly fluctuates compared to S&PCOMP.

Table 18: Descriptive Analysis of USA

Variable	N	Mean	Minimum	Maximum	Sta. Dev.
S&PCOMP	60	7.58	7.10	8.18	0.26
DJISMUS	60	7.80	7.24	8.43	0.28
IR	60	0.10	-2.21	1.89	1.36
ER	60	0.38	0.22	0.49	0.07
CPI	60	4.54	4.36	4.69	0.10
M3	60	4.45	3.99	4.90	0.26
GP	60	6.52	5.57	7.45	0.64
OP	60	3.99	2.83	4.75	0.56
GDP	60	8.13	7.83	8.39	0.16

The statistics showed that the average IR is (0.10) and its lowest value is (-2.21) while the highest value reached is (1.89) with standard deviation of (1.36). ER touched low of (0.22), and the peak value of (0.49), average ER of USA is (0.38) and standard deviation is (0.07). The mean of CPI is (4.54) while the min.is about (4.36) and a max value of (4.69), and standard deviation is (0.10). The mean of M3 is (4.45), the low is (3.99), and the high is (4.90), while the standard deviation is (0.26). The average of gold price is (6.52), the min of (5.57), the high of (7.45), while the standard deviation is (0.64). The average of oil price is

(3.99), the min of (2.83), the high of (4.75), while the standard deviation is (0.56). The average of GDP in the USA was worth is (8.13) and it touched the low value of (7.83) and the peak value of (8.39) with standard deviation of about (0.16).

4.3.5.5 Descriptive Statistics for Japan

Table 19 presents the descriptive statistics for Japan. The average quarterly total of return on NIKKEI 225 is of (9.66), the low of (9.19), which was recorded in 2002 q3, while the high is (10.07), which was recorded in 2014 q4 and standard deviation is (0.23), while the result of descriptive analysis DJISMJAP index, suggests that the mean value of the quarterly total return is (7.13), the low is (6.69), which was recorded in 2003 q2, while the high is (7.67), which was recorded in 2000 q1. The standard deviation of DJISMJAP is (0.21), which is lower than the standard deviation of NIKKEI 225 due to small size of this Islamic market in Japan.

Table 19: Descriptive Analysis of Japan

Variable	N	Mean	Minimum	Maximum	Sta. Dev.
NIKKEI 225	60	9.66	9.19	10.07	0.23
DJIMJAP	60	7.13	6.69	7.67	0.21
IR	60	-1.55	-2.66	-0.15	0.85
ER	60	5.02	4.79	5.23	0.11
CPI	60	4.61	4.60	4.64	0.01
M3	60	4.58	4.49	4.71	0.06
GP	60	6.52	5.57	7.45	0.64
OP	60	3.99	2.83	4.75	0.56
GDP	60	11.72	11.66	11.77	0.03

The average IR is (-1.55) and it touched the low value of (-2.66) and the peak value of (-0.15) with a standard deviation of (0.85). The average ER is (5.02), while the min. is (4.79) and the max is (5.23), with standard deviation of (0.11). CPI showed mean value of (4.61), low value of (4.60), high value of (4.64) and a low standard deviation of about (0.01). The average money supply value is (4.58), the min. is (4.49), and the high is (4.71), while the standard deviation is (0.06). The average of gold price is (6.52), the min of (5.57), the high of (7.45), while the standard deviation is (0.64). The average of oil price is (3.99), the min of (2.83), the high of (4.75), while the standard deviation is (0.56). The average Japanese GDP is

(11.72) and it touched a low value of (11.66) and a peak value of (11.77) with a standard deviation of about (0.03).

4.3.5.6 Descriptive Statistics for Indonesia

Table 20 shows the descriptive statistics for Indonesia. The statistics indicated that, the average quarterly total return of JCI is (7.51), the low is (5.99), which was recorded in 2003 q2, while the high is (8.54), which was recorded in 2014 q4 and standard deviation is (0.79), and the result of JII index suggested that the average of the quarterly total return is (5.66), the low is (4.16), which was recorded in 2002 q4, while the high is (6.53), which was recorded in 2014 q4. The standard deviation of JII is (0.73), which is lower than the standard deviation of JCI (0.79) that means the Islamic stock market in Indonesia is less volatile than the conventional one.

Table 20: descriptive analysis of Indonesia

Variable	N	Mean	Minimum	Maximum	Sta. Dev.
JCI	51	7.51	5.99	8.54	0.79
JII	51	5.66	4.16	6.53	0.73
IR	51	2.10	1.73	2.79	0.27
ER	51	9.56	9.36	9.84	0.12
CPI	51	4.46	3.99	4.85	0.26
M3	51	4.37	3.63	5.20	0.50
GP	51	6.68	5.74	7.45	0.56
OP	51	4.13	3.18	4.75	0.48
GDP	51	14.02	13.11	14.82	0.55

Interest Rate average recorded value of (2.10) and its lowest value was (1.73), while the highest value recorded was (2.79), with standard deviation of (0.27). The average Indonesian ER is (9.56), while the min. is (9.36) and the max is (9.84) with standard deviation of (0.12). CPI showed average value of (4.46), low value of (3.99), high value of (4.85) and standard deviation of (0.26). The mean money supply is (4.37), the min. is (3.36), and the high is (5.20), while the standard deviation is (0.50). The average gold price is (6.68), the mini is (5.74), the high is (7.45), while the standard deviation is (0.56). The average of oil price is (4.13), the min. is (3.18), the high is (4.75), while the standard deviation is (0.48). The average of Indonesian GDP was worth (14.02) and it touched a low value of (13.11) and a peak value of (14.82) with a standard deviation of about (0.55).

4.3.6 Data Preprocessing

In this section the quarterly data of seven macroeconomic factors and total return of indices for each country are transformed by calculating the natural logarithms in order to achieve stationarity in the data, to prevent spurious results and also to reduce the heteroscedasticity. The transformation of quarterly data was achieved by the equations 9:

- For the total return of index:

$$R_{i,\,t} = \ln\,(tr_{i.t} / tr_{i.t-1}) \;\dots\; (9)$$

where:

$R_{i,\,t}$: denotes returns on index i during the quarter t, $tr_{i,\,t}$ is the total return on the index i during the quarter t, and $tr_{i.t-1}$ is the total return on index i during the quarter $t\text{-}1$

- For macroeconomic factors:

$$F_{i,\,t} = \ln\,(v_{i.t} / v_{i.t-1}) \;\dots\; (10)$$

where: $F_{i,\,t}$: denotes natural logarithm value of factor i during the quarter t, $v_{i,\,t}$ is the value of factor i during the quarter t, and $v_{i.t-1}$ is the value of factor i during the quarter $t\text{-}1$.

4.3.7 Testing Stationarity of Variables

4.3.7.1 Unit root test

In order to examine the stationarity of time series data, the ADF (1979) is used in proceeding with the-multiple-regression test. The results of ADF are shown in Table 21. The null hypothesis of a unit root is not rejected for all indices in log level, whereas, it is rejected when it is taken in their logs' first differences. Therefore, the results supported the stationarity of series at 0.05 level, and we can say that it satisfies the necessary conditions for multiple regression.

Table 21: Unit Root Analysis

Variables	Level (Prob. ADF)				
	Canada	USA	UK	Japan	Indonesia
IIP	0.633	0.979	0.809	0.060	0.872
CIP	0.830	0.990	0.944	0.480	0.961
IR	0.083	0.165	0.473	0.561	0.395
ER	0.546	0.476	0.465	0.395	0.493
CPI	0.423	0.821	0.794	0.157	0.991
M3	0.934	0.999	0.670	0.999	0.793
GP	0.667	0.667	0.667	0.667	0.667
OP	0.635	0.635	0.635	0.635	0.635
GDP	0.781	0.929	0.844	0.499	0.999
Variables	**1st difference (Prob. ADF)**				
	Canada	**USA**	**UK**	**Japan**	**Indonesia**
IIP	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
CIP	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
IR	**0.004**	**0.012**	**0.004**	**0.002**	**0.002**
ER	**0.000**	**0.000**	**0.000**	**0.026**	**0.000**
CPI	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
M3	**0.011**	**0.001**	**0.000**	**0.000**	**0.026**
GP	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
OP	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
GDP	**0.000**	**0.001**	**0.039**	**0.000**	**0.003**

Notes: All variables are expressed in natural logarithms

4.3.8 Empirical Findings

4.3.8.1 Finding for Multiple Regression Analysis

A multiple linear regression model is used to estimate whether the seven independent variables could influence the performance of both conventional and Islamic indexes. The relationship between the independent variable SIP and dependent variables (macroeconomic factors) is determined by using this model with 10% significance level (or 90% confidence level). Initially, the seven macroeconomic variables were included as a first step to determine their impact on the performance of stock indices.

Table 22: The results of regression analysis

IV's	Canada				UK				USA			
	S&P/TSX		DJIMCN		FTSE100		DJIMUK		S&PCOMP		DJIMCUSA	
	B	P-value	B	P-value	B	P-value	B	P-value	B	P-value	B	P-value
Constant	-0.02	0.437	-0.07	0.160	-0.01	0.546	-0.02	0.444	0.04	0.284	0.06	0.171
ln(IR)	-0.96	0.733	-0.04	0.658	0.00	0.949	-0.02	0.728	0.03	0.547	0.05	0.420
ln(ER)	**-0.05**	**0.000*** **	**-1.72**	**0.000*** **	-0.27	0.44	**-1.39**	**0.000*** **	0.55	0.329	0.63	0.286
ln(CPI)	-0.62	0.981	-4.05	0.279	-0.75	0.723	-0.30	0.898	-0.74	0.774	-0.95	0.729
ln(M3)	-0.06	0.586	2.67	0.158	0.26	0.661	0.51	0.445	-2.97	0.110	**-3.29**	**0.098***
ln(GP)	0.14	0.682	0.12	0.631	0.20	0.273	**- 0.37**	**0.080***	-0.04	0.828	0.04	0.858
ln(OP)	-0.02	0.171	**0.43**	**0.010****	0.08	0.293	**0.16**	**0.072***	0.06	0.646	0.13	0.383
ln(GDP)	**2.06**	**0.045****	2.15	0.194	1.74	0.236	1.02	0.530	1.96	0.378	0.43	0.854
F-Statistics	**7.14**	**0.001**	**9.53**	**0.000**	**1.49**	**0.190**	**4.93**	**0.000**	**2.03**	**0.068**	**2.11**	**0.059**
R-square	**0.499**		**0.571**		**0.173**		**0.408**		**0.222**		0.229	
DW	**1.723**		**1.709**		**2.001**		**2.158**		**2.217**		**2.106**	

IV's	Japan				Indonesia			
	NIKKEI225		DJIMJA		JCI		JII	
	B	P-value	B	P-value	B	P-value	B	P-value
Constant	0.00	0.799	-0.02	0.407	0.04	0.556	0.035	0.579
Ln(IR)	0.03	0.729	0.03	0.764	**-0.50**	**0.017****	**-0.55**	**0.011****
ln(ER)	**1.06**	**0.003*** **	0.03	0.931	**-0.89**	**0.006*** **	**-0.66**	**0.039****
Ln(CPI)	-1.80	0.519	1.08	0.679	0.48	0.759	1.28	0.419
ln(M3)	0.77	0.892	1.86	0.725	-1.04	0.517	-1.35	0.407
ln(GP)	-0.09	0.712	0.20	0.381	0.09	0.679	0.199	0.389
ln(OP)	0.08	0.373	**0.15**	**0.077***	0.14	0.175	**0.26**	**0.019****
ln(GDP)	0.71	0.593	0.44	0.723	1.24	0.342	0.87	0.507
F-Statistic	**2.45**	**0.031**	1.16	0.341	**5.07**	**0.001**	**6.45**	**0.000**
R-square	**0.255**		**0.140**		**0.518**		**0.577**	
DW	**1.859**		**1.823**		**2.205**		**2.343**	

Ln(IR) :interest rate

ln(ER): natural logarithm of exchange rate

Ln(CPI): natural logarithm of consumer price index

ln(M3): natural logarithm of money supply

ln(GP): natural logarithm of gold price

ln(OP): natural logarithm of oil price

ln(GDP): natural logarithm of GDP

*, **, *** indicates regression analysis value is significant at 10%, 5% and 1% level respectively.

The results showed the multiple regression method analysis in the sample countries by using the Ordinary Least-Square method (OLS). It should be noted that natural logarithm of variables is used due to non-stationarity of series in its level, while it became stationary in first differences as discussed above.

Table 22 showed the value of Durbin-Watson (DW), which is used to test auto-correlation in the model. This value of DW is located between (0 and 4), if the value of DW is close to (2), it means there is no auto-correlation existing in the model and the data can be used for the analysis. The value of DW above the value of (3) predicts that there may be negative auto-correlation, while the value below 1 means otherwise. The analysis shows that

DW for all countries are closed to (2), (ranging from 1.7 and 2.3), and this indicated the absence of autocorrelation among residuals of the time-series.

According to the multiple regression analysis results as illustrated in Table 22, the IR has a negative impact on both conventional and Islamic Indonesian indices (JCI and JII). The ER has a significant negative influence on the following indices: both conventional and Islamic indices in Canada (S&P/TSX and DJIMCN), on the Islamic one in the UK (DJIMUK), and on both conventional and Islamic indices in Indonesia (JCI and JII). While findings showed that there is a significant positive influence of ER on the conventional Index in Japan (NIKKEI225). Also, the result of M3 in Table 22 indicated that the money supply has a negative impact on DJIMUSA. The gold price has significant negative impact only on DJIMUK and the oil price has significant positive influence on all of DJIMCA, DJIMUK, DJIMJAP, and JII. Also, the GDP has positive influence only on the Canadian conventional index (S&P/TSX). The analysis showed that there is no significant impact of CPI on any index.

4.3.8.2 Findings for Stepwise Regression Techniques

The Stepwise regression iterative construction of a regression model that involves automatic selection of independent variables. This tool was adopted to avoid multicollinearity problems of sample data. Five different tables were formulated for this analysis because the researcher gathered data of five countries and they all have different dimensions.

Table 23: Stepwise regression analysis of Canada

Canada				
IV's	**S&P/TSX**		**DJIMCN**	
	B	**P-value**	**B**	**P-value**
Constant	-0.01	0.301	-0.03	0.109
ln(ER)	-0.94	**0.000*****	-1.90	**0.000*****
ln(OP)	0.13	**0.070***	0.32	**0.008*****
ln(GDP)	2.05	**0.022****	1.72	**0.091***
F-Statistic	17.53	0.000	20.74	0.000
R-square	0.493		0.535	
DW	1.659		1.544	

*, **, *** indicates regression analysis value is significant at 10%, 5% and 1% level respectively.

Table 23 indicated that after applying the stepwise regression with 90% confidence level, three variables namely ER, OP and GDP have significant impact on both Canadian indices. The findings indicated that 49.3% of S&P/TSX index (since $R^2 = 0.493$) performance is predicted by joint contribution of exchange rate, oil price and GDP. The rest of 50.7% is explained by other variables that were not included in this research model. While 53.5% of DJIMCN performance is predicted by the same variables (since $R^2 = 0.535$) and the rest of 46.5% is explained by other variables that were not included in this research model.

According to hypothesis (Ho2) Exchange rate has no significant impact on stock index performance, However the results showed inconsistency in the main hypothesis and in the sub-hypotheses of (Ho2, Ho2-a, and Ho2-b) since ER is statistically significant at 1% level with negative coefficient for both S&P/TSX and DJIMCN (p-value < 0.01). This result is consistent with Ouma and Muriu (2014) and it suggested that the depreciation of the local currency of the country (Canadian dollar) caused the stock price to fall. While, hypothesis (Ho6) states that Oil price has no significant impact on stock index performance, results from stepwise regression analysis showed inconsistency with the hypothesis, thus, supporting the argument that OP has positive impact on S&P/TSX at 10% level while it has highly positive impact on DJIMCN at 1% level. This findings are consistent with Narayan and Narayan (2010) and Pradhan, et. al. (2015). On the other hand, this result is on the contrary with some early studies that reported a negative linkage between oil prices and stock market returns including Jones and Kaul (1996) for U.S.A and Canada. Meanwhile, hypothesis (Ho3) stated that GDP has no significant impact on stock index performance, results from analysis showed inconsistency with the main hypothesis and sub-hypotheses of (Ho3, Ho3-a, Ho3-b) thus the findings supported the argument that the GDP had positive influence on both S&P/TSX and DJIMCN at 5% and 10% levels, respectively. This findings is also consistent with Sloan (2012) and Taulbee (2012).

The findings of stepwise regression, as shown in Table 24, indicated that M3 and GDP have significant influence on S&PCOMP index performance, while only M3 has significant influence on DJIMUS index performance. Accordingly, the hypothesis (Ho5) stated that Money supply has no significant impact on stock index performance, however, the results showed that M3 is statistically significant at 5% level with negative coefficient for both S&PCOMP and DJIMUSA (p-value < 0.05). This is similar to the findings of the study of Singh, et. al. (2011), who found a negative linkage between the money supply and the return of stock market in Taiwan. As well as it is consistency with the findings of Humpe and Macmillan (2009), who found a negative linkage between the money supply and the return of stock market in USA and Japan. While these findings are in inconsistency with Ouma and Muriu (2014), Mukherjee and Naka (1995), who found a positive relationship between money supply and stock market performance.

Table 24: Stepwise regression analysis of USA

USA				
IV's	**S&PCOMP**		**DJIMUS**	
	B	**P-value**	**B**	**P-value**
Constant	0.032	0.359	0.084	0.003
ln(M3)	**-3.39**	**0.036****	**-5.056**	**0.002*****
ln(GDP)	**3.16**	**0.054***	---	---
F-Statistic	6.93	0.002**	10.11	0.002
R-square	0.201		0.153	
DW	2.309		2.156	

*, **, *** indicates regression analysis value is significant at 10%, 5% and 1% level respectively.

Moreover, hypothesis (Ho3) stated that GDP has no significant impact on Islamic stock index performance, results from analysis showed inconsistency with the main sub-hypothesis (Ho3-a), thus, findings reports that the GDP has a positive impact on S&PCOMP at 10% level. This findings are consistent with Sloan (2012) and Taulbee (2012)

Table 25: Stepwise regression analysis of Uk

UK				
IV's	**FTSE100**		**DJIMUK**	
	B	**P-value**	**B**	**P-value**
Constant	-0.02	0.161	-0.00	0.709
ln(ER)	---	---	**-1.30**	**0.000*****
ln(GP)	---	---	**-0.43**	**0.034****
ln(OP)	---	---	**0.15**	**0.041****
ln(GDP)	**3.03**	**0.012****	---	---
F-Statistic	6.75	0.012	11.66	0.000
R-square	**0.107**		**0.393**	
DW	**2.140**		**2.123**	

*, **, *** indicates regression analysis value is significant at 10%, 5% and 1% level respectively.

The findings of Table 25 indicated that only GDP has significant influence on FTSE100 index performance, while all of ER, GP, OP, and GDP have significant influence on DJIMUK index performance. The results show that GDP is statistically significant at 5% level with a positive coefficient for FTSE100 (p-value = 0.012 < 0.05). This is similar to the findings of the study of Sloan (2012), Taulbee (2012), however, this finding is inconsistent with sub-hypothesis (Ho3-b). On the other hand, hypothesis (Ho2-b) stated that the Exchange rate has no significant impact on Islamic stock index performance, however, the results showed inconsistency with the main hypothesis since ER is statistically significant at 1% level with a negative coefficient for the Islamic Index DJIMUK. This result is consistent with the study of Ouma and Muriu, (2014). The GP has negative influence on DJIMUK at 5% level. This findings is consistent with the study of Patel (2012) who concluded that the GP is highly negatively correlated with the performance of stock market indices, in the same time, the findings showed inconsistency with the sub-hypothesis Ho7-b which stated that the gold price has no significant impact on conventional stock index performance. The hypothesis (Ho6-b) stated that the Oil price has no significant impact on Islamic stock index performance, the results, however, showed inconsistency since OP is statistically significant at 5% level with positive coefficient for the Islamic Index DJIMUK. This findings are consistent with the studies of Narayan and Narayan (2010) and (Pradhan, et. al. (2015). On the other hand, these results are on the contrary with some early studies that reported a negative linkage between oil prices and stock market returns including Jones and Kaul (1996), for U.S.A and the Canada, Sadorsky (1999) for the U.S.A.

Table 26: Stepwise regression analysis of Japan

JAPAN				
IV's	**NIKKEI225**		**DJIMJAP**	
	B	**P-value**	**B**	**P-value**
Constant	0.008	0.522	-0.00	0.461
ln(ER)	**1.169**	**0.000*** **	---	---
ln(OP)	---	---	**0.19**	**0.008*** **
F-Statistic	17.068	0.000	7.61	0.008
R-square	0.233		0.120	
DW	1.777		1.745	

*, **, *** indicates regression analysis value is significant at 10%, 5% and 1% level respectively.

Table 26 shows the stepwise regression for Japan. The finding indicated that only ER has a significant influence on NIKKEI225 index performance, while OP has significant influence on DJIMJAP index performance. ER is statistically significant at 1% level with positive coefficient for NIKKEI225 (p-value = 0.000 < 0.01). This result is inconsistent with hypothesis (Ho2-a) which stated that ER has no significant impact on conventional stock index performance. However, this finding is inconsistent with the study of Ouma and Muriu (2014).

The hypothesis (Ho6-a) stated that OP has no significant impact on conventional stock index performance, results, however, showed the inconsistencies since OP is statistically significant at 1% level with positive coefficient for DJIMJAP (p-value = 0.008 < 0.01). This findings are consistent with the studies of Narayan and Narayan (2010) and Pradhan, et. al. (2015). On the other hand, this result is on the contrary with those of Jones and Kaul (1996).

Table 27: Stepwise regression analysis of Indonesia

INDONESIA				
IV's	**JCI**		**JII**	
	B	**P-value**	**B**	**P-value**
Constant	-0.01	0.740	-0.02	0.495
ln(IR)	-0.48	**0.002*** **	-0.53	**0.000*** **
ln(ER)	-0.94	**0.001*** **	-0.73	**0.012** **
ln(OP)	**0.17**	**0.066* **	**0.27**	**0.005*** **
ln(GDP)	**1.69**	**0.039** **	**1.80**	**0.033** **
F-Statistic	11.31	0.000	13.58	0.000
R-square	0.507		0.552	
DW	1.816		1.889	

*, **, *** indicates regression analysis value is significant at 10%, 5% and 1% level respectively.

Table 27 indicated that after applying the stepwise regression with 90% confidence level on Indonesian indices, four variables namely IR, ER, OP and GDP have significant impact on both Indonesian conventional and Islamic indices. The findings indicated that 50.7% of JCI index performance is predicted by joint contribution of Interest rate, exchange rate, oil price and GDP (since $R^2 = 0.507$). The rest of 49.3% is explained by other variables that were not included in this research model. While 55.2% of JII performance is predicted by the same variables (R^2=0.552) and the rest of 44.8% is explained by other variables that were not included in this research model.

According to hypothesis (Ho1) interest rate has no significant impact on stock index performance, however the results showed inconsistency with the main hypothesis and sub-hypotheses (Ho1, Ho1-a, and Ho1-b) since the result in Table 27 showed that IR is statistically significant at 1% level with a negative coefficient for both JCI and JII (p-value < 0.01). This part of result is consistent with Rana and Akhter (2015) and Ali (2014) . This can be attributed to the fact that when investors are getting higher return without taking any risk then why should they invest in stock market.

Also, ER is statistically significant at 1% level with a negative coefficient for JCI and JII (p-value < 0.01). This finding is on the contrary with the main hypothesis and sub-hypotheses (Ho2, Ho2-a, and Ho2-b). On the other hand, this result is consistent with Ouma and Muriu (2014). The finding showed that OP has positive impact on JCI at 10% level while it has highly positive impact on JII at 1% level, this finding is on the contrary with the hypotheses (Ho6, Ho6-a, and Ho6-b)

The GDP has positive influence on both JCI and JII at 5% level and this finding is inconsistent with the main hypothesis (Ho3) and sub-hypotheses (Ho3-a and Ho3-b). However, this finding is consistent with the study of Sloan (2012) and Taulbee (2012).

CONCLUSION

The Islamic finance is one of the most controversial topics in finance field since it has become a new force in the world of International Financial Market. The increasing growth of the Islamic service industries and its ethical principles has attracted investors from both the Muslim and non-Muslim countries, hence, the investors in the Islamic stock markets, like any other investor, are also concerned with the returns on investment generated from the performance of financial stock market indices.

This research provides insights into the Islamic stock market and its performance. It examined and compared the performance of the Islamic Stock Market (ISM) with Conventional Stock Market (CSM) in some selected countries, in order to test the co-movement relationship between the two highlighted types of stock markets with regards to the impact of the global crisis and as well to further understand the impact of macroeconomic factors on both ISM and CSM performance.

As it has been pointed out earlier that, like general stock exchange market, Islamic stock market should have a market place, commodities and price mechanism. However, there are certain variations from the perspective of Non-Islamic or Conventional stock market which makes Islamic stock market quite unique. It is of no doubt that, Islamic stock market must be free from interest-based stock exchange market. In an Islamic economy in which interest-based bearing loan are totally prohibited and where direct participation in business enterprises with its intended risk and profit sharing are encouraged, the existence of a well-structured and functioning stock market cannot be over-emphasized because of its high importance.

The most obvious difference when Islamic finance is compared with the Conventional counterpart lies in that, Islamic finance forbids interest and under the Islamic jurisprudence (Shariah Law), money is seen only as a way of defining value of something and has no value itself, hence, money is not allowed to generate more money by being put into a bank account or lent to someone else, because, banks make their money by sharing the risk of their investment with investors, operating on a profit-loss basis. Therefore, rather than making money by offering loans and mortgages and charging an interest on them, as seen in

Conventional Bank process, the Islamic-Shariah-Complaint Banks would use its depositors' money to acquire assets, and the share the profits made on those assets with its depositors.

Numerous work and literature reviewed in this research work depicted that the empirical studies on Islamic indices are scarce (Rana & Akhter, 2015; and Lean, H & Parsva, 2012), and most of the studies focused on conventional indices (Zafar, 2013; Garza-Garcia & Yue, 2010; Gunasekarage et al., 2004; Sloan, 2012; Osisanwo & Atanda, 2012; Naceur, et al., 2007; Omondi & Muturi, 2013; Aurangzeb, 2012; Ali et al., 2010; Garcia & Liu, 1999; Hussin et al., 2012; Bredin et al., 2005; Vejzagic & Zarafat, 2013; Yartey, 2008; Patel, 2012; Kumar, 2013; Duca, 2007; Ouma & Muriu, 2014; Ouma & Muriu, 2014; Maghyereh, 2002; Maku & Atanda, 2010; Maku & Atanda, 2010; Kyereboah-Coleman & Agyire-Tettey, 2008; Rjoub, et, al., 2009; Rjoub, et, al., 2009; and Singh et al., 2011)

On the other hand, the literature review reveals that most of the studies are dedicated to a single index, which might not show the actual image of the Islamic stock markets over the globe. In order to overcome this shortage, this study is contributing to the present literature through studying a group of Islamic and conventional indices, hence, the focus of this study is not only on the test of the determinants of stock market performance but also on a co-movement relationship between Islamic stock market and conventional stock market. Also, the study addressed the integration between Islamic stock markets and their conventional counterparts, therefore; evaluating the Islamic stock market performance (comparative analysis with the conventional stock market)

The case-study covers 15 years of careful study, from January 2000 through December 2014, taking into account the impact of the 2007 financial crisis on the main axis of the study. The period of study was divided into three periods, namely, the pre-crisis period (January 2000 to July 2007), during crisis period (August 2007 to December 2008) following: (Abdul Kareem et al., 2010;) (Moeljadi, 2012); (Arouri & Jawadi, 2009) and post-crisis period, from January 2009 to December 2014.

To evaluate the performance of Islamic stock indices and conventional stock indices, Sharp ratio analysis was used, and the monthly data on total return for indexes are utilized in this analysis. The analysis of Sharpe ratio as shown in Table 9, elaborated that, during the entire period (from 2000 till 2014), as well as the pre-crisis period, the conventional indices outperformed the Islamic counterparts in the five countries except in Indonesia, while, during the mortgage crisis period, the performance of Islamic indices in all countries, except UK, were better than their conventional counterparts. The post-crisis period results indicated the recovery of all the indices to achieve positive SR and positive returns and the performance of conventional indices become better than the performance of Islamic counterparts.

Table 28 summarized the performance finding of Islamic and conventional stock indices and these results were largely consistent with the results of Abdullah and Hassan (2007) which pointed out that, the performance of Islamic assets were better than the conventional assets during bearish economic trends, while, conventional assets showed better performance than Islamic assets during bullish economic conditions. This development, we believe, may be due to the fact that the Islamic indices were more superior and were less affected by the crisis, for it does not rely on interest-based loans. However, in the post-crisis period, the conventional indices outperformed the Islamic counterparts.

Table 28: performance of stock indices and conventional stock indices.

Country	Canada		UK		USA		Japan		Indonesia	
Type	S&PTSX	DJIMCA	FTSE100	DJIMUK	S&P500	DJIMUS	NIKKEI225	DJIMUS	JCI	JII
Whole Periods	+		+		+		+			+
Pre-Crisis	+			+	+		+			+
During Crisis		+	+			+		+		+
Post-Crisis	+		+		+		+		+	

To investigate the co-movement relationship between Islamic and conventional stock market, a set of analysis methods were utilized, in array of, Vector Autoregressive Model (VAR), Engle-Granger Co-integration and Granger Causality test.

Table 13 and Table 14 report the findings of both VAR analysis and Granger Causality, respectively. The result from both analyses were identical, and it indicated that there is a two-way relationship between Islamic stock indices and conventional counterpart in Indonesia and Canada, and this implies that, Islamic and conventional stock markets affected each other in short-term, in the same country. However, for UK, USA, and Japan, there is only one-way Granger Causality towards the Islamic markets, which implies that the conventional stock markets affected the Islamic stock markets, giving an opportunity for investors to diversify between Islamic and conventional stocks.

Table 29: Direction of the relationship between Islamic indices and conventional indices

	Canada			UK			USD			Japan			Indonesia		
VAR	S&PTSX	⟷	DJIMCA	FTSE100	→	DJIMUK	S&P500	→	DJIMUS	NIKKEI225	→	DJIMUS	JCI	⟷	JII
Granger Causality		⟷			→			→			→			⟷	
Engle-Granger		-			-			-			-			-	

To investigate the relationship between Islamic stock market and the conventional counterpart in the long-term, Engle-Granger co-integration tests was used. The results in Table 15 indicated that, there is no co-integration between series in each country in the long-term. Therefore, the investors can utilize the portfolio diversification between the Islamic and conventional stock market to reduce the risk in long-term. To buttress this claims, result gotten is consistent with some previous studies such as that of (Masih, 2015; Arshad and Rizvi, 2013; and Hussin et al., 2013). Table 29 summarizes the direction of the relationship between Islamic stock indices and the conventional counterpart.

To test the determinants of stock market performance of both conventional and Islamic indexes, a multiple linear regression model was used; Table 22 shows the multiple regression analysis results and Table 30 further summarizes the multiple linear regression. Furthermore, Stepwise regression tool was implemented to avoid multi-collinearity problems of sample data and to exclude non-influencing factors. Tables 23, 24, 25, 25, 26 and 27 show the stepwise regression analysis, and we noted that after applying the stepwise regression, some ineffective independent factors were excluded from each country, and in this same interval, some influence independent factors appeared in some country. In Table 31, the results of stepwise regression analysis were shown.

Comparing Table 31 with Table 30, we find out that the result of Stepwise analysis confirmed and buttressed the results of the multiple analysis, moreover, the same influences factors appeared in additional countries of the samples.

Table 30: Summary of the results of regression analysis

	Canada		UK		USA		Japan		Indonesia	
IV's	**S&P/TSX**	**DJIMCN**	**FTSE100**	**DJIMUK**	**S&PCOMP**	**DJIMCUSA**	**NIKKEI 225**	**DJIMJA**	**JCI**	**JII**
ln(IR)									-	-
ln(ER)	-	-		-			+		-	-
ln(M3)						-				
ln(GP)				-						
ln(OP)		+		+				+		+
ln(GDP)	+									

Table 31: Summary of the results of stepwise regression analysis

	Canada		UK		USA		Japan		Indonesia	
IV's	**S&P/TSX**	**DJIMCN**	**FTSE100**	**DJIMUK**	**S&PCOMP**	**DJIMCUSA**	**NIKKEI 225**	**DJIMJA**	**JCI**	**JII**
ln(IR)									-	-
ln(ER)	-	-		-			+		-	-
ln(M3)					-	-				
ln(GP)				-						
ln(OP)	+	+		+				+	+	+
ln(GDP)	+	+	+						+	+

As seen in Table 31, the interest rate has a negative impact on both the Conventional and Islamic Indonesian indices (JCI and JII), which means that the higher the interest rate, the lower the efficiency of the stock market. This result is consistent with Khalid (2017); Ali, (2014); Ahmad et al (2010); Liow and Huang (2004) and Foo, (2009). This can also be attributed to the fact that when investors are getting a higher return on their investment without taking any risk, they will not go to invest in financial markets. On the contrary, when the interest rate is low on their investment, they tend to move their money into the stock market in order to gain higher profits.

There are mixed empirical results and studies regarding the impact of exchange rate on the stock market index. Table 31 pointed out that the exchange rate has a significant negative influence on the indices such as the Conventional and Islamic indices in Canada (S&P/TSX and DJIMCN), Islamic index in the UK (DJIMUK), and the Conventional and Islamic indices in Indonesia (JCI and JII). This result is consistent with some previous studies such as that of Khalid 2017; Mukit, 2013, Hasan and Nasir, 2008; and Solnik, 1987 and also with the portfolio approach, which argues that there is a negative correlation between stock market index leading the foreign exchange market (Foo, 2009). This implies that the currency depreciation may lead to stock market depression and this result could be attributed to the exchange rate depreciation, generating a case of uncertainty of expected profits and its net present value falls. In contrast, the findings also showed that there is a significant positive influence of exchange rate on the conventional Index in Japan (NIKKEI225) and (Ihsan, et al., 2015; Ahmad et al., 2010; Mukherjee and Naka 1995) found positive impact of exchange rate on stock market performance. The Japanese exchange rate results is consistent perfectly with Mukherjee and Naka (1995) where they pointed out that the exchange rate has positive impact on stock prices in Japan. This result can be attributed to Japan as an export-oriented country, and depreciation of domestic currency promotes exports and increase stock prices.

The result in Table 31 indicated that the money supply has a negative impact on only USA indices S&PCOMP and DJIMCUSA. This finding is consistent with Ouma & Muriu, 2014; Vejzagic and Zarafat, 2013; Hussin et al., 2012; and Maku and Atanda, 2010. The negative relationship between money supply and stock market prices can be associated with the increasing money supply and the resulting drop in interest rates which makes stocks more attractive to investors, and when investors can only obtain a low rate of return on investment by lending money, they tend to shift more money to stocks.

The gold price has a significant negative impact only on DJIMUK. This result is consistent with Patel, (2012). Gold price is expected to be negatively correlated to stock market price, since gold is a valuable asset and more safety for many investors, then it is expected that as stock prices decrease, then investors become pessimistic about stock market performance.

The oil price has significant positive relationship with all of DJIMCA, DJIMUK, DJIMJAP, and JII. This result is consistent with Siddiqui and Muhammad, 2013; Kang et al., 2017; Wang et al., 2013; Malik and Ewing, 2009. In the same time this result contrasted with the study of Babatunde, (2013) who pointed out the negative impact of oil price on stock market performance.

Also, the GDP has positive influence only on the Canadian conventional index (S&P/TSX) and analysis showed that there is no significant impact of CPI on any index. As expected, any significant change in GDP- up or down- usually has a significant effect on the performance of the stock market. For example, when an economy is healthy and growing, it is expected that businesses will report better earnings and growth. Obviously, the higher profits encourage investors to move towards investing in the stock market and at the same time, lower GDP can have the opposite effect on stock prices as businesses begin to suffer.

Our study provided an important practical implementation as well as supporting evidence from previous studies. The findings reflect that performance of Islamic assets outperformed the Conventional assets during bearish economic trends, while Conventional assets outperformed Islamic assets during bullish economic conditions.

This study uncovered that there is no co-integration between Islamic and conventional stock market indices in long-term, while the Conventional stock markets affected the Islamic stock markets in short-term. The results analysis for the determinants of market performance revealed that there are no statistical differences between the factors affecting the Islamic and the Conventional stock market indices, and the analysis of stepwise regression shows that the main determinants of the stock market performance are exchange rate, GDP, and oil price.

Finally, at the end of this study and taking into account the previous studies, we can boldly suggest the following recommendations:

- The remarkable development and growth of Islamic investment requires more attention and more research studies.
- The remarkable growth and widespread of Islamic finance is an incentive for any wise investor to consider investing in, especially when Islamic finance has proved to have greater ability to withstand crises.
- The absence of a correlation between the Islamic stock market and its conventional counterpart in long-term considered as a good opportunity point for diversification between them.
- For a better economy, state should lower their interest rate, to a point it reaches interest-free financing, so that economy of such state or country can develop more and faster.

- Islamic finance institutions need to play a better role by introducing Islamic finance.
- Islamic finance regulators need to play a more significant role in order to ensure maximum adherence to Islamic standards.

It is worth mentioning that, the finding of this thesis should be interpreted within its limitations. This thesis has restricted case studies that should be noted thereof, the sample studies used were limited to only five countries and it was difficult to obtain financial data regarding Islamic finance especially from some countries, for instance, Malaysia. On the other hand, the modernity of Islamic stock markets, and the scarcity of Islamic stock indices that is matching the study periods between 2000 and 2014, for example, Turkey, are scarce and in general, data sources are not well available or in abundance, and this study was dependent on gathering data mainly from DataStream database.

APPENDICES

Appendix 1: Summary of the previous studies about determinants of stock market performance.

	author(s)	Sample	Model(s)	Findings
1	Zafar 2013	Pakistan 1988- 2008	Regression analysis	Both foreign direct investment and value traded have positive impact on the performance of Pakistani stock market. While there is a negative relationship between real interest rate and stock market performance.
2	Garza-Garcia & Yue, 2010	Shanghai 1992-2008	Johansen Maximum Likelihood	Prices of Chinese stock are determined by changes in following variables: the exchange rate, inflation, money supply, short-term interest rates and industrial production. This study also finds argued that US economic and financial indicators, namely the industrial production, Dow Jones Industrial Average and the consumer confidence index, are significantly affecting Chinese stock prices
3	Gunasekarage et al., 2004	Sri Lanka 1985-2001	Unit roots test, co-integration test, VECM, VDCs, IRFs	the consumer price index, the Treasury bill rate, and the money supply have a significant ımpact on the stock market. The Treasury bill rate recorded the strongest influence on changes of stock price compared to other variables. However, the share price index does not have any influence on macroeconomic variables except for the Treasury bill rate. The finding of IRF and VDC analyses stated that shocks to economic variables explained only a minority of the forecast variance error of the market index; these effects did not persist for very long
4	Sloan, 201	Dow Jones stocks 1990-2011	APT	a significant relationship between previous return, unemployment, inflation, real GDP, earnings yield, term Spread, T-bill rate and stock returns
5	Osisanwo & Atanda, 2012	Nigeria 1984-2010	OLS	significant influence of interest rate, exchange rate and previous stock return on the stock returns in Nigeria
6	Naceur, et al., 2007	MENA 1990-1999	fixed effects and random effects	saving rate, stock market liquidity, financial intermediary, and the stabilization variable have important role in stock market development
7	Omondi & Muturi, 2013	Kenya 2006-2012	multiple-regression	liquidity, company size, and company age had a significant positive effect on

			analysis	financial performance, while the leverage had significant negative effect on financial performance
8	(Aurangzeb, 2012	Pakistan, India and Sri Lanka 1997-2010	multiple regression analysis	exchange rate and foreign direct investment have positive and significant effect on South Asian countries stock market performance while; inflation and interest rate have significant negative effect on South Asian countries stock market performance
9	Ali et al., 2010	Pakistan 1990-2008	Johansen's co-integration method and Granger's causality	There is co-integration between stock exchange prices and industrial production index. However, no causal relationship was found between macroeconomic indicators (exchange rate, inflation, index of industrial production and balances of trade) and the prices stock exchange in Pakistan
10	Garcia & Liu, 1999	15 industrial and developing countries 1980-1995	Regression and correlation	saving rate, real income, liquidity, and financial intermediary development are important determinants of stock market capitalization
11	Hussin et al., 2012	Malaysia 1999-2007	VAR	industrial production index and consumer production index had positively and significantly effect on Islamic stock market prices, while money supply and exchange rate had significant negative effect on Islamic stock market prices. Meanwhile, the result of Granger causality showed that consumer production index, money supply, and exchange rate are Granger cause Kuala Lumpur Syariah Index and the Kuala Lumpur Syariah Index is the Granger cause for industrial production index, exchange rate and consumer production index
12	Bredin et al., 2005	Canada, U.S., Germany, France, U.K, and Japan 2000-2006	smooth transition regression	that inflation and interest rate are strong determinants of stock market returns of the six countries, while industrial production, growth and oil prices and dividend yields are considered in individual cases. On the other hand, results show that covariance of countries' return with the world market portfolio increased during the crisis
13	Vejzagic & Zarafat, 2013	Malaysia 2006-2012	Co-integration test, VDC, Impulse Response Function (IRF)	finding shows significant relationship with exchange rates, interest rate, and money supply; it's negatively affecting exchange rate and interest rate while positively affecting money supply

			and VECM	
14	Yartey, 2008	42 developing economies 1990-2004	Calderon-Rossell Model	macroeconomic factors such as gross domestic investment, income level, banking sector development, stock market liquidity and private capital flows are essential determinants of stock market development in developing market countries. Also, the analysis shows that bureaucratic quality, law, and regime, and political risk are important determinants of stock market development because they enhance the external finance
15	Apiyeva, 2007	Latin America and Asia Pacific 1985-2003	multivariate linear model	financial risk premium and Institutional Investor's country ratings are the main determinants of the stock market performance in the mentioned above stock market
16	Patel, 2012	India 1991-2011	Unit root test, Granger Causality test, Johansen Co-integration test, VECM	there is a long-term equilibrium relation between stock indices and all above mentioned macroeconomic variables. Also, the analysis provides evidence that exchange rate, Index of Industrial Production and Oil Price are Granger Cause stock market indices. Finally, the price of gold, silver, and oil are major determinants of stock markets
17	Kumar, 2013	India 2001-2013	Exploratory Factor Analysis (EFA) and Principal Component Technique	industrial performance plays an important role in the stock market performance. On other hand, the policy of interest rates have some impact but it does not seem sustainable
18	Duca, 2007	US, UK, Germany, and Japan 1957-2004	Granger Causality test	stock prices appear to Granger cause GDP. Moreover, no causality was found in the reverse direction. While in the case of Germany, the relationship between stock prices and GDP is independent of one another
19	Ouma & Muriu, 2014	Kenya 2003-2013	CAPM and APT	exchange rates, inflation, and money supply affect the stock market returns. However, exchange rates have negative influence on stock returns, while there is no a significant relationship between interest rates and long-run returns
20	Maghyereh, 2002	Jordan 1987-2000	Johansen's vector error-correction model	exports, foreign reserves, industrial production, interest rates and inflation are important determinants of stock prices in the Jordanian stock market
21	Abdullah M. Noman et al., 2012)	Bangladesh 1983-2010	Granger causality tests	The analysis indicate absence of any causality between exchange rate and

				stock market
22	Maku & Atanda, 2010	Nigeria 1984-2007	Augmented Engle-Granger Co-integration test	the stock market in Nigeria is more responsive to changes in inflation rate, money supply, exchange rate and real output
23	Kyereboah-Coleman & Agyire-Tettey, 2008	Ghana 1991-2005	Co-integration test and the error correction model	inflation rate and lending rates have an adverse effect on stock market performance, while Treasury bill rates have a weak effect stock market performance in Ghana
24	Rjoub, et, al., 2009	Istanbul Stock Market 2001-2005	APT	there is a significant relationship between the stock return and the selected macroeconomic variables; namely, term structure of interest rate, unanticipated inflation, money supply and risk premium
25	Babatunde, 2013	Nigeria 1995-2008	multivariate vector auto-regression,	stock market returns showed insignificant positive response to shocks of oil price, but after a period of time the stock market return reverts to negative effects depending on the nature of the oil price shocks
26	Singh et al., 2011	Taiwan 2003-2008	regression analysis	GDP and exchange rate have positive impact on the returns of all portfolios, whereas inflation rate, and money supply have negative relationship with returns of portfolios
27	Abdelrahim, 1990	Kuwait 1979-1988	Ordinary least squares regression analysis	there is a significant relationship between stock prices and some macroeconomic namely; sight deposits, government expenditure, oil revenues, exchange rate, money supply
28	Rana & Akhter, 2015	Pakistan 2008-2013	GARCH-M	Interest rate volatility has a positive and significant effect on KSE -100, whereas the Islamic index KMI-30 remains unaffected by interest rate volatility. A significant impact exchange rate volatility was found on both conventional and Islamic indices. The result of parametric t-test analysis pointed that no significant difference between returns of Islamic index and conventional indices in Pakistan. This means Shariah screens did not have negative impact on the Islamic stock index

Appendix 2

Lag	Canada		UK		USA		Japan		Indonesia	
	FPE	**AIC**	**FPE**	**AIC**	**FPE**	**AIC**	**FPE**	**AIC**	**FPE**	**AIC**
1	2.58E-06	-7.192203	1.13E-06	-8.020556	4.21E-07	-9.004598	2.75E-06	-7.129699	1.88E-06	-7.50588
2	2.63E-06	-7.171864	**1.11e-06**	**-8.036390**	**4.16E-07**	**-9.016366**	**2.63E-06**	**-7.171755**	**1.81e-06**	**-7.548187**
3	2.55E-06	-7.205523	1.14E-06	-8.009227	4.18E-07	-9.011308	2.79E-06	-7.114553	1.93E-06	-7.481127
4	2.61E-06	-7.18226	1.17E-06	-7.98489	4.18E-07	-9.0116	2.85E-06	-7.092377	2.02E-06	-7.436584
5	2.55E-06	-7.203504	1.19E-06	-7.969957	4.36E-07	-8.970249	2.93E-06	-7.065556	2.09E-06	-7.402928
6	**2.39e-06**	**-7.268650**	1.20E-06	-7.958045	4.30E-07	-8.984056	2.96E-06	-7.056728	2.08E-06	-7.41011
7	2.47E-06	-7.234731	1.21E-06	-7.948638	4.40E-07	-8.96121	2.93E-06	-7.064496	2.13E-06	-7.383523
8	2.52E-06	-7.21557	1.26E-06	-7.907669	4.52E-07	-8.935168	3.05E-06	-7.026961	2.17E-06	-7.3679

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