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## Exploring the impact of oil price on Sukuk issuance

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**Exploring the Impact of Oil Price on Sukuk Issuance: The Case of the GCC  
Market**

A Thesis Submitted in Partial Fulfillment of the  
Requirements for the Master Degree in  
Islami Finance Management

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This thesis, written by Adwaa Sami Melebari under the direction of her thesis supervisor and approved by her thesis committee, has been presented to and accepted by the Dean of Graduate Studies and Research on Exploring the Impact of Oil Price on Sukuk Issuance: The Case of the GCC Market, in partial fulfillment of the requirements for the degree of MASTER OF SCIENCE in Islami Finance Management

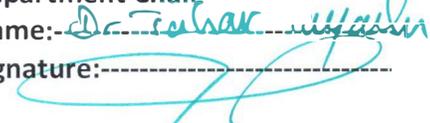
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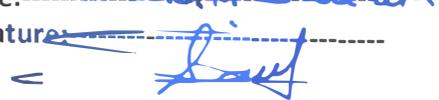
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## **Abstract**

Major share of the revenue for most of the GCC economies depends on the export of oil. Past decade has witnessed a steep changes in the oil prices. On one side, the oil price hit US\$ 150 per barrel mark while on the other side it touched US\$ 28 per barrel recently. Most of the corporate GCC also depends on the change in oil prices. During the rising trends, corporation may need to borrow to fund the expansion while during the contraction, corporations may borrow to survive the contraction phase. This study examines the impact of change in oil prices on sovereign and corporate Sukuk issuance in the GCC region for the period from 2005 to 2015. The choice of Sukuk as a debt instrument is relevant for the region as majority of the population in the region is Muslim thus makes Sukuk as an instrument of first choice for issuer. By using univariate and multiple regression analysis, this study finds that total Sukuk issuance is not affected significantly by change in oil prices during the sample period. Nonetheless, it has been observed that GDP is a factor to influence the Sukuk issuance in all three categories, whereas interest rates have significant impact on sovereign Sukuk, issuance and firm size have a significant impact on corporate Sukuk issuance.

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## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the Study**

Oil is the major source of revenue for most of the economies in the GCC region. The changes in oil price has been considered as one of the most important factor for both government and corporate sector. An adverse movement in oil price can significantly impact economic activities such as financial services, import and export of goods, (Rusgianto & Ahmad, 2013; Jobst Kunzel Mills & Sy, 2008; Mohamed Masih & Bacha, 2015). Oil price has seen a great variation in the past decade. Both the rising and declining trend in oil prices have consequence for debt issuance at both corporate and sovereign level. During the rising trend debt issuance is required to fund the infrastructure development needs while during the recession debt is issued to finance the deficit.

This study examines the the impact of change in oil prices on sovereign and corporate Sukuk issuance<sup>1</sup> in the GCC region for the period from 2005 to 2015. The choice of Sukuk as a debt instrument is relevant for the region as majority of the population in the region is Muslim thus makes Sukuk as an instrument of first choice for issuer.

#### **1.1.1 Stylized Facts About Sukuk And Issuance**

Sukuk represents undivided shares in the ownership of tangible assets relating to particular projects or special investment activity (Said & Grassa, 2013; Wilson, 2008; Wedderburn-Day, 2010). Thus, undivided ownership of the tangible assets is represented by Sukuk, which relates to a particular project or investment activity. Sukuk are structured to comply with the prescriptions of sharia law. Unlike conventional bonds, Sukuk do not pay interest as this would contravene the prohibition of riba. Instead, investors in Sukuk receive

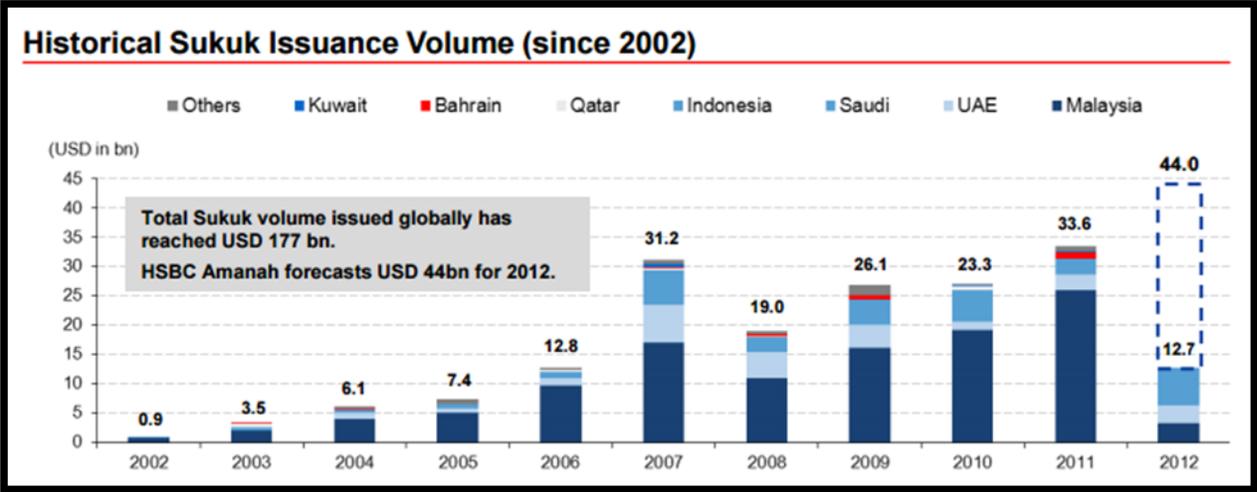
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<sup>1</sup> Sovereign Sukuk are issued by sovereign entities, like those by the government. Whereas, the Sukuk issued by the companies for financing of their operations are the Corporate Sukuk.

income either as a pre-determined share of profits or from other payment streams such as rent. Nevertheless, the return on Sukuk is usually structured so as to resemble the cash flow derived from a conventional bond various Sukuk structures exist like Mudaraba (equity investment), Ijarah (leasing/renting), Istisna (project finance) and Musharaka (joint venture) being the most common (Elkarim, 2012; Alsaeed, 2012; Solé, 2008). These are some of the Sukuk that are trading worldwide; which had issued 0.9 billion in 2002; and had reached to 33.6 billion in 2011. This shows that issuance of Sukuk increased from 0.9 billion to 33.6 billion within 9 years period, as illustrated by the below stated figure.

Initially, investors were not investing in the Sukuk trading due to the lack of profit and interest; however, as time passes, issuance of Sukuk increase worldwide. From the below stated figure, it is important to demonstrate that Malaysia was the country that started the trading of the Sukuk. Beside Malaysia, UAE and Saudi Arabia were the other major countries that tried to increase their trading within Sukuk market. Hence, Saudi Arabia and UAE are two of the GCC countries that have strong Sukuk issuance volume.

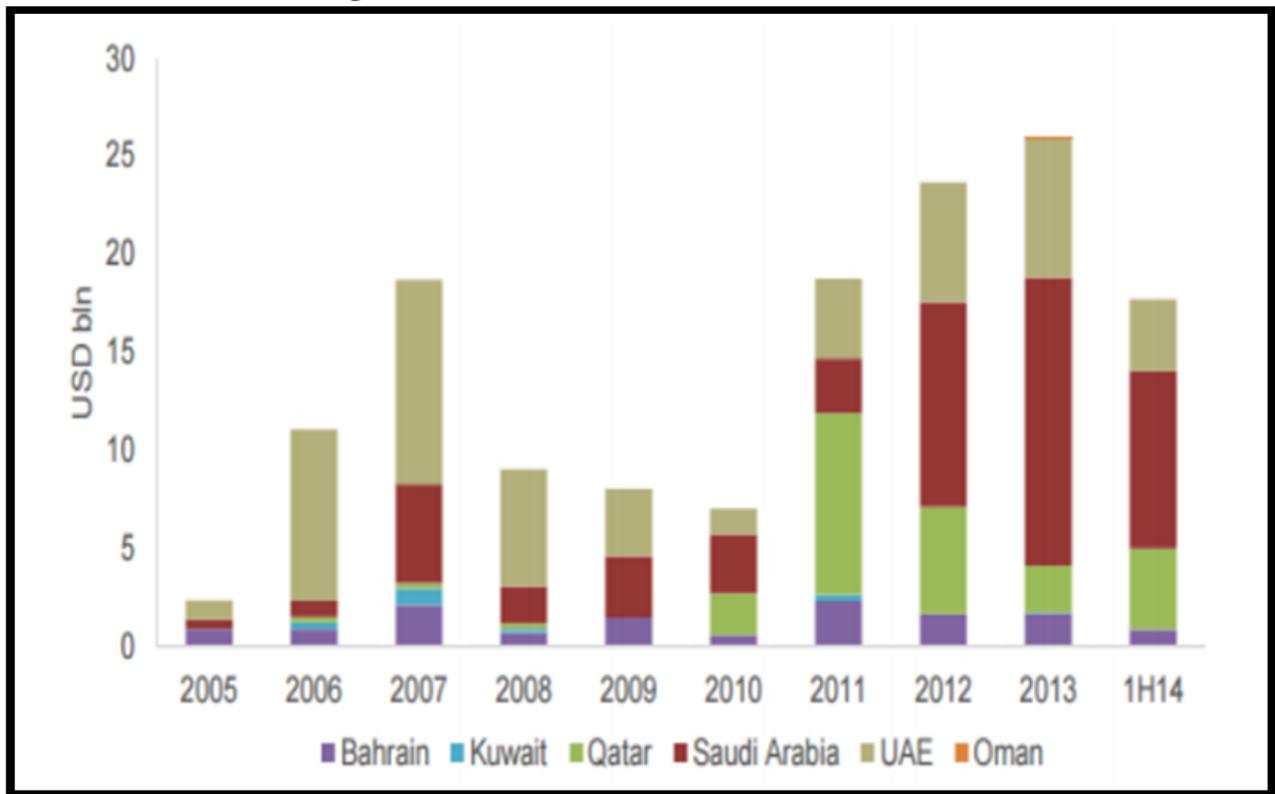
**Figure 1: Sukuk Issuance Volume**



Source: Source: HSBC, Deallogic 29 April 2012

Beside Saudi Arabia, as demonstrated by the Figure 2 below, it is identifies that Qatar and UAE are the other countries within GCC that have attractive Sukuk trend. The imperative purpose behind the high Sukuk trading trend in Saudi Arabia, UAE, and Qatar is that these states are based on the Islamic values and thus, Islamic bonds and Sukuk attract the investors of these countries. As the result of the trading of Sukuk within GCC states, capital market of the GCC states have transformed from 2.7 billion USD to 58.6 billion USD in 2015. Success in the financial institution increased due to the leading role played by the Qatar National Bank, National Bank of Abu Dhabi, Emirates, NBD and First Gulf Bank.

**Figure 2: Sukuk Issuance Trend in the GCC**

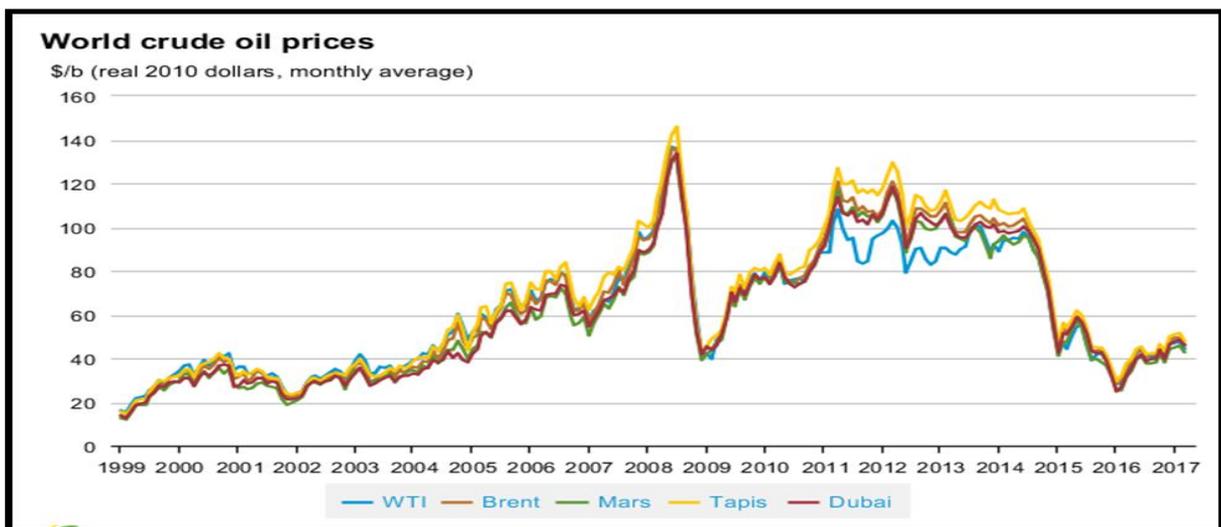


*Source: Zawaya*

### 1.1.2 Volatility of Oil Prices

Oil plays a central role in the six GCC states that have used oil for increasing the economic growth of the countries. However, this require large number of capital resources that are used for the mining, refining, extracting activities. Instead of high expenditures interlink with the oil industry, import and export of oil increase the economic growth of GCC countries which in turn enhance the living standard of the people (Said & Grassa 2013; Wilson 2008; Wedderburn-Day 2010). Considering the volatility of oil prices in research, Said & Grassa (2013); Wilson (2008) illustrate that price of oil was US18/barrel in 1999; however, in the mid of 2000, the prices of oil increased worldwide to US40/barrel. Conversely, in 2002, volatility in the oil prices increased, which in turn decreased the oil to US20/barrel. After 2002, prices of oil continuously increase and reach US140/barrel in 2009. However, financial crises transform the situation and certainly, oil prices decreased to US40/barrel in 2009. Considering oil prices, Wilson (2008); Wedderburn-Day (2010) critically state that due to financial crises, volatility in the oil prices increase and decrease.

**Figure 3: Volatility in the oil Prices**



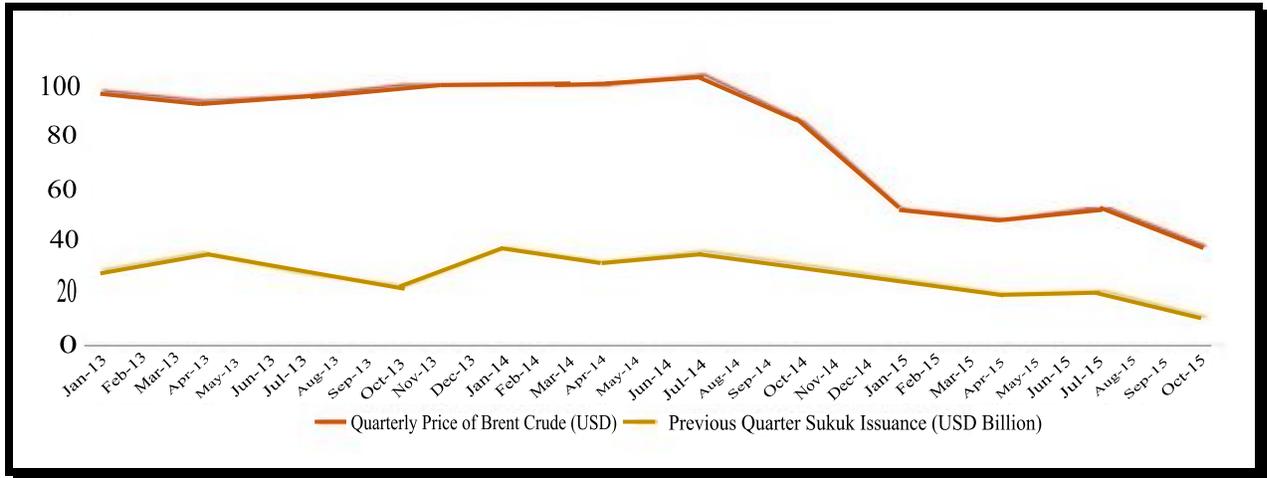
Sources: Bloomberg L., Thomson Reuters. Published by: US Energy Information Administration

### **1.1.3 Oil Prices & Sukuk Issuance**

On the basis of the study conducted by Rusgianto & Ahmad (2013); Hesse & Poghosyan (2009), one of the biggest drops on the Sukuk index was when the Sukuk index lost 5.16 percent due to the reduction in the prices of oil. During this time, the bond price index was even barely changed. The price of bonds plunged 6.71 percent from the September to the October in 2012. The reasons are the first Sukuk default, of East Cameron Partners, and falling oil price, in which the Middle East was hurt the most. From its highest price of 147.27 in 2008, the oil price dropped 78 percent to the lowest price of 32.40 in 2008 (Elkarim, 2012; Alsaeed, 2012; Solé, 2008). The falling oil price undermined demand from the vast pool of Middle East investors, in which, together with Asia, are the main issuers and buyers of Islamic bonds.

Figure below shows the relationship between Sukuk market and volatility in the oil prices. According to the figure, there was the indirect relationship between Sukuk and oil prices in 2013; however, in 2015, the prices of oil and Sukuk market went to the same direction i.e. when the prices of oil increased, prices and revenue of Sukuk increased; on the other hand, when the prices of oil decreased then the prices and revenue of Sukuk decreased. The major reason behind the significant relationship between Sukuk and oil prices is the interconnection between oil prices and financial sector. However, Said & Grassa 2013; Wilson 2008; Wedderburn-Day 2010 critically, state there is the inverse relationship between Sukuk issuance and oil price, thus, when prices of oil reduce, GCC countries focus on the issuance of Sukuk in order to raise the sovereign fundraising for the economy of countries.

**Figure 4: Sukuk Issuance and Oil Prices**



*Source: Hegazy Law. Published by Dr. Wild Hehazy and Phil Zager (2016)*

In order to sort out this, this study will use certain controlling macroeconomic and firm-specific variables variables such as GDP, interest rate, inflation, surplus/deficit to GDP, gross capita formation, firm size, return on asset, and capital expenditure that will used to identify the impact of oil prices on the Sukuk issuance in GCC countries (Elkarim, 2012; Alsaeed, 2012; Solé, 2008). These variables will help in testing regression between two main variables i.e. Sukuk issuance and oil prices. Also, log of variavbles will be used to structure the data to look more like of the statistical form. STATA SE will be used for statistical inferences, calculations, and testing (Said & Grassa 2013; Wilson 2008; Wedderburn-Day 2010).

## **1.2 Research Aims and Objectives**

The drop in oil price has not only affected the governments but also the oil dependent industry of the GCC region. With the drop in oil prices, it was expected by the government and regulatory bodies that the issuance of Sukuk will increase in 2015 as governments and corporations in the region may raise funds from the Islamic capital market to fund the shortfall in their budgets (Rusgianto & Ahmad, 2013; Jobst Kunzel Mills & Sy, 2008; Mohamed Masih &

Bacha, 2015). Thus, this study attempts to find an association between the issuance of Sukuk and global oil prices in the GCC region for the period from 2005 to 2015. For the research purpose, this study covers the following objectives:

- To find out the association in overall Sukuk issuance and oil price;
- To examine the effect of oil prices on sovereign Sukuk issuance; and
- To observe the effect of oil prices on corporate Sukuk issuance;

### **1.3 Research Questions**

There are three questions that will be particularly answered in this thesis;

- Is there any association in overall Sukuk issuance and oil price?
- What is the effect of oil prices on sovereign Sukuk issuance?; and
- What is the effect of oil prices on corporate Sukuk issuance?

### **1.4 Research Hypothesis**

The main hypothesis as below:

1. *H<sub>0</sub>: Total Sukuk issuance is not affected by the change in the oil price*  
*H<sub>1</sub>: Total Sukuk issuance is affected by the change in the oil price*
2. *H<sub>0</sub>: Sovereign Sukuk issuance is not affected by the change in the oil price*  
*H<sub>1</sub>: Sovereign Sukuk issuance is affected by the change in the oil price*
3. *H<sub>0</sub>: Corporate Sukuk issuance is not affected by the change in the oil price*  
*H<sub>1</sub>: Corporate Sukuk issuance is affected by the change in the oil price*

### **1.5 Significance of the Study**

This study will be beneficial in finding the association between Sukuk issuance and oil price for the GCC countries especially for the UAE, Saudi Arab, and Kuwait. Through effective use of this study, government and regulatory bodies of GCC countries will develop aggressive

alternative strategies that would be helpful at the time of volatility in oil prices and Sukuk issuance. In short GCC countries could use this strategy with an intention to reduce the impact of risk and threat associate with volatility in oil prices and financial market especially Sukuk issuance (Fratzscher, Schneider & Van Robays, 2014; Said & Grassa 2013; Wilson 2008; Wedderburn-Day 2010).

## **1.6 Problem Statement**

According to Aloui et. al (2015); Rusgianto & Ahmad (2013); Hesse & Poghosyan (2009), regardless of the expectation of issuance of Sukuk by sovereigns to fill the deficit in government funding caused by the fluctuations in oil prices, issuance of Sukuk is not rising owing to numerous factors such as demand and supply of conventional financial products like bonds and shares. Thus, it will be interesting to find whether the fluctuaciones in oil prices affecte the Sukuk Issuance.

## **1.7 Structure of the Dissertation**

Following is the structure of thesis that will be followed in order to achieve the main objective of this study:

- Chapter 1 – Introduction: This chapter introduces the topic of the study which is to find out the impact of oil prices on Sukuk Issuance. This section introduces the research objective of the study attempts to the effect that issuance of Sukuk receives from the global oil prices in GCC countries. Further, this section sets an outline on the basis of which entire thesis will be aligned.
- Chapter 2 – Literature Review: This chapter will include the literature from past research studies, their methods of study and findings.

- Chapter 3 – Research Design: This section will include the structure of research, from collection of data, to testing and analysis. The techniques and statistical inferences to be used will be explained in this section.
- Chapter 4 – Results and Discussion: This chapter will analyze all the results, and will mention all the findings of the research study. All the results will be thoroughly interpreted in this section followed by a detailed discussion and analysis.
- Chapter 5 – Conclusion and Recommendations: This chapter will conclude the results and findings of the research. Furthermore, it will include recommendations for studying the issuance of Sukuk and its factors.

## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Introduction

The focus of this part of the research is on past studies that were already conducted on the stated topic i.e. impact of oil prices on the Sukuk issuance of GCC market. For the research purpose, this study covers multiple objectives i.e. to find out the association between Sukuk issuance and oil price; to examine the impact of change in oil prices on sovereign Sukuk issuance; and to investigate whether change in oil price affect the corporate Sukuk issuance.

### 2.2 Sukuk, Types, Benefits and Its Articles

On the basis of the study conducted by Mohamed Masih & Bacha (2015); Nienhaus, Nienhaus, Karatas & Karatas (2016); Rusgianto & Ahmad (2013), Sukuk includes the securities that involve specific physical assets and the establishment of contracts such as leases and partnership that are consistent with lucre-free banking law. Jobst, Kunzel, Mills, & Sy (2008); Mansoor Khan & Ishaq Bhatti (2008); Ibrahim (2015) defines the Sukuk as:

*Certificates with the same nominal value that after completion of the underwriting, represent the payment of the nominal amount set forth there by the buyer to the publisher and its owner will own one or set of assets, the benefits of the property or will be the beneficiary of a project or investment activity.*

Sukuk is the security with the same monetary value and can be traded in financial markets designed based on Islamic law contracts and the holders of securities will jointly own one or set of assets and their profits. The difference between Islamic financial instruments (Sukuk) and bonds (fixed-income usury securities) are:

1. Sukuk represents the ownership of a determined asset, while bonds are only indicative of debt obligations. This means that the relationship between the issuer and the bond buyer is the relationship between the lender and the borrower that the loan interest rate is fixed and this is the same as *lucre* (Jobst, Kunzel, Mills, & Sy, 2008; Said & Grassa, 2013).
2. The assets that back Sukuk must be Shariah compliant assets. While in the case of the bond, assets may include product or services are not acceptable in Islam.
3. The validity of the bonds depends on the issuer credit and is measured by that, while the Sukuk credit does not depend on the publisher but depends on the value of the backing asset.
4. Sukuk sales in the secondary market, is the sale of ownership of an asset but the sale of bonds is the debt sale.
5. Sukuk value can increase when the assets increase. While it is not possible to increase the debt in bonds as Profits from bonds correspond to fixed interest, making them *Riba*. (Halim, How & Verhoeven, 2016; Godlewski, Turk-Ariss, & Weill, 2013).

Sukuk has several advantages and in opinion of Fratzscher, Schneider & Van Robays, (2014); Hesse & Poghosyan (2009), some of the major benefits of Sukuk, in the thought of researchers, are as follows:

1. Increase in founder liquidity (financer by the issuance of Sukuk).
2. In case of issuance of Sukuk backed by low liquidity assets or noncash assets, these assets will be removed from the balance sheet and cash will substitute.
3. Although a portion of the assets is separated of the founder company, yet again, the sponsor can use the asset.

4. Since the Sukuk is issued backed by asset it is less risky and also reduces the cost of financing (Mohamed Masih & Bacha, 2015; Nienhaus, Nienhaus, Karatas & Karatas, 2016; Rusgianto & Ahmad, 2013; Ahmad, Daud, & Kefeli, 2012).
5. Support the development of the capital market by providing the possibility to convert assets into securities.
6. If a secondary market is provided to trade these securities, the possibility of liquidity of these securities will increase.

In addition to these benefits of Sukuk, Alam (2009); Alaoui, Dewandaru, Rosly, & Masih (2015); Aloui, Hammoudeh, & ben Hamida (2015) state that Sukuk holders represent rights to receive periodic payments from a trade transaction, ownership or a particular asset, or a business venture. This in contrast to conventional bond holders where returns represent the right to receive indebtedness for borrowed monies (Zulhibri, 2015; Mohamed Masih & Bacha, 2015; Wilson, 2008). Sukuk thus represents ownership of an asset or its usufruct, where the claim embodied in Sukuk is not simply a claim to cash flow but to ownership of the asset or its use over the given period of time or tenor of the issuance. This differentiates Sukuk from conventional bonds as the latter involves interest bearing securities, whereas Sukuk are essentially investment certificates consisting of ownership claims to a pool of tangible and/or intangible assets (Elteir, Ragab & Eid, 2013; Roch, 2005; Fratzscher, Schneider & Van Robays, 2014); Hesse & Poghosyan, 2009). Sukuk are financial papers representing financial obligations originating from trade and other commercial activities. Through a securitization process, Sukuk are the ownership of the underlying assets transferrable to a large number of investors through certificates representing proportionate value of the relevant assets. As described by Aloui, C., Hammoudeh, S., & Hamida, H. B. (2015), Sukuk investment principles prohibit the charging, or

paying of interest, for the reason that interest is based on charging money on money. The Shariah classifies money to be a means of exchange and a measuring mean for value and not assets, hence, the Shariah proscribes accepting proceeds from money, like the trading/selling of debts, receivables, conventional loans and credit card interest.

The Shariah rationale is to promote the production of tangible assets for real value for the economy and the community. The rich do not have the right to take advantage of the need for money for the poor, because this is considered socially repressive and regressive and inculcates a sense of injustice and thus pre-empts social cohesion (Said & Grassa, 2013; Aloui, Hammoudeh & Hamida, 2015). Financial assets that comply with Islamic law can be classified in accordance with their tradability and non-tradability in the secondary markets. In addition there are restrictions which mean that securitized assets are not to be over-leveraged during the course of asset backing. Sukuk instruments can thus help to unlock the unlimited possibilities, especially for financing a whole range of financial and economic activities and originated by a bevy of issuers ranging from sovereign, quasi-sovereign, multilateral, corporate and even social ones. The evolution of the Islamic capital market in the last decade has elevated the importance of Sukuk compared with other traditional fixed income instruments (Mohamed Masih & Bacha, 2015; Nienhaus, Nienhaus, Karatas & Karatas, 2016; Rusgianto & Ahmad, 2013; Ahmad, Daud, & Kefeli, 2012).

### **2.3 Sukuk, Economic Activity, and Oil Industry**

On the basis of the study examined by Hesse & Poghosyan (2009), Sukuk securities has been considered as the appropriate tools to provide the liquidity requirements of enterprises; and thus, plays an important role in the success of economic activity. With respect to the lack of diversity in the Islamic financing tools, such as Sukuk financing, it is difficult for the Islamic

bank to move in the strong economy. Similarly, Jobst, Kunzel, Mills, & Sy (2008); Said & Grassa (2013) state that it is difficult to identify the introduction and spread of Sukuk security within financial institutions, as Sukuk security has been started in the recent decades. Initially, it was designed to promote Islamic finance; however, these securities now being mainly issued to finance the government, to government-affiliated organizations and to enterprises that are designed on the basis of Islamic finance and are appropriate alternative to usury securities particularly to the loan securities (Alsaeed, 2012; Solé, 2008).

The basic vision behind the issuance of the Sukuk is to provide finance based on zero interest percentage in addition to increase Islamic activity. Thus, Halim, How & Verhoeven (2016); Godlewski, Turk-Ariss, & Weill (2013) state that the Sukuk does not only expand or promote Islamic activities; but also increase economic growth of the country. Economic growth of the country increase when customers of the Islamic institutions purchase Sukuk finance from the financial institution and utilize such amount in the business; or in enhancing the living standard of the people. In short, Sukuk finance help customer in starting their small business with zero or less interest amount. Thus, from the business, customers does not have to give interest amount to the financial institutions. It is important to examine that customer can meet all the various needs by utilizing Sukuk finance, and is not like the other papers to have specific functions, such as Murabaha bonds useful for financing the consumable items. In addition to this, Sukuk securities reduce the costs of publishing different papers and the customer meet the needs by issuing one type of securities, although this high flexibility leads to representation risk for the customer.

## **2.4 Sukuk Issuance within GCC Countries**

The general lack of awareness of Sukuk structures, particularly in the large and medium sized enterprises, in addition to the absence of a clear legal and regulatory framework, are the primary reasons why Sukuk took more time to develop in Saudi Arabia compared to Bahrain and other Gulf Cooperation Council (GCC) States. In fact, the Sukuk Law in the Kingdom was developed in tandem with the structuring of the first Sukuk in the Saudi market, the SR 3 billion 5-year public Sukuk offering by Saudi Basic Industries Corporation (SABIC) in 2006 (Jobst, Kunzel, Mills, & Sy, 2008; Said & Grassa, 2013). The paradigm of Sukuk security originated from the conventional securitization mechanism in which a Special Purpose Vehicle (SPV) is established to acquire assets and to issue financial rights on the assets. The rights of these financial assets represent a proportionate beneficial ownership to the Sukuk holders (Zulkhibri, 2015; Mohamed Masih & Bacha, 2015; Wilson, 2008).

Islamic project finance; structured finance; capital market products such as Sukuk; private equity; construction finance (Istisna); and equipment leasing (Ijarah) are appropriate to these sectors, particularly from an investor risk-reward profile perspective. Sukuk are a securitized financial instruments; and therefore, financial institutions makes them attractive for issuers because they can obtain long-term financing with favorable terms (Halim, How & Verhoeven, 2016; Godlewski, Turk-Ariss, & Weill, 2013). However, with the rapid growth of the Islamic finance industry in general, global banks, like their regional and national counterparts, are increasingly focusing on and investing in Sukuk as these are highly adaptable to GCC states due to their asset-backed structure (Alsaeed, 2012; Solé, 2008).

Furthermore, there is an urgent need to adopt and implement the legal framework of Sukuk within GCC states in order to facilitate Sukuk origination; trust laws; and laws relating to

the establishment of SPVs; which are often used in Sukuk structures. A solid legal framework and a tried and tested court procedure and process to ensure recourse in law in the case of a default, also gives legal certainty and comfort to both issuers and Sukuk certificate holders (Mohamed Masih & Bacha, 2015; Nienhaus, Nienhaus, Karatas & Karatas, 2016; Rusgianto & Ahmad, 2013; Ahmad, Daud, & Kefeli, 2012). The legal risks, lack of enforceability and the initial higher costs of Sukuk structuring are obfuscating efforts to foster a faster evolution of Sukuk and an Islamic capital market in Saudi Arabia. However, the Capital Markets law reform program in the Saudi Arabia has developed a wider appreciation and development of a Sukuk culture amongst Saudi lawmakers, financial and capital market regulators (Aloui, Hammoudeh, & ben Hamida, 2015; Said & Grassa 2013; Wilson 2008; Wedderburn-Day 2010).

Considering Sukuk in the Dubai, Aloui, C., Hammoudeh, S., & Hamida, H. B. (2015) state that the Dubai International Financial Exchange (DIFX) which is operated by the DIFC has been recognized for becoming a major regional exchange for Sukuk listing with the highest value in 2006 worth more than \$16 billion. The DIFC introduced its DIFC Sukuk Guide in 2009 as a comprehensive introduction to different Sukuk structures. The Guide also provides legal and regulatory information on issuing Sukuk from the DIFC, and listing of Sukuk on the NASDAQ Dubai Exchange (Zulhibri, 2015; Mohamed Masih & Bacha, 2015; Wilson, 2008). The straightforward and efficient listing process of Sukuk at the DIFC has enabled it to gain a substantial advantage compared to other regional Sukuk markets (Jobst, Kunzel, Mills, & Sy, 2008; Said & Grassa, 2013). Also, the modern and developed infrastructure of the DIFC also allows it to assist financial services resourcefully. Since its launch in 2004, the DIFC has invited top financial institutions to operate within the Centre with the benefits of zero tax rate on profits, 100 percent foreign ownership, no restrictions on foreign exchange or repatriation of capital,

operational support and business continuity facilities (Mohamed et. Al., 2015; Said & Grassa, 2013; Wilson, 2008; Wedderburn-Day, 2010).

With the rapid growth of Islamic financial products, the DIFC was determined to focus on and promote the importance of the following significant areas of interest: i) economic expansion in the Arab world with emphasis on Shariah compliant financing, ii) the emergence of international Sukuk markets (Mohamed Masih & Bacha, 2015; Nienhaus, Nienhaus, Karatas & Karatas, 2016; Rusgianto & Ahmad, 2013; Ahmad, Daud, & Kefeli, 2012), iii) rising demand for Islamic consumer financial products, iv) the rising demand for pension provision, v) the development of Shariah legal structures to support the progress of a contemporary Islamic financial system. 98 The vision of Dubai becoming the Islamic financial hub of the world is one of the main drivers behind the creation of the DIFC. Hence, the Dubai International Financial Exchange (DIFX) was established by the DIFC to operate a primary listing and secondary trading of Islamic financial instruments (Said & Grassa 2013; Wilson 2008; Wedderburn-Day 2010). The DIFX has since evolved into the Dubai Nasdaq following the merger between Dubai Bourse and Nasdaq. The DIFC is considered one of the top locations for Sukuk issuance and trading around the world with a transparent and friendly business environment (Godlewski, Turk-Ariss, & Weill, 2013; Mohamed Masih & Bacha, 2015; Nienhaus, Nienhaus, Karatas & Karatas, 2016; Rusgianto & Ahmad, 2013; Ahmad, Daud, & Kefeli, 2012).

## **2.5 Oil Prices within GCC Countries**

On the basis of the study examined by Fratzscher, Schneider & Van Robays, (2014); Hesse & Poghosyan (2009) GCC is the alliance between six Middle Eastern countries i.e. Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates (UAE). There are multiple aspects on which strategic alliance occur between six countries; among which, one is

the price of oil, which for a region has massive hydrocarbon reserves and have an impact on the finances of many countries. For several decades, this region has been trying to diversify away from its dependency on oil. Some countries have been somewhat successful at doing that at a Gross Domestic Product (GDP) level; in the UAE, for example, oil represents just 30% of GDP. But for the most part, it remains a struggle, and many GCC economies derive the vast majority of their revenues some over 90% from oil (Jobst, Kunzel, Mills, & Sy, 2008; Said & Grassa, 2013). As the price of oil has fallen over the past two years i.e. 2014 and 2015, Zulkhibri (2015); Yan (2012) state that the GCC states require an impressive structural reform, as the region strives to put itself on more sustainable footing.

Governments in the region have reduced salaries, cut subsidies and introduced taxation a bid to tackle deficits and spending in UAE. However, Wedderburn-Day (2010); Usmani (2007) state that there are reform happen to the GCC economies in the past 18 months. In his view, these structural reforms have fundamentally altered the fiscal landscape within GCC states that occur due to reduction of oil prices. Equally important is the change in policy with respect to oil price. Thus, at the end of 2015, there was a significant shift from Organization of the Petroleum Exporting Countries (OPEC) members, led by Saudi Arabia, as they moved from a position of defending market share even at the expense of lower oil prices to a new approach designed to pump up the price of oil by cutting supply (Wilson, 2013; Usmani, 2007; Srairi, 2010; Yan, 2012).

However, Srairi (2010); Zulkhibri (2015); Yan (2012) argue that there could be some volatility in the oil prices in future; and thus, countries that stick to OPEC agreed quota might not witnessed huge difficulties. No matter how that turns out, Srairi (2010); Zulkhibri (2015); Yan (2012) think it is unlikely that GCC countries will be in an environment where oil prices can fall

precipitously. In the view of Solé (2008); Van Wijnbergen, & Zaheer (2013), it is important to remember that the GCC region's financial markets operate in the context of global conditions. Even though these markets typically have significantly lower durations than other fixed income sectors, bringing the ability to mitigate rising interest rates and the impact of market volatility any fixed income market has to be cognizant of the trajectory of interest rates across the world (Said & Grassa, 2013; Aloui, Hammoudeh & Hamida, 2015).

**Figure 5: Oil Prices**



*Source: Bloomberg L.P. (2016)*

In 2016, government and regulatory bodies saw a record year for bond issuance in GCC countries, particularly in Saudi Arabia's case, which came to market with one of the largest ever emerging-market sovereign bond deals at US\$17.5 billion. This landmark transaction might alter the pace of Sukuk issuance within the GCC region, not only substantially increasing the amount of debt issued but also changing the composition to be more consistent with the size and scale of the Saudi Arabian economy (Wedderburn-Day, 2010; Usmani, 2007). On the other hand, Solé (2008); Van Wijnbergen, & Zaheer (2013) research that Saudi Arabia is trying to reducing the risk interlink with the volatility of oil prices by issuing Sukuk in the financial market.

## **2.6 Impact of Oil Prices on the Sukuk**

With the price of oil having tumbled from US\$103 per barrel to \$50 in 2014, GCC countries found the effect of lower oil prices on regional liquidity. Several UAE banks have reported meaningful outflows in government deposits during the first half of this year, and concerns about a potential liquidity squeeze are figuring more prominently in many borrowers' thinking (Rusgianto & Ahmad, 2013; Ahmad, Daud, & Kefeli, 2012). Banks in particular are focused on rebuilding liquidity and securing quick access to funding, as illustrated by recent large syndicated loans by First Gulf Bank, Union National Bank and Qatar National Bank. UNB made its first foray into the loan market since 2006, while FGB and QNB made their first since 2012. All transactions were supported predominantly by international lenders. It is noticeable that lower oil prices and their corresponding liquidity impact is either on GCC bond, Sukuk and loan pricing (Mills, & Sy, 2008; Said & Grassa, 2013).

Yan (2012) that regional bank issuers will realize the new pricing reality most quickly and react accordingly. Given pressure on government liquidity, direct government funding of many GCCs may be curtailed and GCCs encouraged to borrow in the public markets. Regional sovereigns are likely to take a more proactive stance on debt issuance, Ras Al Khaimah is the only GCC sovereign to have issued debt internationally, but more can be expected to follow over the coming months (Wilson, 2008). Many regional sovereigns are presently weighing the perceived negative perceptions of issuing in this era of low oil prices versus the advantages of locking in long-dated international funding at levels that remain historically very attractive. In addition to tapping international markets, GCC sovereigns are investigating local currency alternatives. For instance, Saudi Arabia recently conducted its first government bond issue since 2007.

Given their lesser overall funding needs, any changes in corporate borrowing behavior are likely to be pronounced by government and regulatory bodies of GCC countries. Notwithstanding lower oil prices, there is ample liquidity to fuel regional economic growth (Aloui, Hammoudeh, & ben Hamida, 2015). However, it is likely that the composition of regional funding will change. Over the past three years, syndicated loans have dominated GCC fundraising activity, representing about 65 percent of deal volumes versus 35 per cent for bonds and Sukuk. Given the rising pressure on regional liquidity that we are already witnessing, the proportion of borrowing conducted via capital markets can be expected to increase as more names look to prudently diversify their sources of funding (Wedderburn-Day, 2010; Usmani, 2007).

## **2.7 Oil Prices, Sukuk Issuance and Economic Factors**

In Sukuk literature, the study of the association and relationship between corporate finance and Islamic finance has been a striking topic always. The past researches on this issue lead to point that Islamic debt issuance has received positive response from the investors. Zulkhibri (2015); Zulkhibri (2015); Yan (2012) stated that Islamic debt securities find larger investor base as compared to that of conventional debt that offers cost advantage by helping to reduce the cost of capital. According to him, government plays an important role in order to develop the Sukuk market, and to determine alternative financial tool for development of the economy. Poghosyan & Hesse (2009); Solé (2008); Van Wijnbergen, & Zaheer (2013) studied the effect of oil prices on economy and stated that the two variables find mutual dependence by means of both direct and indirect channels. Oil price shocks have an effect on bank profitability directly through increased oil exports, excess liquidity in the banking system, or business activity. Since, these countries depend on oil exports, policy interest is highly focused towards

the link between oil prices and bank profitability and sustainability, not only during the time of crisis, but also during the oil cycles' boom. It was found that oil prices show a significantly positive effect on profitability (Poghosyan & Hesse, 2009; Wedderburn-Day, 2010; Usmani, 2007).

Wedderburn-Day (2010); Zulkhibri (2015); Yan (2012) conducted a detailed study on sovereign Sukuk issuance in various Islamic states, and also discussed the impact global financial crisis of 2008 on sovereign Sukuk issuance. They argued that Sukuk market has seen adverse effects from two different factors, i.e. change in the position of major Islamic scholars, and the financial crisis of 2008. One of the most significant effects of the financial crisis of 2008 was the delayed issuance of its debut Sukuk by the government of UK (Rusgianto & Ahmad, 2013; Solé, 2008; Van Wijnbergen, & Zaheer, 2013). The issuance of Islamic Sukuk is generated by the concept of Sukuk holders to have a share in the large enterprises' returns and level of profits. When issued of this basis, Sukuk will play a significant role in the progress of Islamic banking, and thus, will become a significant contributor for the accomplishment of noble goals and objectives as per Shariah (Usmani, 2007; Zulkhibri, 2015; Yan, 2012).

Elkarim (2012); Aloui, Hammoudeh & Hamida (2015); Wilson (2013); Zulkhibri (2015); Yan (2012) investigated the impact of macroeconomic variables on the issuance of Sukuk and conventional bonds. Applying regression analysis on variables like GDP, inflation and interest rates, it was found that they have a negative impact on Sukuk issuance. On the other hand, conventional bonds only receive a significantly negative impact of GDP. Elteir, Ragab & Eid (2013); Zulkhibri (2015); Yan (2012) compared the risk involved with Sukuk with respect to other financial tools. Furthermore, Mohamed, Masih & Bacha (2015); Wedderburn-Day, (2010); Usmani, (2007) attempted to assess a company's benchmark debt improving behavior, and

secondly, to determine the organization specific factors of target debt ratio by means of a dataset of Sukuk or conventional bond issuance. The development of Sukuk (Islamic debt securities), within the Islamic finance, is usually regarded as a benchmark to denote success in this area. Primarily, strong support is offered by results for trade-off view based on an organization's boosting performance among conventional bond and Sukuk issuers, but with dissimilar purposes of issuance.

In addition, partnership-based Sukuk issuers and those of convertible bonds thoroughly go along the striking order outlook, in which the previous one is chosen on the basis of firms confronting a greater information irregularity expense (Rusgianto & Ahmad, 2013; Wedderburn-Day, 2010; Usmani, 2007). Lastly, while both the issuers of straight bonds and exchange-based Sukuk line up in the direction of a certain target, the former is preferred by the companies only with higher sales growth. Strengthened by commerce perceptions, the results indicate that the Sukuk propositions get exclusive advantages for issuers of corporate bonds contrasting to those of the conventional bonds (Mohamed, Masih & Bacha 2015; Halim, How & Verhoeven, 2016; Godlewski, Turk-Ariss, & Weill, 2013).

Rusgianto & Ahmad (2013); Hesse & Poghosyan (2009) aimed to examine the unpredictable behavior of Sukuk market considering the structural breaks. The behavior to show volatility or instability of Sukuk market is vital for participants of market, as it has an impact on strategy for management of risk. The key finding of this research signposts that organizational disruptions considerably modify the Sukuk's volatility behavior. It directs that the instability through pre-crisis and concurrent period is more subtle to market procedures compared to the post-crisis period. The findings suggest that with the purpose of realizing more balanced and efficient Sukuk market, the obligatory strategies are offering better transparency, disclosure of

information and better incentives to appeal stockholders to upsurge their transaction activities in the secondary market (Elteir et. al, 2013; Alam, 2009; Alaoui, Dewandaru, Rosly, & Masih, 2015; Aloui, Hammoudeh, & ben Hamida, 2015). Wilson (2008) provided an analysis from a financial perspective of various Sukuk structures.

## **2.8 Strategies used to reduce the Problem of Oil Price and Sukuk Issuance**

On the basis of the study conducted by Jobst, Kunzel, Mills, & Sy (2008); Mansoor Khan & Ishaq Bhatti (2008); Ibrahim (2015), it is financially possible to design and issue advocacy papers as a modern Islamic finance instrument in GGC's capital market (for oil, gas and petrochemicals). In terms of financing, oil industries have diverse needs that the most important ones are:

- Financing Projects due to the nature i.e. project-based industries. Hence these industries for the financing of medium and long-term projects such as the construction of petrochemical, refining plants, etc., use some kinds of Sukuk;
- Financing for the purchase of capital and consumable assets many industries such as oil, gas and petrochemicals need financial resources to purchase their required equipment (Halim, How & Verhoeven, 2016; Godlewski, Turk-Ariss, & Weill, 2013). In many cases, limited internal resources make companies finance from the sources outside of the company such as banking system; however, resource constraints in the banking system, in some cases, funding to purchase equipment for the profitable and strategic projects in petrochemical sector such as the building refineries with small, medium and large sizes, faces problems. To tackle this problem, high capacities of capital markets can be used to finance;

- Providing the working capital for these industries; thus, short-term or working capital financing have the same meaning. Although there is no single definition of short-term financing, but the main difference between short-term and long-term financing, is the cash flow time. Short-term financial decisions typically involve cash input and output flows that occur in one year or less (Rusgianto & Ahmad, 2013; Jobst Kunzel Mills & Sy, 2008; Mohamed Masih & Bacha, 2015).

With this description (Karatas & Karatas, 2016; Rusgianto & Ahmad, 2013; Ahmad, Daud, & Kefeli, 2012), the various economic sectors, including the petrochemical sector, to finance their short-term needs, can use publication of Islamic securities such as Salaf or Abdolkarim. Representing securities and how to use them to provide working capital will be explained in the following research sections. On the other hand, Hesse & Poghosyan (2009) state that legally it is possible to design and issue the advocacy securities as a modern tool of Islamic finance in Iran capital market (for oil, gas and petrochemicals). A careful study of Islam teachings shows that not only Islam has not confined Muslims within certain contracts and considers all rational contracts in compliance with the standards and terms appropriate; but also beyond this, by providing outlines calls the scholars to think and design innovative financing tools and devise contracts tailored to their age and time.

Economic system formed from a number of related institutions will have coordinate of the components, if the components work in order to achieve a single goal. General and current principles can define and determine this single purpose. Bank also, as one of the main institutions of the economic system should be the benefit of a single set of principles for coordination (Nienhaus, Nienhaus, Karatas & Karatas, 2016; Rusgianto & Ahmad, 2013; Ahmad, Daud, & Kefeli, 2012). Using the general and main framework provided in Islamic

jurisprudence, it is also possible to comment on the types of institutions used in this system such as innovative financing tools. Similarly, Van Wijnbergen, & Zaheer (2013) illustrate that legally it is possible to design and issue the advocacy securities as a modern tool of Islamic finance in GCC's capital market (for oil industry). Practical steps to identify potential of Islamic financial instruments for the implementation of infrastructure projects (Wedderburn-Day, 2010; Usmani, 2007). Thorough identification and analysis of infrastructure projects with all the details and invite the Islamic banks and other Islamic financial institutions to finance and invest in those projects. Identify the appropriate financial instrument or instruments of the project or projects. Develop a secondary market in this field. In Islamic finance, there is a strong emphasis on the communication and link between the real and financial sectors of economy, and priority of the former (the economy) over the latter (financial) (Nienhaus, Nienhaus, Karatas & Karatas, 2016; Rusgianto & Ahmad, 2013; Ahmad, Daud, & Kefeli, 2012).

## **2.9 Summary of the Chapter**

To conclude, it is examined that management of Sukuk and requirement for the successful issuance is driven by special purpose vehicles. Using GDP-based pricing standards may result in higher stability of payments for sovereign debt in Saudi Arabia, but not for Malaysia. Over here, it is important to examine that there is no research relate to the stated topic i.e. impact of oil price on Sukuk issuance: the case of the GCC market. Considering this aspect in research, this study determine correlation between two important variables i.e. oil price and Sukuk issuance after considering the case of GCC market. In addition to this, this study identify the impact of oil price on Sukuk issuance.

## **CHAPTER THREE: METHODOLOGY**

### **3.1 Introduction**

The population of the study consists of all Sukuk issued by sovereigns and corporates during the period of 2005 to 2015 in GCC. The number of sovereign Sukuk is 26 and 23 for corporate Sukuk. The total number of observations for the total Sukuk is 49. methodology chapter has been tried to investigate whether change in oil price affect the Sukuk issuance. This research has used the quantitative methodology to gather the information that will provide solutions for research objectives. The research use multiple regression and correlation to interpret and evaluate the gathered data and information. This chapter covers the research method, data collections, multiple regression model, and variable definition and measurement,

### **3.2 Research Method**

Research method is the mean of achieving the goals of using knowledge to answer questions, solve problems, and create knowledge. Among different types of research methods, the purpose of applying the quantitative method is to understand the research problem. The focus of this paper is on quantitative research method. The descriptive statistics among variables has been used to summarize the data set and measures. In addition to this, correlations has been used to study the association amongst the variables. Furthermore, Multiple Regression analysis has been applied to examine how multiple independent variables are related to a dependent variable.

### **3.3 Data Collection**

Dependent variable of this study are total Sukuk issuance, sovereign Sukuk issuance, and corporate Sukuk issuance; while, independent variable of this study are oil price, GDP, interest rate, inflation, surplus/deficit, and gross capita formation. Multiple regression analysis has been

applied using all three categories of Sukuk issuance as dependent variable one by one, and the impact of the independent variables, i.e. oil price, interest rate and inflation, surplus/deficit, and gross capita formation will be analyzed.

.The data is determined by information availability. Sukuk data has been accrued from The International Islamic Finanacial Market, Macroeconomic data obtained from Bloomberg database, and firm's specific variables gathered from annual report for the past 10 years from 2005 to 2015 to examine the topic.

### 3.4 Multiple Regression Model

Multiple regression models is describe the response of dependent variable  $Y$  from two or more independent  $x$  variables by fitting a linear equation to observed data. Every value of the independent variable  $x$  is associated with a value of the dependent variable  $Y$ . The population regression line for  $p$  explanatory variables  $x_1, x_2, \dots, x_p$  is defined to be

$$\mu Y = B_0 + B_1 x_1 + B_2 x_2 + \dots + B_p x_p$$

This line describes how the mean response  $Y$  changes with the independent variables. The observed values for  $Y$  vary about their means  $\mu_y$  and are assumed to have the same standard deviation  $\sigma$ . The fitted values  $b_0, b_1, \dots, b_p$  estimate the parameters  $B_0, B_1, \dots, B_p$  of the population regression line.

The multiple regression model includes a term for this variation because the observed values for  $y$  vary about their means  $\mu_y$ . The he model is expressed as  $DATA = FIT + RESIDUAL$ , where the "FIT" term represents the expression  $B_0 + B_1 x_1 + B_2 x_2 + \dots B_p x_p$  and the "RESIDUAL" term represents the deviations of the observed values  $y$  from their means  $\mu_y$ , which are normally distributed with mean 0 and variance  $\sigma^2$ . The notation for the model deviations is  $\mathcal{E}$ .

The model as follow:

$$Y_i = B_0 + B_1x_{i1} + B_2x_{i2} + \dots + B_{pxip} + \epsilon_i \quad \text{for } i = 1, 2, \dots, n.$$

Where  $Y_i$  the dependent variable: Sukuk issuance,  $B_{pxip}$  are the independent variables.

The study regressed three equations for the amount of three types of Sukuk for each year for the period 2005 to 2015 as below to examine how multiple independent variables are related to a dependent variable

1- The first equation to be tested is for amount of total Sukuk as dependent variable and macroeconomic as independent variables:

$$\text{Total Sukuk} = B_0 + \text{Oil price} + \text{GDP} + \text{Interest rate} + \text{Inflation} + \text{Surplus/deficit} + \text{Gross capita formation}$$

2- The second equation to be tested is for amount of sovereign Sukuk as dependent variable and macroeconomic as independent variables:

$$\text{Sovereign Sukuk} = B_0 + \text{Oil price} + \text{GDP} + \text{Interest rate} + \text{Inflation} + \text{Surplus/deficit} + \text{Gross capita formation}$$

3- The third equation to be tested is for amount of corporate Sukuk as dependent variable, macroeconomic and firm specific as independent variables::

$$\text{Corporate Sukuk} = B_0 + \text{Oil price} + \text{GDP} + \text{Interest rate} + \text{Inflation} + \text{Surplus/deficit} + \text{Gross capita formation} + \text{Return on Asset} + \text{firm size} + \text{Capital Expenditure}$$

### **3.5 Variable Definition and Measurement**

Every quantitative research study has two types of variables: dependent and independent variables. The dependent variable is the one that must be addressed in the research, whereas the independent explains the changes that occur in the dependent variable. The two variables identified for this research are Sukuk issuance as dependent variable, and macroeconomic and firm specific as independent variables. From the results of above mentioned tests and statistical inferences, it has been analyzed if total, sovereign, and corporate Sukuk issuance is affected significantly by oil price or not in the GCC countries.

Furthermore, it has been observed if any other factors influence the Sukuk issuance in all three categories significantly or not. Following are the definitions of the dependent and independent variables that has been covered in this study:

- Sukuk - Sukuk are financial instruments structured to comply with the prescriptions of sharia law. Unlike conventional bonds, Sukuk do not pay interest as this would contravene the prohibition of riba. Instead, investors in Sukuk receive income either as a pre-determined share of profits or from other payment streams such as rent.
- Sovereign Sukuk - is a Sukuk where the obligor is a sovereign entity, typically a state or country such as Saudi Arabia.
- Corporate Sukuk - is a Sukuk where the obligor is a financial institution or company
- Oil Prices –refers to the spot price that has been used to purchase or sell oil barrel.
- GDP –is most important indicator of the economy. GDP represents the total dollar value of all goods and services produced over a specific time period; however, it has been estimated based on the size of the economy.
- Interest Rate – Interest rate has been defined as the amount charged by the lender to the borrower of the capital with principle amount. Thus, borrower have to paid interest amount with principle amount to the lender in order to fulfill its obligations.
- Inflation – Inflation has been defined as the increase or decrease in the prices of the products and services that has been used to purchase or sell the product in the market. Inflation has been measured in term of dollar (Aloui, Hammoudeh, & ben Hamida, 2015; Said & Grassa 2013; Wilson 2008; Wedderburn-Day 2010); thus inflation increase when if the price of the products or services increase while inflation decrease, if the price of the product or service decrease.

- Surplus/deficit – Surplus can be measured if the expenditure of the government exceeds the earnings and income; on the other hand, deficit occur when the expenditure of the government go beyond the earnings and income (Elkarim, 2012; Alsaeed, 2012; Solé, 2008).
- Firm Size - total assets of the firm utilized as indicators of firm size
- Return on Asset (ROA) – is an indicator of how profitable a company is relative to its total assets. Calculated by dividing a company's annual earnings by its total assets
- Capetal Expenditure (CAPEX) - money spent by a firm on acquiring or maintaining fixed assets, such as land, buildings, and equipment.

### **3.6 Summary of the Chapter**

The focus of this project is on quantitative method that have been used to find out the impact of oil prices on the Sukuk issuance for GCC countries. The descriptive statistics ,correlation, and multiple regression has been run through the data in order to obtain the results. The data has been analyzed through Stata 14.2.

## CHAPTER FOUR: DATA ANALYSIS & DISCUSSION

### 4.1 Introduction

The focus of this chapter of the study is on data analysis and discussion chapter that has been focused on the result of the stated topic. For the research purpose, this study find out the association in overall Sukuk issuance and oil price; examine the effect of oil prices on sovereign Sukuk issuance; and observe the effect of oil prices on corporate Sukuk issuance. This study covers quantitative method, in which univariate analysis and multiple analysis has been used to analyze the topic i.e. to find the impact of oil price on Sukuk issuance by considering the case of GCC market (Elteir, Ragab & Eid, 2013; Roch, 2005; Fratzscher, Schneider & Van Robays, 2014); Hesse & Poghosyan, 2009).

### 4.2 Descriptive Statistics

The descriptive statistics of the macroeconomic variables like total Sukuk issuance, oil price, interest rate and inflation, surplus/deficit, gross capita formation show the following results:

**Table 1: Descriptive Statistics of The Macroeconomic Variables For Total Sukuk**

Variable	Obs	Mean	Std. Dev	Min	Max
Amount of Total Sukuk	49	.0220433	.0243597	.0004661	.0894165
GDP	49	11.88122	1.136944	9.678405	13.35292
Oil Price	49	4.36518	.2909249	3.901771	4.695468
Inrerest Rate	49	2.557347	1.393912	.98	5.4
Inflation	49	3.873755	3.603941	-2.41	15.12
Surplus/Deficit	49	.1516163	.1690699	-.1096	.653
Gross Capita Formation	49	25.77551	7.643803	12	46

The total GDP is around a mean of 0.022 with a small standard deviation of 0.024. the log of oil prices show a mean of 4.365 with a small standard deviation of 0.29 for this variable as well. Log values of GDP are focused around 11.881 with a standard deviation of 1.137. Interest

rates show a mean of 2.55% in GCC countries with a standard deviation of 1.393 across the 49 observations. Inflation in all of considered GCC countries during the period of 2005 to 2015 appears with a mean of 3.873 and a standard deviation of 3.603. Surplus/deficit to GDP in the GCC countries is averaged at 0.1516 with standard deviation of 0.169. Also, the gross capita formation has a mean of 25.77 with standard deviation of 7.64 for 49 observation from GCC countries during 2005 to 2015.

#### 4.3 Regression Analysis

A multiple regression features is the wealth of techniques for the synthesis of the data. As regression analysis is applied with amount of total Sukuk issuance for GCC for the perion 2005 to 2015 being the dependent variable and macroeconomics being the independent variables, following results have been obtained. The obtained coefficients are mentioned with the standard errors in paranthesis and statistical significance has been demonstrated by asteric (\*) symbol as below. Regression analysis studies the behavior of a dependent variable as a function of one or more explanatory variables to estimate or predict the mean value for the independent variable.

**Table 2: Estimation Results Based on Total Sukuk Issued**

VARIABLES	Total Sukuk
Oil Price	0.0009 (0.0085)
GDP	<b>-0.0160**</b> (0.0044)
Intrest Rate	-0.0035 (0.0018)
Inflation	-0.0001 (0.0011)
Surplus/Deficit	-0.0150 (0.0391)
Gross Capita Formation	-0.0006 (0.0006)
Constant	<b>0.2343**</b> (0.0658)

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Observations	49
R-squared	0.546

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Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The above results have been obtained for regression analysis. The regression equation stated as below;

$$\begin{aligned}
 \text{Total Sukuk} = & 0.2343 + 0.0009 (\text{price\_log}) - 0.0160 (\text{GDP\_log}) - 0.0035 (\text{Interest rate}) - \\
 & 0.0001 (\text{Inflation}) - 0.0150 (\text{Surplus/deficit to GDP}) - 0.0006 (\text{Gross capita} \\
 & \text{formation})
 \end{aligned}$$

It appears that with all the independent variables the total Sukuk issuance will increase by 0.2343 units, and this value is statistically significant at 5% level of significance. However, with every unit increase in log of oil prices, the total Sukuk issuance is expected to increase by 0.0009 units, which is quite a negligible effect, and is not statistically significant at any level of significance. This means that with every unit increase in oil price, as the log of oil prices will decrease, the Sukuk issuance will also decrease, which implies that oil price has a negative relationship with Sukuk issuance. Log of GDP shares a negative relationship with the amount of issuance of Sukuk in the GCC countries. Its coefficient implies that with every unit increase in log of GDP, the Sukuk issuance will drop by 0.0160 units. This variable appears to have a statistically significant relationship with Sukuk issuance at 5% level of significance. It can be acknowledged that with every unit increase in GDP, the Sukuk issuance is expected to increase, which demonstrates a positive relationship between total Sukuk issuance and GDP. Similarly, other variables like interest rates, inflation, surplus/deficit, and gross capita formation have negative relationships with total Sukuk issuance in GCC countries. This means that for every unit increase in interest rates the Sukuk issuance will drop by 0.0035 units. Inflation creates a

negligible impact on Sukuk issuance, i.e. with every unit increase in inflation, the Sukuk issuance will decrease by 0.0001 units.

For surplus/deficit, every unit surplus can yield a decrease of 0.0150 units in Sukuk issuance, whereas every unit deficit will cause increase in Sukuk issuance by same amount. Finally, gross capita formation does not create any significant impact on Sukuk issuance, but with every unit increase, it will decrease the amount of Sukuk issuance by 0.0006. As the adjusted R square not shown in result table in STAT 14.1, the R squared statistic shows that with all of the independent variables, the amount of Sukuk issuance is only 54.6% explainable.

Hence, the the first research question for this study, the hypothesis that can be stated as;

*H<sub>0</sub>: Amount of Total Sukuk issuance is not affected by the change in the oil price*

*H<sub>1</sub>: Amount Total Sukuk issuance is affected by the change in the oil price*

At 1%, 5%, or 10% level of significance, there is not enough evidence to reject the null hypothesis. This means that oil prices do not affect the total Sukuk issuance in GCC countries.

For the second research question, sovereign Sukuk issuance has been considered and the impact of the same independent variables on its issuance. First, descriptive statistics are obtained for sovereign GDP, oil price, GDP, interest rates, inflation, surplus/deficit to GDP, and gross capita formation. Follwing results are obtained.

**Table 3: Descriptive Statistics of The Macroeconomic Variables For Sovereign Sukuk**

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev</b>	<b>Min</b>	<b>Max</b>
Amount od Sovereign Sukuk	26	.0145446	.0237565	0	.0894165
Oil Price	26	4.36518	.2909249	3.901771	4.695468
GDP	26	11.88122	1.136944	9.678405	13.53292
Interest Rate	26	2.557347	1.393912	.98	5.4
Inflation	26	3.873755	3.603941	-2.41	15.12
Surplus/Deficit	26	.1516163	.1690699	-.1096	.653
Gross Capita Formation	26	25.77551	7.643803	12	46

Sovereign GDP is averaged at 0.0145 with a standard deviation of 0.0237 for 49 observations from GCC countries recorded over the period of 2005 to 2015. Other variables, i.e. log of oil price, log of GDP, interest rates, inflation, surplus/deficit to GDP, and gross capita formation have the same descriptive statistics as shown and interpreted above.

However, the regression results will definitely alter as the dependent variable has been shifted from amount of total Sukuk issuance to amount of sovereign Sukuk issuance. Following are the regression results obtained from STATA multiple regression analysis.

**Table 4: Estimation Results Based on Sovereign Sukuk Issued**

VARIABLES	Sovereign Sukuk
Oil Price	0.0043 (0.0064)
GDP	<b>-0.0168***</b> (0.0036)
Intrest Rate	<b>-0.0049**</b> (0.0017)
Inflation	-0.0005 (0.0006)
Surplus/Deficit	-0.0171 (0.0254)
Gross Capita Formation	-0.0005 (0.0004)
Constant	<b>0.2249**</b> (0.0583)
Observations	26
R-squared	0.684

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The above results from multiple regression analysis lead the formation of regression equation as:

$$\begin{aligned} \text{Amount of Sovereign Sukuk} = & 0.2249 + 0.0043 (\text{price\_log}) - 0.0168 (\text{GDP\_log}) - 0.0049 \\ & (\text{Interest rate}) - 0.0005 (\text{Inflation}) - 0.0171 (\text{Surplus/deficit to GDP}) - \\ & 0.0005 (\text{Gross capita formation}) \end{aligned}$$

It appears that with all the independent variables the sovereign Sukuk issuance will increase by 0.2249 units, and this value is statistically significant at 5% level of significance. However, with every unit increase in log of oil prices, the sovereign Sukuk issuance is expected to increase by 0.0043 units, which is quite a small effect, and is not statistically significant at any level of significance. This means that with every unit increase in oil price, as the log of oil prices will decrease, the sovereign Sukuk issuance will also decrease, which implies that oil price has a negative relationship with Sukuk issuance. Log of GDP shares a negative relationship with the issuance of sovereign Sukuk in the GCC countries. Its coefficient implies that with every unit increase in log of GDP, the sovereign Sukuk issuance will drop by 0.0168 units.

This variable appears to have a statistically significant relationship with sovereign Sukuk issuance at 1% level of significance. It can be acknowledged that with every unit increase in GDP, the sovereign Sukuk issuance is expected to increase, which demonstrates a positive relationship between sovereign Sukuk issuance and GDP. Similarly, other variables like interest rates, inflation, surplus/deficit, and gross capita formation have negative relationships with sovereign sovereign Sukuk issuance in GCC countries. This means that for every unit increase in interest rates the sovereign Sukuk issuance will drop by 0.0049 units. Inflation creates a negligible impact on Sukuk issuance, i.e. with every unit increase in inflation, the sovereign Sukuk issuance will decrease by 0.0005 units. For surplus/deficit, every unit surplus can yield a decrease of 0.0171 units in sovereign Sukuk issuance, whereas, every unit deficit will cause increase in sovereign Sukuk issuance by same amount.

Finally, gross capita formation does not create any significant impact on sovereign Sukuk issuance, but with every unit increase, it will decrease the amount of sovereign Sukuk issuance by 0.0005. The R squared statistic shows that with all of the independent variables, the amount of Sukuk issuance is only 68.4% explainable; better than that for total Sukuk issuance model. Hence, the the first research question for this study, the hypothesis that can be stated as;

*H<sub>0</sub>: Sovereign Sukuk issuance is not affected by the change in the oil price*

*H<sub>1</sub>: Sovereign Sukuk issuance is affected by the change in the oil price*

At 1%, 5%, or 10% level of significance, there is not enough evidence to reject the null hypothesis. This means that oil prices do not have a significant impact on the sovereign Sukuk issuance in GCC countries.

For the third research question and to observe the impact on amount of corporate Sukuk issuance, besides macroeconomic variables, the research intend to use firm-specific variables such as capital expenditure, return on asset, firm size + Oil price. The same hypotheses will be tested.

**Table 5: Descriptive Statistics of The Macroeconomic and Microeconomic Variables For Corporate Sukuk**

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev</b>	<b>Min</b>	<b>Max</b>
Amount of Corporate Sukuk	23	.0101266	.0194379	0.000086	.1134828
Oil Price	23	4.36518	.2909249	3.901771	4.695468
GDP	23	11.88122	1.136944	9.678405	13.53292
Interest Rate	23	2.557347	1.393912	.98	5.4
Inflation	23	3.873755	3.603941	-2.41	15.12
Surplus/Deficit	23	.1516163	.01690699	-1.1096	.653
Capital Expenditure	23	74.17581	495.4318	-11.29508	4357.493
Return on Asset	23	4.7891	5.06639	-7.79	21.57
Firm Size	23	50.9695	188.1993	-8.33	1865

The mean capital expenditure in GCC countries for the period of 2005 to 2015 is 74.175 with a high standard deviation of 495.43. Return on asset is averaged at 4.789 with standard

deviation of 5.066, and mean firm size from GCC countries is 50.969 with a high standard deviation of 188.199.

Finally, the regression analysis encompassing capital expenditure, return on asset, and firm size as independent variables, while omitting gross capita formation gives following results:

**Table 6: Estimation Results Based on Corporate Sukuk issued**

<b>VARIABLES</b>	<b>Corporate Sukuk Issued</b>
Oil Price	0.0010 (0.0134)
GDP	<b>-0.0078*</b> (0.0038)
Interest Rate	0.0010 (0.0029)
Inflation	-0.0008 (0.0008)
Surplus/Deficit	0.0267 (0.0303)
Capex	-0.0000 (0.0000)
ROA	0.0000 (0.0010)
Firm Size	<b>0.0006**</b> (0.0003)
Constant	0.0863 (0.0527)
Observations	23
R-squared	0.578

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The regression equation can be structured as:

$$\begin{aligned} \text{Amount of Corporate Sukuk Issuance} = & 0.0863 + 0.0010 (\text{price\_log}) - 0.00078 (\text{GDP\_log}) + \\ & 0.0010 (\text{Interest rate}) - 0.0008 (\text{Inflation}) + 0.0267 (\text{Surplus/deficit} \\ & \text{to GDP}) - 0.000 (\text{Capex}) + 0.000 (\text{ROA}) + 0.0006 (\text{firm size}) \end{aligned}$$

The firm size only appears as a statistically significant factor for corporate Sukuk issuance at 5% level of significance, where it creates a negligible amount of impact on corporate Sukuk issuance. Also, GDP is negatively related with corporate Sukuk issuance and the relationship appears to be statistically significant at 10% level of significance.

At 1%, 5%, or 10% level of significance, there is not enough evidence to reject the null hypothesis. This means that oil prices do not have a significant impact on the amount of corporate Sukuk issuance in GCC countries.

#### **4.4 Correlation**

Correlation is one of the oldest data synthesis technique. The correlations are calculated between macroeconomic variables, and following results are observed. Correlation Coefficient is a coefficient which tells us about the relationship between variables in terms of 'quantitative measure' (Halim, How & Verhoeven, 2016; Godlewski, Turk-Ariss, & Weill, 2013).

The main result of a correlation is called the **correlation coefficient** (or "r"). It ranges from -1.0 to +1.0. The closer r is to +1 or -1, the more closely the two variables are related. a positive correlation coefficient value between 0 to 1 denotes that "there is a strong relation of between two variables" (Alam, 2009; Alaoui, Dewandaru, Rosly, & Masih, 2015; Aloui, Hammoudeh, & ben Hamida, 2015). In order to find out the relationship between two variables, it is imperative to use correlation co-efficient, which assist in measuring and predicting the change in value. In short, correlation help in predicting the change in value with respect to change in other variable.

**Table 7: Correlation amongst Macroeconomic variables and Firm Specific Variables for All type of Suku**

	Oil Price	GDP	Interest Rate	Inflation	Surpl/ Deficit	Gross Capita Formation	Total Sukuk	Sovereign Sukuk	Corporate Sukuk
Oil Price	1.0000								
GDP	0.1875	1.0000							
Interest Rate	-0.3425	-	1.0000						
Inflation	-0.0679	0.0572 0.0519	0.4159	1.0000					
Surplus/Deficit	-0.0139	-	0.3495	-0.0127	1.0000				
Capital Formation	-0.1892	0.6143 0.0276	0.0197	0.2502	-0.1946	1.0000			
Total Sukuk	-0.0246	-	-0.2064	-0.1794	0.3187	-0.1892	1.0000		
Sovereign Sukuk	0.0345	0.6734 -	-0.3369	-0.2735	0.3012	-0.1787	0.9180	1.0000	
Corporate Sukuk	-0.1455	0.7130 0.0547	0.3051	0.2180	0.0623	-0.0371	0.2613	-0.1428	1.0000

With above results, it can be observed that sovereign Sukuk issuance is moderately correlated with log GDP and they are negatively associated with each other. Also, sovereign Sukuk issuance and total Sukuk issuance are highly correlated, and regression also showed that they have similar kind of relationship with independent variable. However, corporate Sukuk issuance has negative association with sovereign Sukuk issuance and positive association with total Sukuk issuance, but with a very weak magnitude. Therefore, in regression the corporate Sukuk issuance model is a mixture of the other two. The mean of correlation of Sukuk issuance in three categories appears in below results, and other three variables have also been considered for encompassing in the regression model.

Correlation amongst these variables is demonstrated as below:

**Table 8: Correlation amongst Macroeconomic variables and Firm Specific Variables for Corporate Sukuk**

	Corporate Sukuk	Oil Price	GDP	Interest Rate	Inflation	Surplus/Deficit	CAPE X	Return on Asset	Firm Size
Corporate Sukuk	1.0000								
Oil Price	-0.1851	1.0000							
GDP	-0.5932	0.2733	1.0000						
Interest Rate	0.1941	-0.4011	-0.0688	1.0000					
Inflation	-0.0732	-0.1020	0.0542	0.3524	1.0000				
Surplus/Deficit	0.6259	0.0398	-0.6557	0.3226	0.0298	1.0000			
Capital Expenditure	-0.0944	0.0209	0.136	-0.1622	-0.0939	-0.1071	1.0000		
Return on Asset	0.4481	-0.3310	-0.3306	0.1229	0.1122	0.4181	-0.1209	1.0000	
Firm Size	0.4230	-0.1973	0.0044	0.2212	0.1473	0.2643	-0.1534	0.5776	1.0000

#### 4.5 Discussion

Based on the result, it observed that there is no enough evidence of continued low oil prices to have the positive effect on amount of Sukuk issuance. According to Standard and Poor's rating agency, low oil prices unlikely to boost GCC Sukuk issuance in futurt. In the study of Halim, How & Verhoeven (2016); Godlewski, Turk-Ariss, & Weill (2013), researcher state that slowdown in the Sukuk issuance might increase the oil price, as there is inverse relationship between Sukuk issuance and volatility in oil prices. According to the research of Hesse & Poghosyan (2009); Jobst Kunzel Mills & Sy (2008); Mohamed Masih & Bacha (2015), if there is direct relationship between oil prices and Sukuk issuance, then why there is no change in the Sukuk issuance when oil prices reduced in 2014. Comparative to the result, it is examined that

with every unit increase in oil prices, the total Sukuk issuance is expected to increase by 0.0009 units, which is quite a negligible effect, and is not statistically significant at any level of significance.

The further analyzed whether there is significant or insignificant relationship between GDP and amount of Sukuk issuance. GDP, as researched by Jobst, Kunzel, Mills, & Sy (2008); Mansoor Khan & Ishaq Bhatti (2008); Ibrahim (2015), shares a negative relationship with the issuance of Sukuk in the GCC countries. Its coefficient implies that with every unit increase in GDP, the Sukuk issuance will drop by 0.0160 units. This variable appears to have a statistically significant relationship with Sukuk issuance at 5% level of significance. Similarly, other variables like interest rates, inflation, surplus/deficit, and gross capita formation have negative relationships with total Sukuk issuance in GCC countries.

The R squared statistic shows that with all of the independent variables, the amount of Sukuk issuance is only 54.6% explainable. The increase is the result of debt issuances by the governments of Abu Dhabi and Saudi Arabia. The main reason is that governments use conventional bonds to raise finance over Sukuk is that Sukuk is more complex. If you put yourself in the shoes of a minister of finance and you need \$1bn immediately, you have two options. By comparison, Mohamed Masih & Bacha (2015); Nienhaus, Nienhaus, Karatas & Karatas (2016); Rusgianto & Ahmad (2013) state Sukuk transactions take longer, as even regular issuers need to identify an asset to use in a transaction, set up a structure and then gain approval that it is Sharia-compliant from scholars and lawyers (Roch, 2005; Elkarim, 2012; Busler, 2011).

## **CHAPTER FIVE: CONCLUSION & RECOMMENDATIONS**

The purpose of this study was to determine impact of oil price on amount of Sukuk issuance for the GCC market for the period from 2005 to 2015. This study find out the association in amount of overall Sukuk issuance and oil price; examine the effect of oil prices on amount of sovereign Sukuk issuance; and observe the effect of oil prices on amount of corporate Sukuk issuance. The results showed that the oil price does not has a significant effect on amount of three tpe of Sukuk.. In this chapter, implications and limitations of these results will be discussed.

The chapter 5 includes the implication of the results, limitation, and future work along with the conclusion. The implications of the results covered in align with finding of this study. The results of the study could be limited by a numbers of observation of Sukuk issuance in GCC for the 10 years. This section is followed by recommendations for future research to include amount of Sukuk issued in Asia, Europr, and USA. Finally, conclusion of the study is presented.

### **5.1 Implications of the Study**

The future implications will enhance the better understanding for variables that affect amoun of Sukuk issuance. Through effective use of this study, government and regulatory bodies of GCC countries may raise more fund using Sukuk and develop strategies that would be helpful at the time of volatility in oil prices.

### **5.2 Limitation of the Study**

Although the research has reached its aims, there were some limitations. First, because of the time limit, this research was conducted as a requirement for Thesis course in last semester at Effat Unisersity. Therefore, to generalize the results for larger region, the study should have involved more data sample size for other region. Second, the Sample size of the amount of

Sukuk issuance in 10 years was limited. which restricts the ability of generalizing the results to other region and It might be difficult to find significant relationships from the data, as statistical tests normally require a larger sample size to ensure a representative distribution of the population

### **5.3 Future Work and Recommendation**

This study provided the first step towards the find the impact of the amount of Sukuk issuance on the volatility of the oil price. Additional studies could improve the study:

- 1) Confirm the potential relationship found between the amount of Sukuk issuance and volatility of oil prices for this study.
- 2) Larger sample of other regions to explore the interaction between the variables.
- 5) Expand the numbers of years.

### **5.4 Conclusion:**

The study concludes that with every unit increase in log of oil prices, the total Sukuk issuance is expected to increase by 0.0009 units, which is quite a negligible effect, and is not statistically significant at any level of significance. This means that with every unit increase in oil price, as the log of oil prices will decrease, the Sukuk issuance will also decrease. On the other hand, there is the negative relationship between GDP and the issuance of Sukuk in the GCC countries due, as its coefficient implies that with every unit increase in GDP, the Sukuk issuance will drop by 0.0160 units. Similarly, other variables like interest rates, inflation, surplus/deficit, and gross capita formation have negative relationships with total Sukuk issuance in GCC countries. This means that for every unit increase in interest rates the Sukuk issuance

will drop by 0.0035 units. With respect to the first research hypothesis, it is examined that oil prices do not affect the total Sukuk issuance in GCC countries.

For the second research hypothesis, sovereign Sukuk issuance has been considered and the impact of the same independent variables on its issuance. The study analyzed that Sovereign GDP is averaged at 0.0145 with a standard deviation of 0.0237 for 49 observations from GCC countries recorded over the period of 2005 to 2015. Other variables, i.e. log of oil price, log of GDP, interest rates, inflation, surplus/deficit to GDP, and gross capita formation have the same descriptive statistics as shown and interpreted above. With every unit increase in log of oil prices, the sovereign Sukuk issuance is expected to increase by 0.0043 units, which is quite a small effect, and is not statistically significant at any level of significance. This means that with every unit increase in oil price, as the log of oil prices will decrease, the sovereign Sukuk issuance will also decrease, which implies that oil price has a negative relationship with Sukuk issuance. GDP shares a negative relationship with the issuance of sovereign Sukuk in the GCC countries. Its coefficient implies that with every unit increase in log of GDP, the sovereign Sukuk issuance will drop by 0.0168 units. This variable appears to have a statistically significant relationship with sovereign Sukuk issuance at 1% level of significance. It can be acknowledged that with every unit increase in GDP, the sovereign Sukuk issuance is expected to increase, which demonstrates a positive relationship between sovereign Sukuk issuance and GDP. Similarly, other variables like interest rates, inflation, surplus/deficit, and gross capita formation have negative relationships with sovereign sovereign Sukuk issuance in GCC countries. With respect to the second hypothesis, it is examined that oil prices do not have a significant impact on the sovereign Sukuk issuance in GCC countries.

The focus of the third hypothesis is on the corporate Sukuk, thus, this study state that

corporate GDP is averaged at 0.0145 with a standard deviation of 0.0237 for 49 observations from GCC countries recorded over the period of 2005 to 2015. Other variables, i.e. log of oil price, log of GDP, interest rates, inflation, surplus/deficit to GDP, and gross capita formation have the same descriptive statistics as shown and interpreted above. With every unit increase in log of oil prices, the corporate Sukuk issuance is expected to decrease by 0.0034 units, which is quite a small effect, and is not statistically significant at any level of significance. This means that with every unit increase in oil price, as the log of oil prices will decrease, the corporate Sukuk issuance will increase, which implies that oil price has a positive relationship with corporate Sukuk issuance. Log of GDP shares a positive relationship with the issuance of corporate Sukuk in the GCC countries. Its coefficient implies that with every unit increase in log of GDP, the corporate Sukuk issuance will increase by 0.0009 units. It can be acknowledged that with every unit increase in GDP, the corporate Sukuk issuance is expected to increase, which demonstrates a negative relationship between corporate Sukuk issuance and GDP. This means that oil prices do not have a significant impact on the sovereign Sukuk issuance in GCC countries. From the above results, it has been concluded that total Sukuk issuance is not affected significantly by oil price in the GCC countries. Also, sovereign Sukuk issuance and corporate Sukuk issuance do not get affected significantly by oil prices. Nonetheless, it has been observed that GDP is a factor to influence the Sukuk issuance in all three categories, whereas interest rates have significant impact on sovereign Sukuk, issuance and firm size have a significant impact on corporate Sukuk issuance.

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