AN INVESTIGATION OF SUKUK STRUCTURE RISK

By

Mohammed Waleed Alswaidan

The thesis is submitted in partial fulfillment of the requirements for the award of the degree of Doctor in Economics and Finance of Philosophy of the University of Portsmouth

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Despite the large and rapidly growing research literature on Sukuk risk analysis, little is known about the risk caused by different Sukuk structures. Drawing on the research literature and practice of Islamic finance, the study argues that different Sukuk structures affect the risk/expected return profile of Sukuk. Thus, risk classification schemes based on Sukuk structure provide significant insights into Sukuk risk not obtainable from conventional schemes. This is because Sukuk structure risk classification schemes link Sukuk risk more directly to the fundamental causal factors creating those risks. These links are less evident in conventional risk classification schemes. In the empirical research the deductive approach is applied. Statistical methods, including multifactor regression analysis are applied to a unique proprietary Sukuk data set provided by Idealratings, Inc. Sukuk structure risks will be correctly priced in an efficient market. However, the results of this study show that Sukuk structure risk factors have no power in explaining Sukuk market returns. The results of the thesis imply significant mispricing in Sukuk markets. This conclusion is in line with the comparative analysis of the risk/expected return profiles of Sukuk and conventional bond indices also reported in this study. These results on the informational inefficiency of Sukuk markets have significant implications for issuers, investors, governments, regulators, scholars and researchers.
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DECLARATION

Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

…………………………………………………

Mohammed Waleed Alswaidan

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<tr>
<td>AAOIFI</td>
<td>Accounting and Auditing Organisation for Islamic Financial Institutions</td>
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<td>BNM</td>
<td>Bank Negara Malaysia</td>
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<td>GCC</td>
<td>Gulf Cooperation Council</td>
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<td>IFSB</td>
<td>Islamic Financial Services Board</td>
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<td>IIRA</td>
<td>International Islamic Rating Agency</td>
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<td>IIFM</td>
<td>International Islamic Financial Market</td>
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<td>IILM</td>
<td>International Islamic Liquidity Management Corporation</td>
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<td>IPO</td>
<td>Initial Public Offering</td>
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<td>KFH</td>
<td>Kuwait Finance House</td>
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<td>FFR</td>
<td>Federal Funds Rate</td>
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<td>FOMC</td>
<td>Federal Open Market Committee</td>
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<td>REIT</td>
<td>Real Estate Investment Trust</td>
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<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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<td>Shariah</td>
<td>Islamic Law</td>
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<td>SAMA</td>
<td>Saudi Arabian Monetary Authority</td>
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<td>SSE</td>
<td>Shanghai Stock Exchange</td>
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<td>SABIC</td>
<td>Saudi Arabian Basic Industry Company</td>
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<td>SPV</td>
<td>Special Purpose Vehicle</td>
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<td>GDP</td>
<td>Gross domestic product</td>
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<td>OPEC</td>
<td>Organisation of Petroleum Exporting Countries</td>
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<tr>
<td>OIC</td>
<td>Organisation of Islamic Cooperation</td>
</tr>
<tr>
<td>MYR</td>
<td>Malaysian Ringgit Currency</td>
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<tr>
<td>MENA</td>
<td>Middle East and North Africa Region</td>
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<td>LIBOR</td>
<td>London Interbank Offered Rate</td>
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<td>PLS</td>
<td>Profit Loss Sharing</td>
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<td>UAE</td>
<td>United Arab Emirates</td>
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<td>USA</td>
<td>United States of America</td>
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<tr>
<td>USD</td>
<td>United States Dollar</td>
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<td>UK</td>
<td>United Kingdom</td>
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DISSEMINATION

Papers related to this study


Related works have been presented at the following conference

CHAPTER 1

INTRODUCTION

1.1 Background

The Islamic finance industry has made remarkable advances since the 2008 global financial crisis; assets have passed the USD$1000 billion mark, profits have risen sharply and the industry has been feted for pushing into new markets and sectors. It has become an investment option for many investors around the world including in the West. Recently, the previous Prime Minster of the United Kingdom David Cameron announced at the World Islamic Economic Forum (WIEF), (2013), in London that the UK became the first non-Muslim country to issue Sukuk. He also announced plans for a new Islamic index on the London Stock Exchange. He created a trend and built a vision to make London an international centre for Islamic finance, according to the British Broadcasting Corporation news (BBC) website (http://www.bbc.com/news/business-24722440, dated 29th Oct 2013).

The appearance of the modern Islamic finance market has been highlighted in 1973 and since then innovations in Islamic finance have played a crucial role towards increasing the dynamics of the Islamic finance industry. In particular, as a Shariah compliant alternative to conventional fixed income securities, the use of Sukuk has become increasingly important, both as a means of raising government finance through sovereign issues and as a way of companies raising finance through the offer of corporate Sukuk.

Sukuk are Islamic trust certificates or “Islamic bonds” (“Sukuk” is the plural of “Sakk”. In the literature “Sukuk” is sometimes used for both the singular and plural). Sukuk are similar in some respects to conventional bonds. However, there are major differences as well. This is because Sukuk are constrained by the Shariah (Islamic law). Most importantly, Sukuk must be structured to avoid the practices of Riba (interest or usury), Gharar (excessive uncertainty or ambiguity) and Maysir (gambling).

The development of the modern Sukuk market is very recent. The first Sukuk was issued by Shell in Malaysia in 1990. From 2000, with 3 issued Sukuk worth a total of USD$336 million, the total number issued Sukuk grew by the end of 2007 to reach 77 with a total value of over USD$36 billion. 2012 is considered the year of Sukuk which reach up to USD$ 117 billion. However, the issuance volume reduce effectively after 2012 and reach by the end of 2016 the total figure exceeded USD$42 billion (McMillen, 2016 and IIFM newsletter report, 2017).

It is reasonable to expect that this rapid growth in the Sukuk market will continue, and that Sukuk will become one of the major financial asset investment classes of the future. However, there is currently very little empirical finance research on Sukuk. Almost all of the papers in the literature discuss only the theory, principals, legal and Shariah issues underlying Sukuk. Even so, not all of the theoretical issues and problems concerning Sukuk have been resolved.
The main theoretical contribution of this thesis is the investigation of how different Sukuk structures affect the risk/expected return profile of Sukuk. Sukuk are more flexible than their counterpart conventional bonds. There is a wide variety of different types of Sukuk, structured in different ways to meet the different needs of issuers and investors. The impact of structure on Sukuk risk has so far been little discussed in the literature.

The main reason for the lack of empirical research in Sukuk, and in Islamic finance generally, has been the lack of empirical data. Despite this challenge, the University of Portsmouth is fortunate to have developed a relationship with IdealRatings Inc, one of the leading global providers of Islamic finance data. The Chief Executive Officer (CEO) and founder of IdealRatings has recently accepted the offer of Visiting Research Fellow in Islamic Finance at the University of Portsmouth, for the purpose of furthering research into, and the development of Islamic capital markets. Due to this relationship, the author has recently obtained access to data on a sample of Sukuk not accessible to other researchers. This data is used to test the hypotheses arising from the theoretical research on Sukuk structures stated above.

The main contributions of this thesis can be categorised into four areas, as illustrated in the figure below:

*Figure 1: Summary of the thesis’s main contribution areas*

The systematic review of the literature presents an up to date review of the relevant literature. The unique Sukuk data set, obtained from the core files underlying the Idealratings subscription service, are used to test hypotheses regarding the pricing of structure risk, and other risks, in the Sukuk market. The third area of contribution updates and expands on an empirical approach already applied in the literature. Due to the lack of empirical data in Islamic finance noted above, most empirical research contributions on Sukuk are based on comparisons of the available Sukuk and bond indices. This approach is updated and refined in this study. The fourth main area of contribution is introducing and investigating Sukuk structure risk as a risk factor. A number of hypotheses concerning Sukuk structure risk, in combination with several other risk factors, are empirically tested using the uniquely available Idealratings data set referred to above.
The rest of Chapter 1 expands on this introduction with: a general overview of Islamic finance (Section 1.2), the meaning of Sukuk (Section 1.3), how Sukuk differ from conventional bonds (Section 1.4), the history and development of Sukuk in the Saudi Arabian and Malaysian markets (Section 1.5), certain other issues concerning Sukuk (Section 1.6), a statement of research aims, objectives, rationale, and main research contribution (Sections 1.7 to 1.11), and an overview of the remainder of the thesis (Section 1.12).

1.2 General overview of Islamic finance

With the Islamic Financial Services Board reporting that assets in Islamic finance are expected to reach USD$2.8 trillion in 2015, and with the continued growth of the global Sukuk market, opportunities for investors abound. The academic interest in Islamic banking and finance has grown immensely over the years. Many studies have been conducted on its theories and applications from different aspects, and the demand for its studies and research in the area continues to expand. The appeal of Islamic banking to the Muslim world is decades old.

Many of the practices in conventional banking that caused the recent global financial crisis are forbidden in Islamic finance. Consequently, Islamic banks and financial institutions were not involved in these activities, and survived the aftermath of the financial crisis far better than their conventional counterparts. The 2008 financial crisis, together with the ongoing Eurozone crises have spurred further interest in Islamic finance in the academic community. Currently, notable academics from conventional economics have either written papers on Islamic finance or commented in conferences on the viability of the Islamic finance proposition (e.g., Şendeniz-Yüncü, 2011; Rogoff, 2011a; Rogoff, 2011b; Beck, Demirgüç-Kunt and Merrouche 2013; Abedifar, Molyneux and Tarazi 2013; Zaheer, Ongen and Van Wijnbergen, 2013, Ongen and Roubini, 2013, Baele, Farooq and Ongen, 2014). This is a wanted development and may help add more solidity and diversity to Islamic finance research. In addition, it creates a challenge to academics and practitioners to solve the many theoretical and practical questions concerning the development and implementation of Islamic finance. Also, the innovative environment of Islamic finance instruments, such as Sukuk has increased the interest towards conducting more research on it.

Empirical work in Islamic finance is on the rise due to the increasing availability of data. In particular, data on debt instruments such as Sukuk. Hence, this research is a journey that builds on the existing empirical work on Sukuk, and investigates further those factors hypothesised as determining the risk/expected return characteristics of Sukuk.

With the developments and changes in the financial industry over recent decades, Islamic finance has found itself a fast and innovative player in its sectors. It has evolved to become one of the most dynamic and fastest developing business areas in global finance (Pock, 2007), which is currently growing at between 10-15% each year (Ainley, 2007), the value of Islamic finance assets in the world reached over one trillion US dollars in 2012 (Mansor & Bhatti, 2011), and is continuing this growth, reaching above two trillion USD in 2015-2016, according to the annual report (2016) of the City UK’s, UK Islamic Finance Secretariat (UKIFS). Clearly, the expansion of Islamic finance has increased its position around the world after the recent financial crisis.
The main clients for Islamic finance are Muslim people, estimated today at around 24% of the world population (Kettani, 2010), (See appendix A). They are expected to be the major drivers for creating the demand in Islamic finance. In turn, the main players in Islamic finance are hosted in Islamic countries such as Malaysia, the Kingdom of Saudi Arabia, the Kingdom of Bahrain and the United Arab Emirates (UAE). In spite of this, the expansion of Islamic finance as an industry is quite modern. According to Iqbal and Molyneux (2005), the age of the Islamic finance system began in 1975.

The philosophy of establishing a new financial system or of adapting conventional instruments in such a way that serves savers and investors in the Islamic world may help as well to stabilise banking systems in the rest of the world. Hameed and Ahamed (2010) note the rapid growth in in Islamic banking and finance, with more than 400 Islamic financial institutions distributed in 92 countries, and achieving growth rates of 10% annually. From these observations, it can be seen that the Islamic financial system has brought optional banking and investment services to particular customers. The Islamic financial system now plays a crucial role, side by side, with the conventional financial system.

The distinctive factor of Islamic finance is that it has a different methodology used for investment and dealing with money. It has an important characteristic in that it supports risk-sharing between users and providers of capital. This feature is not shared in other financial systems to the same extent. The Islamic finance system is Islamic in the sense that it is guided by Islamic law, the Shariah, which defines the rules and guidelines for the appropriate functioning of the Islamic financial system.

Elfakhani and Hassan (2005) emphasised that Islamic financing structures are based on participatory schemes and that Islamic finance gains its features from the characteristics of the Shariah Law. The most important element of the Shariah Law is forbidding dealing in three things: Riba (interest), Maysir (gambling and pure games of chance), and Gharar (selling something that is not owned or that cannot be described in accurate detail such as the type, size, and amount).

Islamic finance theory shares common financial concepts with Ethical finance theory. Murninghan (1992) says that Ethical finance goes back to the attempts of some religious institutions to avoid the so-called sin industries such as gambling and drugs. Cowton (1994) explained Ethical investing as the use of ethical screening based on social factors to obtain and manage investment portfolios, while Hussein (2004) identified that the most important difference between Islamic and Ethical finance is that, in addition to the exclusion of particular sectors, Islamic finance does not deal in the fixed income market and the receipt and payment of interest is not permitted. This implies that Islamic finance and Ethical finance are similar in many respects, with the difference that Islamic finance is constrained by the Shariah as Hussein explained. The risk-sharing aspect of Islamic finance promotes long-term financing, a competitive advantage of Islamic banking (Zaher & Hassan, 2001).

Islamic finance instruments reflected these features by setting up an Islamisation of conventional finance instruments, such as Sukuk against bonds. Both of them are used for short-, medium- and long-term investment but each of them has a different methodology. Sukuk markets have grown rapidly over the last decades along with the demand for Islamic finance instruments. Investments in Sukuk worth enormous amounts have appeared, and have been widely subscribed to by many Islamic banks (Usmani, 2008).
It has become a competitive instrument against bonds around the world. According to Zawya, 2011 was a record year for Sukuk issuance, reaching US$84.4 billion. In 2012 US$68 billion were issued in the first half of the year, an increase of 55% over the same period of 2011. The total global Sukuk issuance in 1Q of 2014 was USD$32.9 billion, an increase of 13.8% over 1Q of 2013 (Zawya, 2014).

Forecasts for Sukuk growth continue to be positive for the coming years, and estimates show that the total global Sukuk issuance may reach USD$237 billion by 2018 (Zawya, 2013). A study by Thomson Reuters (2013) estimates that the gap between global supply and demand for Islamic bonds is likely to peak in 2014 and then shrink gradually for several years as issuance grows. The graph below shows Sukuk growth trends for the global Sukuk market forecast for the period (2009-2018). It is clearly explaining how Sukuk are growing in a healthy trend creating expanding in its market share appealing more investors.

Figure 2: Global Sukuk Forecast

By contrast, the size of the current global bond issuance is estimated to be around US$349.5 billion (SIFMA, 2013). However, according to Zawya (2014) Sukuk annual returns have out-performed those of conventional bonds as shown in the graph below:
1.3 What are Sukuk?

Sukuk, plural of Sakk (Arabic: سكك, Sukuk) is the Arabic name for an Islamic investment trust certificate. Over the flourishing period of Islam in the 13th century, Sakk, which is believed to be the source root of the European “Cheque”, was any certificate representing a contract or conveyance of financial rights, obligations or money transactions that is Shariah compliant for thriving trade activities (Adam & Thomas, 2004). While the word Sukuk is sometimes used erroneously as a singular noun, it is correctly used as a plural noun for all contexts.

The modern Sukuk concept is based on asset monetisation or securitisation in which the issuance of Sukuk (Taskeek) converts the future cash flows of an asset into present cash flow. Sukuk may be issued on existing as well as specific assets that may become available at a future date.

The lack of low risk Islamic investment instruments limits the investment opportunities for Muslims. The stock market, with high volatility and real estate investments are currently the most available investment opportunities. In terms of fixed income instruments, conventional interest-bearing bonds are not permissible in the Shariah Law, and Sukuk are the Shariah compliant alternative.

Sukuk are asset-based securities while conventional bonds are based on debt. Sukuk are structured according to Shariah principles, and referred to variously as Islamic bonds, Islamic debt securities, or Islamic trust certificates. In addition, Sukuk are compliant with the Islamic Law which prohibits dealing in interest. Sukuk are a unit of equal value representing undivided shares in the ownership of physical assets and/or services, or in the ownership of the assets of a particular project or investment activity.

Sukuk are asset-based, balanced income, tradable and Shariah compatible trust certificates. As Sukuk are used to mobilise financial resources, the existence of assets on the balance sheet of a Sukuk issuer, such as a government, monetary authority, corporate body or financial institution is considered the primary condition for the issuance of Sukuk (LMC, 2008).
While Sukuk securitisations are different from those of bonds, the model of Sukuk securitisation is derived from the conventional securitisation process in which an SPV (Special Purpose Vehicle) is set up to purchase assets and issue financial claims on the assets. These financial asset claims represent a proportional beneficial ownership to the Sukuk holders. Therefore, the SPV plays a crucial role in the Sukuk life cycle.

In a simple context, the steps involved in the issuance of Sukuk are first preparing a detailed feasibility study for finding the proper asset to suit potential investors’ appetites. Second, setting up a general framework and organisational structure of Sukuk certificates, including Shariah structure and legal documentation. Third, setting up a special purpose vehicle, SPV, to represent the investors. Finally, investment management of the assets underlying the Sukuk to generate the profits that pass to the Sukuk investors (LMC, 2008). Thus the simple lifecycle of Sukuk can be illustrated as follows:

*Figure 4: Sukuk certificate basic concepts*

This indicates how Sukuk became a competitive player in the global financial market. On the other hand, it invites questions surrounding how Sukuk distinguish themselves from bonds.

### 1.4 How are Sukuk distinct from conventional bonds?

Due to the Islamising methods that have been adopted in Islamic finance products (Wilson, 2004), a question arises surrounding Islamic products and how they are distinct from conventional ones. In the Sukuk case, they have common functions with bonds in terms of resource mobilisation from the markets and injecting liquidity into projects or government. Also, both of these instruments provide stable income for investors. However, there are differences between Sukuk and bonds. In general, the differences are based on the methodology of operation, principles of law and financial strategy. There are a lot of studies conducted on analysing the differences between Sukuk and bonds. Wilson (2008) comments that conventional bonds are associated with interest rate movement, as it structures the returns solely in terms of interest. For example, the prices of conventional fixed-interest bonds rise when variable market interest rates fall. Conventional bond trading is therefore largely about exploiting interest rate changes and trading in paper that is usually unrelated to the value of any underlying asset. This is a critical difference because Sukuk gain value from the asset they are attached to. Also, returns on Sukuk are derived either from the performance of an underlying asset or the contractual agreement that is based on this asset (Nanaeva and Mammadov, 2010).
Furthermore, Sukuk are different from conventional bonds in terms of underlying structure and provisions (Ahmad & Radzi, 2011). While a bond represents the issuer’s pure debt, Sukuk represents units of equal value with undivided ownership in the underlying assets, usufruct, services or investment in certain projects or special investment activities (Kamil 2009).

Khalil (2011) clarified that the conventional bond is a contractual debt obligation whereby the issuer is contractually obliged to pay to bondholders, on certain specified dates, interest and principal. In comparison, Sukuk holders are entitled to claim an undivided beneficial ownership in the underlying assets. Hence, Sukuk revenues are generated by the returns on the Sukuk assets as well as a share in the proceeds of the realisation of the Sukuk assets.

Helmi, Munisamy and Ramasamy (2011) stated that Sukuk are different from conventional bonds in terms of rates, and in terms of the treatment of delayed payments. In conventional finance the rate of return on a conventional bond is an interest rate, and, in a situation where the borrower fails to repay in time the interest accrued is added to the principal and thus earns interest based on the length of the time the funds are utilized by the borrower. In contrast, Islamic finance charges a mark-up (profit) over the principal and when default or delay occurs in repayment a penalty is charged. In addition, the delayed amount is not added to the principal and no extra amount is charged. This implies that the lender faces more risk in Sukuk. Therefore, Islamic finance may expect to gain a higher return (profit rate) than conventional finance caused by various risks associated with Islamic finance instruments. This is implied by the positive relationship between risk and return.

From an operational perspective, it could be said that the main types of Sukuk structures are theoretically straightforward; they may become complicated in practice compared to conventional bonds, as some financial institutions combine characteristics of two or more types of tools to form hybrid instruments. Nonetheless, the market practice of issuers is to promote Sukuk with similar features to those of conventional bonds to facilitate the progress of their recognition in both Islamic and conventional financial markets. Another critical differentiation factor between Sukuk and conventional bonds is that Sukuk returns are related to the profit/loss or revenues of a project. In contrast, conventional bonds represent pure debt obligations; Sukuk holders may be affected by asset related expenses, while asset related expenses do not affect conventional bond holders; Sukuk prices depend on the market value of the underlying asset, while conventional bonds depend solely on the creditworthiness of the issuer; selling Sukuk is principally the sale of a share of an asset, while selling bonds is principally the sale of debt. However, Sukuk and conventional bonds share some similarities such as rateability, credit enhancement and versatility (Alsaeed, 2012).

Miller, Challoner, and Atta (2007) maintain that Sukuk are similar to conventional bonds in certain respects. However, they emphasise that in the case of Sukuk, returns are generated from the assets underlying the Sukuk, while conventional bond returns are based on the obligation of the issuer to pay interest. Wilson (2008) explains that investors are more cautious when it comes to investing in Sukuk compared with conventional securities, because of the uncertainties arising from investment in a new asset class. Sukuk issuers therefore, tend to replicate some aspects of conventional securities.
Woodruff (2007) presents the difference between conventional bonds and Sukuk as follows:

- The sale of financial instruments in the secondary market represents the sale of a debt obligation in the case of conventional bonds and the sale of a right of the use of an asset for Sukuk.
- The second difference is the tax treatment, under several tax systems; Sukuk rental payments are not deductible before tax in the same way as conventional bonds interest payments. A Sukuk transaction is one whereby investors finance the purchase of an asset by means of profit-sharing financing. The payment to investors should come from after-tax profits.
- Sukuk, like conventional bonds, are easily marketable and transferable in the secondary market. The secondary market for Sukuk is not as liquid as for conventional bonds because of the buy and hold strategies of many Sukuk investors and the limited supply of Sukuk relative to demand.

Tariq (2015), considering the similarities and differences between Sukuk and conventional bonds, referred to the gap in the transition of Sukuk theory into practice. He commented that, in theory Sukuk are meant to be securitised representations of undivided shares in an underlying asset or service. In practice, however Tariq (2015), stated that many Sukuk prospectuses are drafted by lawyers with the aim of replicating conventional bond structures. Consequently, the over US$600 billion Sukuk certificates that have been issued in the global market can be considered as the Islamic equivalent of conventional bonds.

Generally speaking, Sukuk are prepared in the same way as conventional asset-backed securities or covered bonds. The difference is that Sukuk, like any other Islamic financial instrument need to act in accordance with Shariah. Sukuk investors hold the ownership of the underlying asset via a special purpose vehicle or entity (SPV/SPE), in which they receive unsecured payments from direct investment in real, religiously-sanctioned economic activity (Wilson, 2004).

This research attempts to consider Sukuk from the point of view of the measurement of financial risk, in order to understand further the similarities and conventional bonds.

1.5 Overview of the development of the Sukuk market

The Islamic financial market has grown significantly since its appearance in its modern form in the 1970s. The globalisation of financial markets has expanded the global platform of Sukuk to encompass banking, insurance and capital markets, extending the reach of Sukuk markets well beyond traditional Muslim jurisdictions, and into Europe, the US and the Asia Pacific region.

The development of Sukuk with its associated types of structure has given rise to much discussion and debate among scholars of Islamic law. This was driven by the unique feature of Islamic debt compared to non-Islamic debt, namely, that Islamic debt offers a secure investment based on the principle of rent and profit sharing without a legalised interest system (Fauzi, Locke, Basyith and Idris, 2015).

As far as Sukuk are concerned, it considered the fastest growing financial security in the market. In 2006 there were over US$41 billion in Sukuk issued. Governments, notably in the Gulf Cooperation Countries (GCC) and Malaysia, have prepared several Sukuk offerings.
These sovereign Sukuk offerings include the Kingdom of Bahrain’s Sovereign Sukuk programme, started in 2001, while the Qatar Global Sukuk raised US$700 million in 2003, and US$1.6 billion Sukuk are planned to be issued by Dubai’s Civil Aviation Authority. Moreover, Western governments have issued Sukuk, such as the German Government raising €100 million from both Middle Eastern and European investors. This German Sukuk was backed by real estate assets. In addition to the fact that many Sukuk are listed on the London Stock Exchange, the United Kingdom expanded its presence in the Islamic financial market through the issuance in 2014 of a £200 million Sukuk.

On the other hand, corporate Sukuk have expanded rapidly, reaching US$11.3 billion from US$5.7 billion over the period 2004-2005 and from US$11.3 billion to US$24.8 billion for the period 2005-2006 to reach nearly US$32 billion in 2007. Sukuk have been used in the USA, where oil and gas assets in the Gulf of Mexico were backed with a US$165.7 million Sukuk offering that closed in 2006 (Said, 2011). This implies that Sukuk issuance has several drivers. The figure below from the ISRA Sukuk report categorises those drivers; sustained global economic growth, sovereign liquidity needs (for continued infrastructure spending) and the attractiveness of cross-border destinations for fund raising and working capital and capex needs.

*Figure 5: Key drivers of Sukuk issuances*

Attractiveness of cross-border destinations for fund raising

Sustained global economic growth

Working capital and capex needs

Sovereign liquidity needs (continued infrastructure spending)

*Source: Global Sukuk Report Q1, 2015*

Sukuk change the expected capital gains from joint risk sharing between borrowers and lenders in *Shariah* compliant finance contracts, such as lending transactions by Sukuk investors with instalment payments and trust based investments in existing or future assets. Hence, Sukuk are used to finance the assets of one or a combination of three basic forms of Islamic finance (Iqbal and Mirakhor, 2006). Total Sukuk outstanding globally exceeded US$90 billion in 2007 (Moody’s, 2008). Although in 2006 the financial market experienced a collapse, in 2007 the number of Sukuk transactions grew to 119, up from 109 in 2006, while the average transaction size rose to US$270 million in 2007 from US$175 million in 2006 (Said, 2011).
Thomson Reuters reported that the Sukuk market grew from US$6 billion to US$24 billion between 2004 and 2007. However, in 2008, the Sukuk market shown a decline of about 30% due to uncertainty in the global capital markets. As market conditions in the aftermath of the 2008 global financial crisis stabilised, the Sukuk market recovered during the second half of 2009. The graph below summarises Sukuk issuance over this period.

**Figure 6: Sukuk issuance 2001 - 2009**

![Graph of Sukuk issuance 2001-2009](image)

*Source: Islamic Finance and Global Financial Stability report, IFSB, 2010*

**Figure 7: Total global Sukuk issuance since Jan 2001**

![Graph of total global Sukuk issuance Jan 2001-Oct 2016](image)

*Source: IIFM Newsletter, March, 2017*
The above updated figures are from the International Islamic Finance Market (IIFM) issued in March 2017. It shows that the Sukuk market has shown resilience and stability and a positive issuance trend over time. It can be seen that Sukuk issuance was hit in 2008, caused by the global financial crisis, and recovered subsequently.

Moreover, according to Zawya (2012) Sukuk issuance in the global market has rapidly improved. The graph below illustrates the Sukuk issuance improvement. It can be seen that 2007 was the best year on record until 2011. The market trend was negatively affected by the global financial crisis in 2008/2009.
The growth of the supply and demand of Sukuk has been phenomenal. Zawya (2015) predict that by 2020 Sukuk issuance will surpass $US200 billion with demand reaching almost a trillion. This is illustrated in the graph below.

Figure 10: Global Sukuk Issues (US$m)

![Figure 10: Global Sukuk Issues (US$m)](image)

Source: Zawya, 2012

Sukuk issuance will surpass $US200 billion with demand reaching almost a trillion. This is illustrated in the graph below.

Figure 11: Sukuk demand and supply levels (2014 – 2020)

![Figure 11: Sukuk demand and supply levels (2014 – 2020)](image)

Source: Zawya, Sukuk perceptions and forecast 2015
The Sukuk market emerged in the mid-1990s. It began in Malaysia with a variety of Sukuk structures issued such as Sukuk Mudharabaha in 1994, Sukuk Ijarah in 2001, Sukuk Musharakah in 2005 and exchangeable Sukuk in 2006. Malaysia has become the largest Sukuk market in terms of the outstanding size and number of Sukuk issues, estimated at US$47 billion in 2006. Sukuk accounted for 14% of Malaysian public sector bonds that were outstanding. Sukuk have represented about half of the total stock within Malaysian’s corporate bonds, estimated at US$32 billion (Said, 2011). In the Malaysian market a great variety of Sukuk structures have been used, ranging from Sukuk representing the payment obligations of deferred payment sales to more complicated trust certificates with exchangeable features.

Sukuk have also been hosted by the Kingdom of Bahrain market. In 2002 it issued domestic sovereign fixed rate Ijarah and Salam Sukuk. Other structures too are issued in this market, including floating rate Ijarah Sukuk, as well as Sukuk based on Salam, Ijarah, Istisna, and Istisna combined with Ijarah, by corporate and sovereign issuers (LMC, 2008).

According to Jobst (2009), the issuance of Sukuk weakened in the first half of 2008 and remained lower than the 2007 record. Sukuk volume dropped to US$15.2 billion in 2008, down by about 35% on an annualised basis. The issuance of conventional structured finance instruments collapsed to just under US$387 billion, down by about 80%. This study will examine Sukuk performance from a financial risk perspective in the Saudi Arabian and Malaysian Sukuk markets. The Saudi Arabian market catapulted to second position, after Malaysia, in terms of global Sukuk issuances since 2012.

It has been observed that Sukuk have different types of potential investors. Potential investors for Sukuk can be broadly categorised into six types, each with its own requirements and investment criteria. They are pension funds, Islamic banks, Shariah investment funds, Islamic insurance companies (Takaful), corporates and individuals (Sukuk report, Alawwal Capital, 2013). Recently, global players in the finance industry have become active participants in Sukuk markets, including international investment banks, Islamic banks and securities firms that have participated in the issuance of Sukuk.

Product development and innovation will remain a key topic for research in Islamic finance for reasons related to risk management as well as increasing competitive advantage (Tariq, 2015, Ali, 2013). The analysis of Sukuk risk structures conducted in this study may have implications for Sukuk as a recommended Islamic financial instrument relevant for all categories of Sukuk investors and participants.
This research contributes in respect of gaining a better understanding of Sukuk risk performance by introducing structure risk factors into the measurement of risk. As Saudi Arabia and Malaysia are the main market players in Sukuk, these markets are major focus of this research. Further background on these markets is given in the following sections, and in Appendix B and C.

1.5.1 The Saudi Arabian Sukuk market

Section 1.5.1 presents a brief overview of the Saudi Arabian market. Some extensive further background is presented in Appendix B.

Islamic finance has penetrated the Gulf region (Saudi Arabia, Kuwait, Qatar, United Arab Emirates and Bahrain). Islamic financial institutions have had strong performance over the past decades. Also, the financial crisis has further supported the growth of Islamic financial institutions and markets. Table 2 shows the comparison in terms of aggregate size and performance of Islamic banks and conventional banks in the Gulf region (Saudi Arabia, Kuwait, Qatar, United Arab Emirates and Bahrain).
Table 1: Comparative Profiles of Conventional and Islamic Banks in the Gulf Region

<table>
<thead>
<tr>
<th></th>
<th>Conventional Banks</th>
<th>Islamic Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets (US$ billions)</td>
<td>1,135,669</td>
<td>232,189</td>
</tr>
<tr>
<td>Profits (US$ billions)</td>
<td>22,008</td>
<td>7,666</td>
</tr>
<tr>
<td>Asset growth 2007-2008</td>
<td>16.3%</td>
<td>38.2%</td>
</tr>
<tr>
<td>Profits growth 2007-2008</td>
<td>-6.1%</td>
<td>20.1%</td>
</tr>
<tr>
<td>Profits/Assets</td>
<td>1.9%</td>
<td>3.3%</td>
</tr>
</tbody>
</table>


Ideally, the system which should be followed in Saudi Arabia is the Islamic finance system, because it is classified as an Islamic country. Al-Hassan, Khamis, and Oulidi (2010) investigated how it can be possible for both systems operate in the Saudi Arabian market (Islamic finance and conventional finance). The financial sector in this area is dominated by banks. In other words, non-bank financial institutions are found to be fewer than banks and do not compete head to head with banks in this field. They claimed that because of the massive production and export of oil from Saudi Arabia and the Gulf countries, it can be said that the Saudi Arabian market shares with neighbouring countries the same economic principles, which means sharing the same strengths and vulnerabilities. The Saudi financial markets and economy were impacted by the 2008 global financial crisis, with indices falling by around 40% (Al-Hassan et al (2010), Woertz (2008), Gomel and Saidi (2010)). During the recent oil price falls during 2014 to 2016 the Saudi Arabian financial market has been negatively by the sharp falls in oil revenues.

Obay and Kashani (2008) describe the financial sector’s main features. They note that its main feature is its focus on the narrow domestic market. Another factor is that the financial system is monitored by highly restrictive regulations from the government. Obviously, these regulations affect the operations of the Saudi banks, but at the same time they could help reduce involvement in highly risky investments.

In terms of the Sukuk sector, the Saudi Arabian market in government bills and conventional bonds has become more complex in recent years, partly reflecting the growth of government debt and the consequent efforts to find more methods of funding it. The Saudi Arabian Monetary Authority (SAMA) handles these through its transactions with the commercial banks, with repos serving as their liquid assets. The average value of repos was SR1.8 billion and reverse repos SR3.2 billion in 2002, compared with averages of SR1.6 and SR1.0 billion respectively in 2000 (Wilson, 2008). Currently, the official repo rate is 2% and the reverse repo rate is 0.75% (www.sama.gov.sa dated 31st Dec 2016). In addition, recently the Saudi Arabian government raised USD$17.5 billion in the biggest ever bond sale from an emerging-market nation as it sought to improve its finances, weakened the fall in the oil price. The Saudi Arabian government intends to issue sovereign Sukuk in future. Moreover, a huge development of corporate Sukuk was conducted after the establishment of the sovereign Sukuk. The players competing in the market in terms of Sukuk issuers are Saudi Arabia Basic Industries
Corporation (SABIC), Saudi Electricity Company, Aramco Company and Alawwal Bank. The trend towards Sukuk development in Saudi Arabia is continuing to improve. A comprehensive picture is provided in Appendix B.

1.5.2 The Malaysian Sukuk market
Section 1.5.2 presents a brief overview of the Malaysian Sukuk market. Some extensive further background is presented in Appendix C.

According to Kettel (2013) Malaysia is the world’s core Islamic finance centre, although the richer Gulf States and Saudi Arabia have bigger Islamic banks and Indonesia the largest Muslim population. Malaysia also influences the global market for Sukuk. Kettel (2013) commented that leadership in financial services is not always an obvious one. Yet, in many ways the country is the world’s most important Islamic finance centre. The Muslim population is registered at 61.3% and over a 20% of the country’s banking system, by assets, is Shariah compliant.

Malaysia’s global footprint is enhanced by being the home of certain global bodies of Islamic finance, such as the Islamic Financial Services Board (IFSB), an international standard setting body which was established in 2002. The work of the IFSB complements that of the Basel Committee on Banking Supervision, the International Organisation of Securities Commissions and the International Association of Insurance Supervisors. In addition, Malaysia is the host country of the International Islamic Liquidity Management Corporation (IILM) which is an international institution established by central banks, monetary authorities and multilateral organisations to create and issue short-term Shariah compliant financial instruments to facilitate effective cross-border Islamic liquidity management. The IILM was established on 25 October 2010. The current shareholders are from the central banks and monetary agency of Indonesia, Kuwait, Luxembourg, Malaysia, Mauritius, Nigeria, Qatar, Turkey, the United Arab Emirates and the Islamic Development Bank.

Hence, Malaysia is thriving on its vibrant and comprehensive Islamic financial services industry. Malaysia has continued to be the favoured domicile for Sukuk issuances globally, where 69% of the global Sukuk issuances originated from Malaysia in 2013 amounting to USD$82.4 billion (RM271 billion). In terms of currency, the ringgit also maintained its domination in 2013, with 67% of total Sukuk issuances worth USD$89.4 billion. (Sukuk report, IIFM, 2014).
The success story of Malaysia in the development of the Sukuk market reflects the strategic strong commitment of the government to develop a comprehensive Islamic financial system that will ultimately lead to Malaysia becoming the centre for Islamic finance globally.
Malaysia pioneered the development of the global Sukuk market with the launching of the world’s first sovereign five year global Sukuk worth US$600 million in 2002 (Kettel, 2013 and Sukuk report, IIFM, 2014). Having introduced the world’s first global sovereign Sukuk, Malaysia continued to facilitate the development on innovative Sukuk structures such as the exchangeable Sukuk Musharakah by Khazanah Nasional Berhad, the investment arm of the Malaysian Government. Since then, Malaysia had led the world in Sukuk issuances covering sovereign global, domestic and corporate issuances. Malaysia successfully issued its second sovereign global Sukuk Ijarah and third Wakalah global Sukuk in 2010 and 2011 respectively (Sukuk report, IIFM, 2014).

The progressive development of the Sukuk market in Malaysia over the years paved the way for Malaysia to emerge as a vibrant Sukuk centre, offering a complete platform for Sukuk activities through its issuance environment, policies for encouraging investment activities and comprehensive Islamic financial infrastructures. This has made the Malaysian Sukuk market uniquely attractive for global investors and players as a preferred Sukuk issuance and investment destination. A comprehensive picture is provided in appendix C.

1.5.3 Comparison between the Saudi Arabian and Malaysian Sukuk markets

Saudi Arabia and Malaysia are the main players in Islamic finance sector in the world. Many recent studies have selected Malaysia, Saudi Arabia, and other Gulf countries as case studies in order to examine the theory and practise of Islamic finance. It is important to address the similarities and differences between the Saudi Arabian and Malaysian markets. The differences are presented in four categories related to the Sukuk markets in both countries. These categories explain the differences in terms of the Shariah, legal issues, the market, trading and liquidity.

1) Shariah interpretations under Sukuk securitisation

The current practise of Islamic banking in Malaysia has been criticised as being insufficiently different from conventional banking. One of the main criticisms is the application of the Shariah based Bay-Al-Inah contract in creating a number is so-called Islamic financing products. Bay-Al-Inah is a sale contract with immediate repurchase (Kettel, 2013). This has been questioned by many Islamic finance academics, experts and commentators (Mohammad and Yousef, 2008, Ascarya and Yumanita, 2008, Hasan, 2010, Kettal, 2013). Although more than 70% of global Sukuk are issued in Malaysia an important Shariah related question concerns whether any investors, outside Malaysia, actually buy them.

Bay-Al-Inah refers to sale and buys back agreement. It is a contract of sale where a person sells an asset on credit and then buys back at a lesser price for cash. Example: Mohammed asks a loan of £10 from Ahmed. Ahmed, instead of asking for interest on this loan applies a contrivance. He sells an asset to Mohammed for £12 on credit and then immediately after that he buys back from him the same asset for cash at £10. The buying back agreement allows the seller to assume ownership over the asset in order to protect against default without explicitly charging interest in the event of late payments or insolvency (Kettel, 2013).
*Shariah* schools conform to the *Shariah* law but each school has the right to have its own interpretations of the *Shariah* law within a certain rules and bounders (Kettel, 2013). These schools are referred to as the Islamic jurisprudence schools, and are discussed in greater detail escribed in Appendix D. By virtue of the differences between the schools, the undertaking of Islamic finance transactions is not a standard process throughout the Islamic world. This, in turn, means that a transaction such as Sukuk that may be deemed to be acceptable in one school, but could be rejected in the other view because of its perceived non-compliance with the rules of *Shariah*.

The majority of scholars reject the concept of sale of debts, as it an application of interest (*Riba*) which is prohibited by *Shariah* law. Others such as the *Shafi‘i* school of Sunni Islam have a different view, and accept the sale of debt in *Bay-Al-Inah* contracts. This view is adopted in the Malaysian Islamic financial markets, according to the Malaysian Securities Commission (2002). In contrast, it is not approved in the Saudi Arabian interpretation of Islamic finance, according to the *Hanbali* school. Furthermore, the prohibition on debt trading, including *Bay-Al-Inah* is considered in the AAOIFI *Shariah* standard 21 as a void contract. Mohammed and Yousef (2008) explained that Islamic judges are agreed in allowing the activity of selling debts to the debtor as, the debt can be delivered to the debtor and the prohibition on *Gharar* (uncertainty) is avoided. However, there are differences in opinion with regard to selling the debts to a third party. This illustrates the different interpretations of *Shariah* law in Saudi Arabia and Malaysia. Malaysia, which has the world’s largest Sukuk market, follows the *Shafi‘i* school of *Shariah* law, and base their opinion on certain rulings which the scholars in Saudi Arabia, the heartland of Islamic finance following other schools, generally speaking, do not agree with (Ketell, 2013). In the author’s view, it could be said that debt trading is the same concept as in the conventional banking system, whereby money is an asset that can be bought and sold, while the Islamic finance theory emphasises that money is not an asset and should be, ideally a vehicle to be used as a medium for the exchange of real assets. However, the diversity of interpretation of *Shariah* may affect the determination of certain rulings on a special issue where one Islamic finance expert would accept a new product as being *Shariah* compliant while others would decide it to be non-compliant (McMillen, 2006). In fact, this is a critical dilemma that faces Islamic bankers in the current market, despite the fact that there have been several recorded attempts regarding the standardisation of the *Shariah* rules, especially in international trades which may involve non-Muslim counterparties. At the present time, the AAOIFI *Shariah* standards are often used as a benchmark for best practice.

Most *Shariah* scholars in the Gulf region, including Saudi Arabia do not permit securitisation of debt trading in Sukuk. By contrast, in Malaysia the view is different. The securitisation of debt trading in Sukuk is permitted. For example, it is permissible to trade Sukuk *Murabaha* in Malaysia while in Saudi Arabia is not. The investors’ practise in Saudi is holding the Sukuk *Murabaha* till the redemption date due. This implies different risk profiles for the same Sukuk structures trading in different markets, according to the differences in the interpretations of the *Shariah* rules in these markets.

2) *Shariah* governance

The diversity of practices and models of *Shariah* governance systems is a current feature of Islamic finance. Hasan (2010) contributed with a study of regulatory frameworks of *Shariah* governance systems including Malaysia and Saudi Arabia. He illustrated different approaches to *Shariah* governance in respect of the regulatory framework. He observes that Malaysia follows a pro-active approach. Proponents of this model
argue for a regulatory-based approach in strengthening the Shariah governance framework. In Malaysia many laws have been passed and amended by the Malaysian parliament, including the Islamic Banking Act 1983, the Takaful Act 1984, the Banking and Financial Institutions Act 1984 and the Securities Commission Act 1993. The Central Bank of Malaysia Act 2009 confirms the status of the National Shariah Advisory Council (SAC) to be the sole authoritative body in Islamic finance. Furthermore, Bank Negara Malaysia (BNM) issued the Guidelines on the Governance of Shariah Committee for the Islamic Financial Institutions known as the BNM/GPS1. In addition, the Securities Commission of Malaysia issued the Registration of Shariah Advisers Guidelines 2009, setting out the criteria for the registration of a Shariah adviser in the capital market sector.

On the other hand, Saudi Arabia has adopted a passive approach to Shariah governance. The Saudi Authority Monetary Authority (SAMA) treats Islamic finance as being equal to its conventional counterparts. SAMA has yet to issue legislation pertaining to Islamic finance and guidelines on a Shariah governance system. There is no national Shariah advisory board or any institutions mandated to be the sole authoritative bodies in Islamic finance. The existing Shariah governance system as practiced by the Islamic financial system in the Kingdom of Saudi Arabia is a product of self-initiative rather than regulatory requirement or regulator’s direction. Hassan (2010) advised that establishing a Shariah board at national level, providing legal provision on the final authority of the Shariah board’s rulings, allowing relevant experts to be appointed as the Shariah board members and issuing universal Shariah prudential standards is a proper solution to improve the Saudi Arabia model in Shariah governance. This solution has been adopted in other countries such Sudan and Pakistan as well as in Malaysia. Another solution may be to adopt the international Shariah standards issued by global bodies such AAOIFI and the International Islamic Fiqh Academy.

3) Sukuk markets

According to Aljazirah Capital report (2010) the Saudi Arabian Sukuk market saw significant growth during the previous 5 year period, while still trailing Malaysia, the largest Sukuk market in the world, with Sukuk financing in Malaysia accounting for 5.3% of the total financing in the country compared to just 1.3% for Saudi Arabia. In 2015, as a proportion of GDP, Malaysia’s Sukuk financing accounted for 7.0% compared with 6.0% in 2010, while the 2015 figure for Saudi Arabia’s is 1.3% and only 0.7% in 2010. This implies that Saudi Arabian Sukuk market still holds significant potential for development.

Figure 15: Sukuk financing as a % of GDP/Sukuk as a % of total financing

Source: Aljazira Capital report, 2010
Moreover, in terms of lack of long term financing avenues, it notable that Saudi Arabia’s short-term bank lending accounted for approximately 58.0% of total bank lending during that period. There is great potential for the Sukuk market to emerge as alternative mode of long-term financing given that most Sukuk are issued for periods exceeding five years.

Table 2: Comparison of Saudi and Malaysian Sukuk Markets

<table>
<thead>
<tr>
<th>Comparison Factor</th>
<th>Saudi Arabia</th>
<th>Malaysia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shariah schooling</strong></td>
<td><strong>Hanbail, AAOIFI Shariah standard is not banding</strong></td>
<td><strong>Shaifi, AAOIFI Shariah standard is not banding</strong></td>
</tr>
<tr>
<td>Shariah governance model</td>
<td>Passive approach</td>
<td>Pro-active approach</td>
</tr>
<tr>
<td>Total value of Sukuk issuance</td>
<td>USD$7.8 billion (2014)</td>
<td>USD$20 billion (2014)</td>
</tr>
<tr>
<td>Global % of Sukuk issuance market share (2015)</td>
<td>10%</td>
<td>70%</td>
</tr>
<tr>
<td>Number of Sukuk issues</td>
<td>68</td>
<td>1679</td>
</tr>
<tr>
<td>Date of modern market emergence</td>
<td>2009</td>
<td>2002</td>
</tr>
<tr>
<td>Sukuk issuance account compare to GDP rate</td>
<td>1.3%</td>
<td>7%</td>
</tr>
<tr>
<td>Types of Sukuk structures most used</td>
<td>Wakalah: 44%</td>
<td>Murbahah: 76%</td>
</tr>
<tr>
<td></td>
<td>Hybrid: 23%</td>
<td>Musharakah: 10%</td>
</tr>
<tr>
<td></td>
<td>Ijarah: 14%</td>
<td>Wakalah: 9%</td>
</tr>
<tr>
<td></td>
<td>Murabahah: 12%</td>
<td>Hybrid: 5%</td>
</tr>
<tr>
<td></td>
<td>Mudarabah: 6%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Musharakah: 1%</td>
<td></td>
</tr>
</tbody>
</table>

*Sources: Moody’s, securities commissions Malaysia, Bursa Malaysia, Zawya, IFIS, Tadawul and developed by the author (2015)*

The comparison above shows that, although Malaysian Sukuk market currently occupies the leading role in the global Sukuk market and is seeking to maintain its position, the Saudi Arabian Sukuk market has the potential to develop quickly and to challenge Malaysia’s position. Both markets are in competition for the position of global Sukuk leadership. There are major differences between Malaysia’s market and Saudi Arabia’s market. The differing Shariah schools and interpretations play a crucial role in structuring the market positions. Clearly, the total value of Sukuk issuance in Malaysia currently outperforms the Saudi market. Of great interest is that, while the same Sukuk structures and terminologies are used in both markets, the different interpretations of the
Malaysian and Saudi Arabian Shariah schools means that the risk/return performance of the same structures may differ between these markets. For example, some Sukuk that are tradable in Malaysia are not tradable in Saudi Arabia, and hence bear greater liquidity risk in the Saudi market. The impact of Sukuk structure on Sukuk risk profiles is discussed in a number of studies, including Alsayed (2013), Abdul Jalil & Abdul Raham (2012), Saad & Mohamad (2012), Muhamed & Radzi (2011), Wilson (2008), Zaidi (2009) and Tariq and Dar (2007). Despite differing Shariah interpretations and different standards adopted, Sukuk investors are targeting Sukuk as attractive Shariah compliant instruments. This is evidenced by the rapid growth and investor demand for Sukuk in both markets.

1.6 Issues surrounding Sukuk

As an emerging financial instrument, many concerns surrounding Sukuk have arisen. Because Sukuk have only recently appeared this is a natural expectation. On the other hand it is important that these issues are addressed with more analysis and research.

Since late 2007, the Sukuk market has been adversely affected by two major events (Weddernurn-Day, 2010). First was the announcement by AAOIFI on the permitted Sukuk structures that adversely affected scholars’ acceptance of certain types of Sukuk. Second, the impact of the 2008 global financial crisis on sovereign Sukuk issuance that contributed to the fall in Sukuk issuance.

In the literature it has been observed that many theoretical issues concerning Sukuk have not yet been resolved. Christophe, Turk-Ariss and Weill (2011) report that Sukuk as an instrument has issues not sorted out yet. The root of this issue is whether Sukuk really differ from conventional bonds. Miller et al. (2007) and Wilson (2008) argue that Sukuk returns are structured to replicate conventional bond characteristics, while others, such as Cakir and Raei (2007) take an opposite view, noting the empirical results showing that Sukuk are different from bonds because they present diversification benefits in terms of risk reduction when added to a portfolio of fixed income securities. Further, Wilson (2008) highlighted that Sukuk differ from conventional bonds in that Shariah issues in Sukuk play a crucial role because they can lead to default risk.

Shariah concerns include the problems that may arise facing Sukuk issuance in secular jurisdictions. This occurs when the Sukuk contract chooses a governing law that does not incorporate any aspect of Shariah. In this case the parties involved in the transaction can choose to include additional clauses in the contract to take account of Shariah. Consequently, any breach of the contract can be punished by the courts, and a secular jurisdiction is thus able to take account of local law (Al Elsheikh and Tanega, 2011).

In the case of Shamil Bank of Bahrain v Beximco Pharmaceuticals Ltd (2004) the Court of Appeals noted that it was required to consider the commercial purposes under which a contract was written when interpreting it, despite the fact that the law governing the contract must be national law and that the courts would not rule on the principles of Shariah. More importantly, the ruling also stated that a contract must choose to abide by the laws of a specific country, and cannot be subject to Shariah alone. Note also that the parties must abide by national laws in addition to Shariah, and that in any situation where Shariah conflicts with the local law,
priority must be given to the latter. There may also be difficulties in specifying the exact principles that the parties must abide by, given the lack of any single compilation of *Shariah* principles (McMillen, 2007).

In general, those issues may be categorised into three perspectives: *Shariah* issues, default risk and risk measurement within the context of Islamic finance theory. Thus, Sukuk require more research to be a reliable secured investment instrument.

*Figure 16: Sukuk issues categorisation*

1.7 Research statement

The literature relating to Islamic debts has predominantly focused on the legal, theological and philosophical aspects of Islamic law and jurisprudence, on the basic concepts and principles, and the validity of how debts are conducted in Islamic finance within the general framework of Islamic debt (Mirakhor, 1996; Cakir, 2007; Dar and Tariq, 2007; Wilson, 2008; Ashhari, 2009; Somolo, 2009). So far, to the best of the author’s knowledge, only a minimal amount of empirical research has been conducted looking at the relationship between Sukuk structure and financial performance.

Considering the recently recorded defaults of some Sukuk securities, market players may need to consider the principle differences in Sukuk structuring. This is an important matter in order to reform the market and to analyse the implications of the different Sukuk structures in the event of restructuring during a default. Especially important is the debate between the asset-based and asset-backed nature of Sukuk, where it is likely to impact many restructuring issues in the market. As asset-based Sukuk essentially exposes investors to the credit risk of the originator, in that case the restructuring process is aligned with that of unsecured instruments. Moreover, the rapid expansion that has been witnessed on the Sukuk market against the complexity of Sukuk structuring leads to questions on how those structures affect Sukuk performance and reflect Sukuk growth.

1.8 Research aims and objectives

The research objectives are designed as follows:

- To examine how Sukuk markets have developed and progressed.
To evaluate the risk/expected return performance of Sukuk compared to their counterpart conventional bonds.

To identify the common Sukuk structures in the global Sukuk market.

To identify, measure and analyse the key financial Sukuk risks, including credit risk, maturity risk, investment rate risk, and structure risk.

In particular, to evaluate Sukuk structure risk as a risk factor in Sukuk pricing.

To demonstrate how the understanding of Sukuk risks, including Sukuk structure risks, may contribute to minimising Sukuk risk from the standpoint of issuers and investors.

1.9 Research questions
The research attempts to answer the following questions:

- What are the key risk factors in pricing Sukuk?
- What is the impact of Sukuk structure risk in Sukuk pricing?
- How could a greater choice of Sukuk structures increase the validity and value of Sukuk?
- On the basis of the unique, but still limited data set available for this study, what is the empirical evidence that the theoretically motivated risk factors identified in this study are actually priced in the market?

1.10 Research methods
This research follows the deductive method. However, difficulties are encountered when applying the deductive method to the study of Sukuk. Therefore, it can be said that, while the research follows the principles of the deductive method, the conclusions drawn from the study are less conclusive than they would be, for example in the exact sciences.

1.10.1 Steps in applying the deductive method:
1) Hypotheses concerning Sukuk are developed from two sources:
   a) The extensive review of the existing academic literature on Sukuk.
   b) The general background knowledge of the Sukuk markets studied.

The hypotheses, therefore are essentially expectations of what we expect to find when we look at the data.

The degree of confidence in these hypotheses or expectations is less than is usual in the study of conventional finance. This is because Sukuk markets have a very short history and are still very under-developed. For example, it might be hypothesised that, because Sukuk are asset-backed or asset-based they are safer than conventional bonds. In that case it would be hypothesised that the rate of return on Sukuk should be lower than that of conventional bonds, due to the lower level of risk. However, it can also be argued that the many uncertainties concerning Sukuk, such as whether a particular Sukuk issue is Shariah compliant or on the legal rights of investors in the case of default, may mean that Sukuk are actually more risky than conventional bonds. In that case the hypothesis would be that the rate of return on Sukuk would be higher than that of bonds. It is a matter of judgement which of these conflicting hypotheses is the most plausible.

In the hypothesis development of this thesis the author applies his own judgement as to which hypotheses are the most plausible. Clearly, not all experts in Islamic finance will necessarily agree with these choices.
2) The second step in the deductive method is empirically testing the hypotheses. The data will either support the hypothesis (the hypothesis is corroborated) or the data will undermine the hypothesis (the hypothesis is refuted).

Hypothesis testing in the social sciences is less clear cut than in the exact sciences. In particular, in the study of Sukuk “corroborated” means only that the hypothesis has obtained some degree of empirical support, while “refuted” means only that our confidence in the hypothesis has been weakened to some extent.

The major problem in the second step of the deductive method as applied to Sukuk is that empirical data on Sukuk is very limited. The Idealratings back data used in this study is currently the most extensive data set available for Sukuk. However, it is still the case that the empirical testing is limited. The short history and limited number of trades in the Sukuk market means that the data required for rigorous empirical testing simply does not exist.

3) The third step in the deductive approach is evaluating the hypotheses in the light of the results of the empirical tests. This leads to further hypothesis development, where new hypothesis are proposed or existing hypotheses revised. It may also lead to further research questions.

4) Well-corroborated hypotheses may be applied in practice, and will be of value to many stakeholders, including investors, bankers, corporate and sovereign issuers, regulators and governments.

While there are difficulties in applying the deductive method to the study of Sukuk, the principles underlying the deductive approach are sound.

1.11 Research rationale and motivation

There are several reasons for the remarkable growth of the Sukuk market, including:

- Sukuk are Shariah compliant financing instruments preferred over conventional bonds by Muslim investors.
- The huge wealth of Gulf countries, in particular Saudi Arabia, is producing a substantial demand for investment opportunities in instruments such as Sukuk.
- Saudi sovereign and corporate entities are looking to diversify their financing options to minimise risk and satisfy their Muslim shareholders (Alsaaeed, 2012, Watheeqa, 2010).
- Sukuk can offer long term financing solutions with attractive terms.
- Sukuk are financing instruments securitised on tangible and intangible assets.
- Sukuk have the potential to become liquid instruments due to their tradability.
- Sukuk offer an alternative mode of financing to traditional bank financing and equity financing.
- The global acceptance of Sukuk is attracting international financial institutions to the industry, adding value to the market through innovation (Alsaaeed, 2012).

Research on Sukuk has attracted the attention of many academics, and the demand for Sukuk research from practitioners, scholars, regulators, governments and quasi-governmental bodies is immense and growing.
Indeed, the development of Islamic finance is regarded as one of the most significant developments in finance in recent decades.

The rationale of this research is to add value to the Sukuk market by contributing to the understanding of the factors that determine Sukuk risk. A better understanding of Sukuk risk will help with developing and innovating long term types of Sukuk, with feasible financial features such as risk/return profiles that are attractive to both issuers and investors. With innovative structuring, competitive rules and regulations and the appropriate technical infrastructure, Sukuk could be a major driving force in the economic progress and development of Saudi Arabia and other Islamic countries (Hassan and Mahlknecht, 2011).

1.12 Research content and structure
This thesis is divided into nine chapters. Chapter 1 concludes the introduction.

Chapter 2 discusses the principles of Islamic finance in depth. The discussion includes, a comparison between Islamic finance and conventional finance, the principles of Islamic finance, the growth of Islamic finance around the world, risk management in Islamic finance, and how Islamic finance faced the recent finance crisis. The rationale for this chapter is to build on the introductory material in Chapter 1 to give a wider perspective on the subject.

Chapter 3 presents the different kinds of Sukuk structures and mechanisms. Sukuk are more flexible than conventional bonds, in that there is great scope in Sukuk for innovative structures to meet the needs of issuers and investors. The different kinds of Sukuk structure are presented in detail in this chapter.

Chapter 4 discusses Sukuk risks. Sukuk risks can be classified in a number of different ways. These different classification schemes are discussed in this chapter. It is argued that Sukuk structure risk, a risk that has hitherto not been discussed much in the literature, is one of the main risk factors that should be taken into account when evaluating Sukuk risk.

Chapter 5 discusses research methodology and expands on the discussion of research methods presented in Chapter 1.

Chapter 6 discusses the data used in this research study.

Chapter 7 presents an empirical analysis that updates and extends the empirical analyses already undertaken on Sukuk. These studies are based on the analysis and comparison of Sukuk and conventional bond indices.

Chapter 8 presents the empirical research using the unique Idealratings Sukuk referred to in Chapter 1 and presented in Chapter 6.

Chapter 9 concludes the thesis.

Further descriptive background material is contained in the Appendices.
1.13 Conclusion
Despite Islamic financial growth and penetrating the global market, the majority of Islamic finance instruments have not developed and grown as fast as Sukuk. Sukuk are an innovative product with its own features, principles and methods that are different from conventional bonds. This chapter introduces, and presented an introduction and overview of Islamic finance, the meaning of Sukuk, how Sukuk differ from conventional bonds, some background on the Saudi Arabian and Malaysian markets, a statement of research aims, objectives and motivation and rationale, and the main research contribution of the thesis. The remaining chapters present the research topic in detail.

***
CHAPTER 2
AN INSIGHT INTO THE ISLAMIC FINANCE SYSTEM

2.1 Introduction

The purpose of this chapter is to present a comprehensive background to the Islamic finance system. This chapter extends the introduction to the general theory of Islamic finance presented in Chapter 1. It addresses the concept of Islamic finance, its features, market developments, common methods of Islamic financing and risk management in Islamic finance.

2.2 Islamic finance concepts

The first Islamic finance institutions in the modern era were Islamic banks, designed to comply with the ethical principles and provisions of Islamic law, which is known as Shariah. This law is derived from the Holy Quran and Sunna (the speech of Prophet Mohammed peace and blessings of Allah be upon him).


The role of Islamic financial institutions becomes problematic, given the prohibition on charging and receiving interest. What then, should be the role of Islamic finance in an interest-free financial system? The answer is that instead of engaging in interest-based transactions, Islamic providers of finance should invest in viable projects with reliable borrowers. If the project succeeds, the profits are shared; if it fails, losses are suffered.

Fundamental to an understanding of Islamic finance is the Islamic theory of money. Money value in Islam has an exclusive frame of interpretations and originality different from other financial systems; it is the main driver of Islamic finance principles.

2.3 Money in Islam

Beyond the Islamic finance concept, it is interesting to address the money value theory in Islam because it is a fundamental driver in designing Islamic finance instruments. This explains why the Islamic finance system exists in the financial industry. Money is considered to be a vehicle, or value instrument bringing benefits for its holder in the context of exchanging values with others.
The debate surrounding the value of money is deeply entrenched in finance and Shariah scholars. Adebayo (2010) discussed the capitalist tendency of giving money the status of a commodity, where the interest rate is regarded as the price of this commodity. He considers money in Islam as a platform of exchange and a store of value and so as a representative of assets and not a genuine asset in itself. Consequently, money is means of securing economic satisfaction as it bears some, but not all qualities attributed to assets. Ayub (2007) discussed the money value in Islamic finance. He attributed it to the valuation of the credit period based on the value of the goods or their usufruct, and as being different from the conventional concepts of “opportunity cost” or “time value”. He discussed the Shariah scholars’ concerns of the credit price of a commodity as a replacement of money. In Islamic finance, the time valuation of money does not exist in the exchange of monetary values, loans or debts. However, it is possible only in business in the trade of goods and services. In addition, he stated the concept of time value of money in the context of the Shariah is also entrenched in the Shariah prohibitions on mutual exchanges of gold, silver or monetary values in the form of a deferred sale. This is because a person may obtain the opportunity by using the currency which he has received but he has not given its counter value from which the other party could take a benefit.

Therefore, since all goods possess the quality of depreciation by the lapse of time, money should therefore adopt this feature as well. Once this feature is imputed to it, as it should be, nobody would be interested in holding it back. It would be put back into circulation as soon as it was received, causing more demand on available products (that are bought and sold) which will further boost production to increase supply, leading to more employment and higher wages. Higher wages would cause higher demand and more supply. It is this way an act of unfairness to hoard money, believing that idle money should retain its purchasing power through the receipt of fixed interest payments.

Ahmad and Hassan (2006) presented three reasons why money should not be considered to be a commodity. These are that: (i) money has no intrinsic value like a commodity. It can only be used to buy some goods or services, in contrast to a commodity which can be used directly without exchanging it for something else; (ii) commodities have different in qualities and features compared to money. Money has the sole quality that it is a measure of value or vehicle for trade and exchange. Hence, all money units are of the same grade and they are exactly equal in this respect; and (iii) money cannot be pin-pointed in a transaction of exchange as against selling and purchasing transactions which are effected on an identified commodity. In the Islamic theory of money value it would be wrong to exempt money from the law of depreciation or a store of value since money itself cannot perform any function; money only becomes useful when it is exchanged for a real asset or used to buy a service.

As early as Fisher (1911) and later Ingham (2004) it was noted that in capitalist theory there is no difference between money and commodities as far as trade transactions are concerned. Both are treated on a par and can be sold at whatever price the parties agree on. For them selling £100 for £110 is the same as selling a box of potatoes costing £100 for £110.

Asutay (2010) justified the Islamic theory of money by attributing to Islamic finance principles such as the importance of moral behaviour in the market place, whereby the market is a tool for producing economic outcomes compatible with social justice. This is in contrast with the rationalist, self-maximising and
productivity-oriented capitalist market economy. He explained that Islamic finance theory differs from the capitalist theory as money and commodities have different natures and considerations. For example, money has no intrinsic value but is only a store of value or a vehicle of exchange; it has no capacity to fulfilling human needs by itself, unless converted into commodities.

Thus, a commodity can fulfil human needs directly, and can have different features while all money is the same in the sense that a new note of £50 is exactly equal in value and function to an old note of £50. Also, commodities are transacted or sold by pinpointing the commodity in question to given certain specifications.

Furthermore, the growth and development of the Islamic finance system came from its theory towards the value of money and this appeared essentially as a product of its promotion of justice in its transactions (Adebayo, 2010). Precisely, the principles of the Islamic finance system are focused on the benefit of society, and for the individuals or groups in that society. Justice has therefore been considered an actual instrument to achieve it. This implies the purpose of Islamic finance theory. It creates a challenge for Islamic finance institutions to apply best practices of those principles to Islamic finance products and instruments such as Sukuk.

Therefore, in the Islamic finance context, money cannot be used to trade on itself, and when there is a need to exchange money in the case of borrowing or lending, the payment on both sides must be equal. In other words, money is treated as "potential" capital (Asutay, 2010). It is considered as actual capital when associated with other resources to enable a productive activity. Islam recognises the time value of money, but only when it acts as capital, not when it is "potential" capital. This explains the reason behind prohibited dealing with interest (Riba) in Islamic finance. Interest is used as a target in the conventional system but Islamic finance is designed to target profit from trade transactions. Profit against interest is the differential purpose of the two systems. In fact, the difference lies among the risk factor and gain factor; while parties share both risk and gain in trading. Risk lies solely on the borrower only in Riba operations [God has permitted sale (bai) and prohibited Riba] (2:275). Profit against interest summarises the different purposes of the two systems. The table below explains in more detail the comparison between interest and profit:

<table>
<thead>
<tr>
<th>Table 3: Difference between interest and profit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interest</strong></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Return on capital</td>
</tr>
<tr>
<td>Interest is guaranteed</td>
</tr>
<tr>
<td>Fixed return</td>
</tr>
<tr>
<td>Return on deposit</td>
</tr>
<tr>
<td>Interest is fixed at the time of contract and is not based on profit or loss</td>
</tr>
<tr>
<td>The interest rate is based on the amount of money involved</td>
</tr>
<tr>
<td>Payment of interest is fixed as promised without taking into account the profitability of the project managed by the other party</td>
</tr>
<tr>
<td>The amount of interest paid does not increase even if the profit obtained is manifold</td>
</tr>
</tbody>
</table>

*Source: created by Asutay (2010) and developed by author (2016)*
This shows that the root of Islamic finance theory concerns the concept of money and its treatment in Islamic theory. This is the answer to the question raised regarding the essential differences between the two counterpart financial systems.

2.4 Features of the Islamic financial system

Islamic finance implies a connection between investors, banks and traders through a risk sharing mechanism. This feature shows a major difference between the Islamic system and the conventional. The Islamic finance system is Islamic in that it is guided by Islamic law, which defines the rules and guidelines for the appropriate operational of the Islamic system.

Akram, Rafique, and Alam (2011) discussed the Islamic finance features and summarised them into four categories as follows:

1) Risk sharing
2) Materiality
3) No exploitation
4) No financing for sinful activities.

Thus, the risks are dispersed between all stakeholders of the investment deal, such as the investor or capital provider, the bank and client, and materiality means that a real transaction must exist and avoid exploitation for all parties. Also, financing sinful activities is clearly in contravention of the Islamic rules.

In profit and loss sharing transactions (PLS), the profit and loss sharing ratio is pre-determined. Profit and loss sharing in Islamic banking may serve to eliminate inflation, unemployment and poverty.

The figure below shows the connections between those features that should be adopted in all Islamic finance instrument e.g. Sukuk.

Figure 18: Islamic finance features
These features of the Islamic finance system require a close link between financial and productive flows in the society. This connection helps to channel funds into real economic activities. This has the effect of protecting the Islamic financial system from risks associated with extreme financial leveraging and speculative activities.

It is required for Shariah compliant instruments to reflect these features in reality. For example, consider Sukuk Murabahah, which is considered as a debt based certificate. It is a transaction whereby existing assets are purchased and then resold to the client with a mark-up. For example, a bank may purchase inventory assets on behalf of a firm and sell those assets to the firm, with immediate delivery, with payment in instalments with a mark-up over cost. Murabahah transactions are practised by Islamic financial institutions under such various names as: mark-up, cost plus financing, production support programmes, short-term financing or sale-purchase contract (Ahmad, 1993).

The full picture of the financing methodology of Murabahah presents sharing risks between the buyer and purchaser. The transparency of Murabahah commodity finance is essential for it to be in compliance with the Shariah. This shows that Islamic finance supports the economy with productive demand to supply the bank’s client’s financial needs. The figure below illustrates this structure in simple context. On the other hand, Murabahah financing form can be observed that is similar to a conventional interest-based lending structure. However, a major difference exists between Murabahah and interest-based lending is that the mark-up in Murabahah is obtained towards work that incurs costs and efforts to provide the service. For example, in seeking and purchasing the required goods at the best price. The amount mark-up is not determined by the time period. Thus, if the client fails to make a deferred payment on time, the mark-up does not increase from the agreed price owing to delay. Also, the Islamic bank owns the commodity between the two sales; this implies that it carries the associated risks (Iqbal and Mirakhor, 1999).

Profit and loss sharing (PLS) dominates the theoretical literature on Islamic finance in contrast to the extent to which it is applied in practice. Currently, Murabahah and other debt based products are dominant in Islamic finance. Murabahah represent around 80% of the Islamic finance market compared to 20% for PLS products (Dar and Presley, 2000). Debt based products such as Murabahah in some respects are close to conventional financing methods. One criticism of Islamic finance is that Islamic finance products tend to be created by adapting existing conventional products rather than developing entirely new Islamic products.

Hanif & Iqbal, (2010) categorised Islamic modes of financing into two themes, Shariah compliant and Shariah based. The table below displays Islamic modes of financing under this classification.

**Table 4: Classification of Islamic modes of financing**

<table>
<thead>
<tr>
<th>Shariah based</th>
<th>Shariah compliant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musharaka</td>
<td>Murabaha</td>
</tr>
<tr>
<td>Mudaraba</td>
<td>Ijarah</td>
</tr>
<tr>
<td>Diminishing Musharakah</td>
<td>Bai Salam</td>
</tr>
<tr>
<td>Muzara’a (Sharecropping)</td>
<td>Bai Muajjal</td>
</tr>
<tr>
<td>Musaqa (Irrigation)</td>
<td>Istasna</td>
</tr>
<tr>
<td>Mugharasa (Agriculture or Plantation)</td>
<td>Wakala (Agency)</td>
</tr>
</tbody>
</table>

Source: Hanif and Iqbal, (2010) and developed by Author (2016).
Hanif and Iqbal, (2010) explained Shariah compliant products as the modes of financing where the return to the financier is predetermined and fixed but within Shariah constraints. The financing methods harmonising the operations of Islamic finance with conventional finance include Murabaha (cost plus profit sale), Ijarah (a rental arrangement), Bai Salam (spot payment for future delivery), Bai Muajjal (sale on deferred payment), Istasna (order to manufacture) and Wakala (agency). They are all Shariah compliant products. On the other hand, Shariah based transactions are the financing modes incorporating the Shariah concept of profit and loss sharing. These contracts include Mudaraba (partnership of capital and skill), Musharaka (partnership in capital), Diminishing Musharaka (Islamic housing finance), Muzara’a (sharecropping), Musaqa (irrigation) and Mugharasa (agriculture). Under Shariah based profit and loss sharing modes of financing, returns to the financier are not fixed in advance. Rather it depends upon the outcome of the project. However, loss is to be shared according to capital contributions.

It can be concluded that the major difference between conventional and Islamic financing lies in the Shariah based modes of financing (Hanif, 2011).

*Figure 19: Simple Murabaha Structure*

A fundamental feature of Islamic finance is the fact that Islamic finance is focussed on serving the financing needs of the real economy. This is due to the asset based nature of Islamic finance transactions. In conventional finance there are no restrictions on the purposes for which financing can be raised. For example, conventional finance allows borrowing for leveraged speculation in securities markets. This may assist in explaining the occurrence of bubbles and crashes in the stock market, for instance the crisis on the Shanghai Stock Exchange (SSE) in August 2015 where the market index lost 1400 points within three days. Abdullah (2016) explained that the difference between the real economy in China and financial economy contributed effectively in this crisis, noting that GDP growth was recorded at the relatively low figure of 7.7% (www.world Bank.com, dated
31st Dec 2015) compared with a rise in the stock market of 150% during the year from June 2014 to June 2015, with the average PE ratio of 70:1 in contrast to a PE of 16:1 for the Dow Jones Stock index. This implies that applying the Shariah principles that financing should be asset based and anchored in the real economy may reduce the abuse of the stock market as a way of gambling, and move it towards its main purpose of providing finance to the real economy.

Elfakhani and Hassan (2007) emphasise that Islamic finance structures are based on profit sharing partnership schemes. In addition, the most important element of the Shariah Law is forbidding dealing in three things: Riba (interest), Maysir (gambling and pure games of chance), and Gharar (selling something that is not owned or that cannot be described in accurate details such as the type, size, and amount).

In this light, Asutay (2010) states the features of Islamic finance in terms of an actual moral, equitable distribution in resources and social fairness, with risk-sharing as a component of Islamic trade rather than the risk-transfer of conventional finance. He discussed these features and categorised them into six elements as summarised below. In addition, the other features stated by other researchers such as Iqbal (1997), Elfakhani and Hassan (2007), Wilson (2007), and Akram et al. (2011) have been added on.

**Figure 20: List of Islamic finance features**

- Prohibition of interest (Riba, Usury)
- Prohibition of fixed return
- Privilege of money value
- Profit Loss Sharing (PLS)
- Participatory nature in financing methods
- Avoidance of Gharar
- Avoidance of Maysir (gambling, pure games of chance)

As far as the prohibition of interest is concerned in Islamic finance theory, questions arise concerning the justification of this prohibition. It is argued that prohibition of interest (Riba, Usury) provides for a stable and socially efficient economic environment. In addition, interest is unfair in that it affects borrowers and lenders alike. The borrower pays the interest and repays the capital as well as bearing any losses from the use of these funds. The lender may lose the value of capital when applying interest and encourage the borrower to defer the payment. On top of this, interest leads to money being made from money, an unacceptable practise in Islamic finance. In Islam, money is an exchange instrument that has no value in itself. The second feature is prohibition of fixed return. This is driven by Islamic finance rules that do not allow capital to gain a fixed return without
carrying any risk. In addition, it is shared through an economic activity in the real economy rather than in the financial economy. Also, Islamic finance aims at productive economic activities or asset based financing over the debt based system. The third feature is the Islamic theory of money value. The wisdom behind it is that money does not have any inherent value in itself and therefore money cannot be created through the credit system. This reflects the value of money in Islam as well as bringing another rationale for the prohibition of interest. The fourth feature is profit and loss sharing (PLS). This shows the nature of the relationship between capital and work in the Islamic finance industry. In fact, this may be considered the best method of establishing justice between work effort and return, and between work effort and capital. The fifth feature is the participatory nature in financing methods. In fact, the participation methodology is reflected in PLS theory; Islamic financial instruments, capital and labour merge to establish a partnership. The sixth feature is avoidance of Gharar. This is considered a critical feature and means selling something that is not owned or that cannot be described in accurate details such as the type, size, and amount. Al-Dareer (1997, p7) defines Gharar in jurisprudential terms under three headings:

“First, Gharar applies exclusively to cases of doubtfulness or uncertainty, as in the case of not knowing whether something will take place or not. The definition by Ibn Abidin is a case in point: Gharar is uncertainty over the existence of the subject matter of a sale. A second view holds that Gharar applies only to the unknown, to the exclusion of the doubtful. This view is adopted by the Zahiri School. Thus, according to Ibn Hazm, Gharar in sales occurs when the purchaser does not know what he has bought and the seller does not know what he has sold. The third view is a combination of the two categories above; Gharar here covers both the unknown and the doubtful, as exemplified by the definition proposed by Al-Sarakhsy who states that Gharar obtains where consequences are concealed. This is the view favoured by most scholars”.

More simply, El-Gamal (2001, p5) defines Gharar as “... the sale of probable items whose existence or characteristics are not certain, due to the risky nature which makes the trade similar to gambling”. In other words, the Gharar is anything whose consequences are hidden. In finance, Gharar is exists in derivative transactions, such as forwards, futures and options, in short selling, and in speculation. In Islamic finance, most derivative contracts are not Shariah complaint contracts because of the structuring of ambiguity and uncertainty involved in the future delivery of the underlying asset. To explain further the concept of a purely speculative derivative, it is a type of contract where neither party is hedging a pre-existing risk and a contract that, in many ways, is tantamount to a gambling practice that, arguably, made a significant contribution to the recent financial crisis (Nicholas, 2012). However, there is a debate among Shariah scholars on the acceptability within Islamic law on the use of derivative contracts within Shariah constrains. The challenge here is how to structure the asset that underlies the contract without falling into the practice of Gharar. Current conventional derivative trading frequently involves leverage and resembles a gambling game (Maysir). Innovation is required to create a new class of derivatives contracts that adhere to Shariah rules, in particular to ensure that such contracts require delivery of the underlying real asset. Conventional derivatives contracts are traded where the trader has no intention of taking delivery and is just speculating on future price movements. Also, conventional trading in derivatives is highly leveraged, and hence implicitly involves interest.
The seventh feature in Figure 3 is avoidance of *Maysir* (gambling, pure games of chance). The *Maysir* is a sort of gambling conducted on money using gaming instruments. Al-Dareer (2012) argued that *Maysir* is considered a type of *Gharar* and is not a special class in its own right. The rationale behind the prohibition of *Maysir* is that gambling contains high risk in its transactions: some people win a large amount of money, but others suffer from a loss of money, and sometimes face bankruptcy. This leads to great financial and social problems. Also, those games of chance and gambling are unnecessary for society, because they cannot add any surplus to societal wealth.

The IFSB explained the concepts of Islamic finance by creating the following model of the essential features of Islamic finance.

*Figure 21: Essential features of Islamic finance*

<table>
<thead>
<tr>
<th>Overarching Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Towards achieving the objectives of <em>Shariah</em> rules (<em>Maqasid al-Shariah</em>):</td>
</tr>
<tr>
<td>✔ Protection for religion, life, lineage, intellect and wealth</td>
</tr>
<tr>
<td>✔ High ethical values such as justice, fairness, trust, honesty and integrity</td>
</tr>
<tr>
<td>✔ More equitable distribution of wealth</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Materiality and Validity of Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economically productive underlying activities</td>
</tr>
<tr>
<td>Avoidance of interest-based transactions</td>
</tr>
<tr>
<td>No involvement in illegal and unethical activities</td>
</tr>
<tr>
<td>Genuine trade and business transactions</td>
</tr>
<tr>
<td>Avoidance of speculative transactions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mutuality of Risk Sharing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entitlement of profit contingent upon risk taking</td>
</tr>
<tr>
<td>Honouring both substance and form of contract</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Embedded Governance</th>
<th>Disclosure &amp; Transparency</th>
</tr>
</thead>
</table>

*Source: IFSB, Islamic finance global financial stability, 2010*

The Islamic finance features are inherited from *Shariah* law and have been developed during the life of the Islamic finance industry. The Islamic financial services industry continues its double digit growth, led by Sukuk where new jurisdictions are entering the market and where continual innovation is taking place.

### 2.5 Brief history of the Islamic finance system

From a historical point of view, the main clients for Islamic finance are the Muslim people, which are estimated today at around 24% of the world’s population (See Appendix A: the Muslim world map). They are the major drivers for creating the growth of Islamic finance. In spite of this, the expansion of Islamic finance as an industry is quite modern. According to Iqbal and Molyneux (2005), the age of the modern Islamic finance
system is measured as being around 40 years. This explains the reason behind the need to develop Islamic finance. The figure below shows the history of Islamic finance and Islamic banking mentioned in previous research using Google software Ngram Viewer. It shows that Islamic finance has been highlighted from 1940 and the research on it increased rapidly afterwards, especially after 1980 and 2000.

Figure 22: Historical Record of Academic Research on Islamic Finance

This indicates the important contribution of research to the development of Islamic finance.

Islamic finance has experienced several essential moments in this history timeline. Iqbal and Molyneux (2005) state that the first individual attempt to introduce Islamic products, which attracted no interest, was in Egypt by Ahmed Alnajjar in the Egyptian town of Mit Ghamr in 1963, for the purpose of helping to reduce poverty. In 1972, the Mit Ghamr Savings project became part of Nasr Social Bank which, currently, is still in business in Egypt. Hanafy (2004) argued that the development toward introducing Islamic banking needed to have some attempts witnessed in the Middle East area. For instance, AlRajhi finance and Investment Company in Saudi Arabia started in 1958. The second development went from individual initiatives to group businesses establishing Islamic banks in the financial market. This began with the Islamic Development Bank in Jeddah, Saudi Arabia in 1973 and then with Dubia Islamic bank in 1975. After these attempts the expansion continued by establishing new Islamic banks in the Arabian Gulf region and the Islamic world followed later. Malaysia played a big role in the progress of developing Islamic banking in an Asian country. Azahari (2009) revealed that the first Islamic bank in Malaysia was established in 1982. This bank was called Bank Islam Malaysia, which was the result of persuading the prime minister about the necessity of Islamic banks in Malaysia to serve and offer Islamic compliant products for Muslim customers. The final and current movement is the innovation of Islamic finance instruments. For example, Sukuk, which arrived early in 2000 and are still developing to meet the liquidity management and investment opportunities in the Islamic finance market. The figure below presents the history timeline of the development of the Islamic financial system around the world.
Figure 23: Historical timeline of Islamic finance

Source: Islamic finance breakfast briefing, 2012

The figure below shows how Islamic banks were established historically.

Figure 24: A brief historical tracking of the establishment of Islamic banks and institutions

Source: KFH Research, 2013
2.6 Islamic finance market development

It is difficult to obtain exact figures on the size of the Islamic financial sector. Without doubt, it is small in comparison to the conventional financial sector but it is experiencing strong growth. Iqbal and Mirakhor (1999) report that Islamic banks grew from an asset base of $5 billion in 1985 to a level of over $100 billion in the late nineties.

The statistic for the Islamic finance industry’s growth shows a positive expansion in different aspects of the industry. Total assets increased from $1166bn in 2012 to $1267bn in 2013, representing 8.7% annual growth. However, the growth of 2012 has recorded a slowdown from 20.7% to 8.67% in 2013; the compound annual growth rate since 2006 was recorded as 16.02% (The Banker, 2015). This is considered a healthy performance overall. The figure below presents an overview.

Figure 25: Historical view of the development of total asset value of Islamic finance market

![Historical view of the development of total asset value of Islamic finance market](image)

Source: The banker, 2013 and developed by author, 2015

There many developments resulting from the entry of Islamic banks offering financial services to clients. This opens a competitive environment between Islamic banks and their counterpart conventional banks in terms of targeting customer satisfaction. The number of institutions reporting Shariah-complaint activities has grown to 349 institutions in 2013 from 307 institutions in 2012, equal to 13.68% growth in the new institutions (The banker, 2015). This shows how the financial markets respond to meeting the market needs.

The main driver for the Islamic finance expansion is the huge demand by Muslim clients around the world. Moreover, the resilience of Islamic financial institutions during the recent financial crisis and its aftermath brought more attention to Shariah-compliant products by non-Muslim investors and users as well. This increases the profitability platform of the industry. The figures comprising the ranking show ongoing high growth around the world. In 2013, the total Shariah profits of standalone banks were recorded as $14.7bn and the average return on assets for standalone banks was 1.43% (the Banker, 2015).
It may be argued that the rapid growth of the Islamic finance industry is not always high quality in terms of profitability due to it not growing in line with assets. The aggregate return on assets (ROA) ratio for Islamic banks was 1.51% for the four years 2009 to 2012 inclusive. By contrast, the ROA on conventional banks was 2.12% for the same period (The Banker, 2015). The figure below presents the ROA of a sample of Islamic finance markets. It includes Qatar, Saudi Arabia, Turkey, Malaysia and Iran.

*Figure 26: Islamic Banks: Return on assets evolution*

![Image of ROA chart for Islamic banks](source)

On the profitability side, the Islamic finance markets have recorded the profit ratio differently. While the profit ratio in the Gulf Cooperation Council (GCC) countries is (27.73%) and Asia (19.24%), the profit has declined slightly (-3.42%) in Africa. However, the biggest decline was in Australia, Europe and America (-60.33%) (The Banker, 2015).

*Figure 27: Regional assets growth*

![Image of regional assets growth chart](source)
In order to achieve mature market growth, Islamic banks will need to innovate in three dimensions: products, services and internal process, which need to be streamlined. Increased profitability will be a direct result of the movement towards achieving improvements in these dimensions.

The example of Sukuk shows the extent to which Islamic financial products have spread around the world. Sukuk are firmly entrenched in the global Islamic capital market due to the interest of investors. The global Sukuk market has seen substantial consolidation in the light of the 2008 global financial turmoil and credit crunch, specifically in the last 18 months after growing by around 48 per cent a year during the period 2003-2007 (Zawya, 2014). The Sukuk market, however was not spared from the impact of the global credit crisis. Based on data from Zawya’s Sukuk Monitor for 1Q of 2009, global Sukuk issuance in 2008 dropped by 55 per cent to $15.4 billion from 2007. Issuance continued to decline, standing at $7.4 billion for H1 2009, 33 per cent less than H1 2008. However, generally Sukuk outperformed the benchmarks after the 2008 financial crisis. Its performance suffered again post-2012, a contributing factor being that investors’ risk appetite has increased and it has been recorded that more investors are relocating funds from Sukuk to equities (Zyawa, 2014).

*Figure 28: Sukuk Average growth rate*

![Sukuk Average growth rate](image-url)
Overall, the Sukuk markets have reached new heights over the past few years, accompanied by a wider issuer base, more cross-border activity and more innovative issuances (Global Sukuk report, 2014)

The expansion in the Sukuk market bridges the gap in liquidity management in the Islamic finance industry. Abdul-Rahman (1999) stated that the major problem facing the Islamic finance trade is a lack of Shariah complaint liquidity instruments and that this causes Islamic banks to not have enough liquidity to meet any mismatch of the term structure (maturity dates) of assets and liabilities. This implies the necessary position of the Sukuk market to be used as a liquidity platform to mobilise assets and trade. This underpins the contribution of this research into Sukuk, which, by enhancing the literature on the risks of Sukuk structures assists in the decision making of issuers and investors in Sukuk.

2.7 Islamic finance common products

Because of avoidance of Riba in Islam, Islamic banks have had to develop financial products which are not in conflict with the Shariah. The task has been achieved by creating a number of special financial products (Ali and Ali, 1994). Therefore, Islamic banks design financial products based on Shariah law and in line with the domestic regulator. However, the innovation in Islamic finance products has been a highly considered topic recently with different views on it. Ahcene and Lin (2012) argue that the innovation in Islamic finance products is considered an off track approach due to it following the steps of conventional finance products. Others such as Monzer (2006) disagreed with closing the door on innovation in Islamic finance. He contributes with a study on innovation and risk management in Islamic finance. The innovation in Islamic finance, in his study, must be restricted with the Islamic rules on finance. However, the Islamic finance expertise thinks out of the box to bring a new class of instruments to fill the needs of the Islamic finance money mobilisation. This means the
innovation in Islamic finance has a financial perspective not a Shariah perspective. It helps to create new methods of finance as some products in the market such as Sukuk are considered a new instrument.

Islamic financing products may be classified into two branches, short term financing and long term financing products. Short-term products include equity mutual fund investments and real estate mutual fund investments (held over the short term). Long-term products are Sukuk and long term investment in real estate and stock portfolios. The substantial point is that these products are structured in accordance with the Shariah and should be applied in investment strategies that meet the Shariah conditions as well.

Due to the complexity of Shariah contracts a study by Hussain, Shahmoradi, and Turk (2015) contributed by classifying Islamic finance products into three broad categories:

- Debt-like financing structured as sales, which could be sales with mark up and deferred payments such as Murabaha or purchases with deferred delivery of the products such as Salam for basic products, Istisna’ for manufactured products, and leases such as Ijarah with different options to buy. Pure lending is allowed only when benevolent.

- Profit-and-loss-sharing (PLS)-like financing of two kinds: (i) profit-sharing and loss-bearing such as Mudarabah whereby the financier (investor, bank) provides capital and the beneficiary provides labour and skills. Here profits are shared, but losses would be borne by the financier who does not have the right to interfere in the management of the financed operation, unless negligence, misconduct, or breach of contract can be proven; and (ii) pure profit-and loss-sharing such as Musharakah where the two parties have equity-like financing of the project and would share profits and losses; and

- Services, such as safe-keeping contracts (Wadi’ah) as for current deposits, or agency contracts (Wakalah), which are also increasingly used for money market transactions.

The most the common Shariah models for Islamic finance products in the global Islamic finance market are summarised below:

**Mudaraba** (Participation or trust financing): is a partnership in profit whereby one party provides capital (rab al-maal) and the other party provides labour (mudarib) (AAOIFI, 2010). It involves two parties, the managing trustee (mudarib) and the beneficial owner (rab al-maal). Usually the investment account holders are the providers of funds, and the Islamic banks are the managing partner (mudarib). The Islamic financial institution may either put up all the funds itself or undertake responsibility for investing in them, or alternately it can provide funds to a customer who then acts as mudarib. The borrower retains a fixed percentage of profits, the Islamic financial institution’s reward is a fixed percentage in the balance of the revenue generated by the investments and the remainder goes to the investors.

**Musharaka** (Equity Financing): AAOIFI (2010) defined it as an agreement between two or more parties to combine their assets, labour or liabilities for the purpose of making profits. It is quite similar to the Mudarabah contract. It involves financing through equity. Here the partners or shareholders for a project use their capital through a joint venture or limited partnership to generate a profit. Profits or losses will be split between the shareholders according to some agreed pre-calculation depending on the investment ratio.

A modern application of Musharaka is diminishing Musharaka which is a form of partnership in which one of the partner’s promises to buy the equity share of the other partner gradually until the title of the equity is
completely transferred to him (AAOIFI, 2010). Its application is used more than the typical *Musharaka* model in the Islamic finance market, representing around 12% while the typical *Musharaka* is 1% in 2006 as shown in figure 9. Diminishing *Musharaka* is also used in Islamic mortgage financing in the residential housing market.

**Difference between Mudaraba and Musharaka contracts:** In a *Mudaraba* contract, the managing agent (beneficiary or the borrower, called the *Mudarib*) does not have any financial participation. In a *Musharaka* contract, the agent is a financial partner along with the provider of funds (*rab al-maal* of *Mudaraba* contract), sharing the gain or loss at the pre-designated ratio which is likely to be higher than what he is likely to get in a *Mudaraba* contract. Thus, in *Mudaraba*, the agent acts as a working partner who does not bear any losses and simply manages the fund (the project in which the fund is invested), whereas in *Musharaka*, all the parties are shareholders in the venture.

The *Mudaraba* and *Musharaka* transactions are often seen on the retail liability side of Islamic banks. The asset side whether retail or wholesale is quite risky.

**Murabaha** (Cost-plus financing): This model is extensively used to facilitate trade financing activities of Islamic financial institutions. Murabaha is considered the most common such financial instrument of the ‘mark-up’ structure. It is application usage was estimated at 40% of the global Islamic finance market size in 2006 as shown in Figure 13. AAOIFI (2010) defines *Murabaha* as a sale of an item by the institution to a customer (the purchase order) for a pre-agreed selling price which includes a per-agreed profit mark-up over its cost price, this having been specified in the customer’s promise to purchase.

In a *Murabaha* transaction, the bank finances the purchase of an asset by buying it on behalf of its client. The bank then adds a “mark-up” in its sale price to its client who pays for it on a deferred basis. Islamic banks are supposed to take a genuine commercial risk between the purchase of the asset from the seller and the sale of the asset to the person requiring the goods. The bank stands in between the buyer and the supplier and is liable for a fall in the commodity. There is thus some form of guarantee with respect to the quality of the goods provided by the bank to the end user in the strict form of *Murabaha*. Title of the goods financed may pass to the bank's client at the outset or on deferred payment. From the perspective of modern finance, the *Murabaha* facility is equivalent to an asset-backed risky loan. If the capital markets are perfect and all agents in the economy have equal access to information, then competition between Islamic banks and conventional banks would result in *Murabaha* having the same expected return as that of conventional loans.

Normally, a *Murabaha* transaction involves the financial institution granting the customer a *Murabaha* credit facility. In addition, *Murabaha* typically involves deferred payment terms, but such deferred payment is not one of the essential conditions of such a transaction (AAOIFI, 2010).

**Ijarah:** It literally means “…to give something on rent” (Lewis and Algaoud 2001). The term *Ijarah* as used in this standard means leasing of property pursuant to a contract under which specified permissible benefits in the form of a usufruct is obtained for a specified period in return for a specified permissible consideration (AAOIFI, 2010).

In Islamic finance, there are two forms of leasing: (1) *direct Ijarah* (Operating Lease) which involves leasing of machinery, equipment, buildings and other capital assets. The financier purchases the asset and leases it to the end-user for an agreed rental which may be fixed in advance or subject to occasional review by a mutually
accepted third party. In this *Ijarah* contract possession of asset should be transferred back to the owner after the contract matures. In other words, in pure *Ijarah* contracts, there is no option to transfer the ownership of the asset at maturity (Ariff and Safari, 2015)

(2) *Ijarah wa iqtina* (Financial Lease) is the case of contract where the basic intention is transferring the ownership after completing the leasing period (Ariff and Safari, 2015). This is whereby an institution or individual customer requests the bank to purchase equipment with the intention of leasing it to the customer (Gait and Worthington, 2007). This is a leasing structure coupled with a right available to the lessee to purchase the asset at the end of the lease period. The lessee agrees to make payments into an Islamic investment account (with a right to all profits) to be used in or towards financing the ultimate purchase of the asset. It is most important to note that the lease contract is completely separate and independent from the contract of purchase of residuals, which has to be valued on a market-basis and cannot be fixed in advance.

Furthermore, the purchase contract should be an optional, non-binding contract based on agreement between both parties at the end of the lease period because the quality and the market price of the asset at that time may are unclear (Chapra, 1998). One other approach is the case where the ownership is gradually transferred to the customer. This design as any payment made by the client for his finance lease instalments consider as a decreasing-value lease up to the completion of value of asset plus its rental value. By consequence, this received payment reduces the lessor’s share of ownership until the lessee becomes the owner (Metwally 2006).

From the *Shariah* perspective, the *Ijarah* contract is permissible under the *Shariah* when it satisfies certain conditions. The fundamental requirement is that the lessor must be the real owner and in possession of the asset to be leased under contract. Thus, all risks and uncertainties associated to the asset obtained by the lessor only. This includes responsibility for damages, repairs, insurance, and depreciation of the asset (Khan and Bhatti, 2008).

This instrument has been widely used in a range of asset classes including ships, aircrafts, telecom equipment and power station turbines, etc (Iqbal, 1997, Warde, 2000). In fact, *Ijarah* has witnessed the most common structure usage in Sukuk issuance, especially for project finance (IIFM, 2010).

*Salam* (Pre-paid Purchases):

*Salam* is a form of advance payment or forward buying defined by Iqbal and Molyneux (2005) as follows: “Salam is a sale contract in which the price is paid in advance at the time of contracting against delivery of the purchased goods/services at a specified future date”. It is a short-term commodity finance contract in which the buyer (usually of agricultural or manufactured products) pays the seller the full negotiated price of a product that is promised for delivery at a later date. A *Salam* transaction is the purchase of a commodity for deferred delivery in exchange for immediate payment (AAOIFI, 2010).

In the conventional financial system a forward contract is similar to a *Salam* contract. However, the distinction exists on the rate of return structure as a *Salam* contract is tied to each transaction rather than to a time dimension. Also, in a *Salam* contract structure the buyer pays the full amount in advance on condition of assurances as to the quality and quantity of the sold products as specified in the contract. The counter-party risk in *Salam* is one-sided as it lies with the buyer alone (Islamic bank) unlike the forward contracts which affect both parties. Therefore, it is expected that this risk will be priced accordingly. This is illustrated where
a bank pays for the manufacturer's goods at a discount rate before they have been delivered or even made. On the other hand, there is debate in the literature on whether the subject of a Salam transaction should be available in the market at the time of the contract or whether it is enough that the asset will be available at the date set in the contract for delivery. Also, conditions regarding the specification of a minimum time between the date of contract and delivery of assets is another issue of debate in the Salam literature.

**Istisna** (Manufacturing contracts): The AAOIFI definition is “a contract of sale of specified items to be manufactured or constructed, with an obligation on the part of the manufacturer or builder (contractor) to deliver them to the customer upon completion” (AAOIFI, 2010). Istisna is a relatively new method in Islamic banking; Gait and Worthington (2007) defined it as “a manufacturing contract which allows one party to obtain industrial goods with either an upfront cash payment and deferred delivery or deferred payment and delivery”. El-Gamal (2000) described it as “a commission to manufacture that is usually used to cover work in progress in the manufacturing and building industries”. This model has the advantage that the cost price is prepaid or is deferred as instalments for product creation at a lower price than the cost of buying the completed product or building. In the context of Islamic banking, individuals or firms request a financing contract for the production goods, and the bank concludes an Istisna contract with a third party (the manufacturer) to produce and deliver the specific item under certain requirements (Lewis and Algaoud 2001). The differences between Istisna and Salam is that the Istisna’s subject is usually an item which demands manufacturing; the payment in Istisna could be a lump sum or instalments on a deferred basis, and the time of delivery in an Istisna contract may not be known (Iqbal and Molyneux 2005).

*Figure 30: Common Islamic financing methods in the global Islamic market*

Source: Islamic banking bulletin, State Bank of Pakistan, 2007
2.8 Islamic financing methodology

Islamic finance has a unique methodology distinguishing it from other financial systems. In fact, this is the main difference between Islamic finance and other systems although there is a debate on how this methodology works to meet the competition in the finance industry.

The prohibition on dealing with interest brings other ideas and alternative methods. However, Islamic finance designs its methodology under the concept of trade, requiring engagement with the real economy in its transactions. It is often claimed that the ideal mode of financing under the Islamic banking system is financing on the basis of profit and loss sharing (PLS) (Sangmi and Khaki, 2011).

An Islamic bank would undertake Islamisation on traditional banking product to re-structure it to be in line to Shariah rules.

2.8.1 Comparison between Islamic finance and conventional finance

Based on the literature, the research in the Islamic finance industry tended to compare its financial instruments against conventional financial instruments. The major factors investigated suggested that Islamic finance was considered as an alternative investment; but the major question is how efficient they were regarding investment when compared to the conventional ones. Many studies have been conducted on this matter. This comparison helps to understand the Islamic finance methodology and recognise its identity in the financial context as a comparison method is the common way for consideration and recognition of differences.

In effect, the Islamic financing functions are seen to be much like conventional ones. Investors and lenders have the right to a decent rate of return; it is just the how to generate the return that is an issue. Maximisation of the shareholders’ wealth as the sole objective of the firm is a critical difference between conventional and Islamic finance (Zaher and Hassan, 2001).

Further differences between these two systems are discussed by Akkizidis and Khandelwal (2008). Obviously, the major difference highlighted is dealing with interest. The table below presents these differences:
Table 5: Differences between conventional financing and Islamic Financing

<table>
<thead>
<tr>
<th>Conventional Finance</th>
<th>Islamic Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primarily based on interest rate</td>
<td>Interest is prohibited</td>
</tr>
<tr>
<td>Facilitate financial activities</td>
<td>Facilitate social, economic and financial activities</td>
</tr>
<tr>
<td>Structured and formalised</td>
<td>Unstructured and still informal in many ways</td>
</tr>
<tr>
<td>Stress on financial efficiency</td>
<td>Stress on social, ethical and financial efficiency</td>
</tr>
<tr>
<td>Restricted moral dimension</td>
<td>Strong moral dimension</td>
</tr>
<tr>
<td>Highly systematised in terms of risk management, accounting, and other standards</td>
<td>Standards for risk management, accounting and other activities are still developing</td>
</tr>
<tr>
<td>Existing set of legislations to deal with legal issues</td>
<td>Legal support still in development with several legal areas in doubt</td>
</tr>
<tr>
<td>Highly developed banking and finance product market</td>
<td>Developing banking and financial product market</td>
</tr>
<tr>
<td>Existence of conventional money market</td>
<td>Non-existence of significant Islamic money market</td>
</tr>
<tr>
<td>Available inter-bank funds</td>
<td>Non-availability of inter-bank funds</td>
</tr>
<tr>
<td>Strong and developed secondary market for securities</td>
<td>Non-existing secondary market for securities</td>
</tr>
<tr>
<td>Existence of short-term money market</td>
<td>Non-existence of short-term money market</td>
</tr>
</tbody>
</table>


Furthermore, on the investment side, Islamic finance has its own investment strategy elements describing its features. This applies to every Islamic investment instrument including Sukuk.

The figure below summarises the key differences between an Islamic investment and conventional investment.
In general, Islamic finance has much in common with Ethical finance theory. Both of them support the use of ethical and social criteria to select and manage investment portfolios. However, the Islamic finance methodology distinguishes itself by not dealing in the fixed income market and the receipt and payment of interest is not permitted.

Many studies have argued that Sukuk are an alternative investment. However, the debate on whether Sukuk provides an efficient investment is still ongoing.
An ongoing debate is whether Sukuk really differ from conventional bonds. Usmani (2008) contributed a study on the nature of conventional fixed income securities from the Shariah perspective and illustrated the reason for their impermissibility. He then introduced Sukuk as an alternative and discussed the different types of Sukuk from the Bahrainian and Pakistani context. He concluded that Sukuk are a Shariah compliant investment instrument and that their growth would continue at a fast rate.

While Miller, Challoner and Atta, (2007) and Wilson (2008) argue that Sukuk returns are structured to replicate conventional bond characteristics, others like Cakir and Raei (2007) take an opposite stance to show that Sukuk are different from bonds because they present diversification benefits in terms of risk reduction when added to a portfolio of fixed income securities. In addition, Wilson (2008) demonstrated that referring to Shariah issues on Sukuk plays a crucial role because it might lead Sukuk to default risk. Also, Wilson (2009) emphasised this further with an evaluative study of the development of Islamic finance in the GCC markets. He stated that Sukuk have been adopted in those markets and expanded rapidly, but that the major concerns on Sukuk applications in the GCC relate to Shariah-compliance issues. Shariah concerns are due to different Shariah schools and thinking adopted in the Islamic world. In this light Ahcene and Lin (2012) attempted to address the Shariah issues surrounding Sukuk. They argued that due to the present structuring of Sukuk, they tend to mimic the features of bonds. They concluded that as long as Sukuk continue to be seen as Islamic bonds and are not able to establish themselves as a new class of asset, there will be a never-ending process of sorting out new Shariah issues when innovations are worked to replicate bonds.

In this regard, a study focussed on the risk management of Sukuk structures was written by Tariq and Dar (2007). They contributed to the Sukuk literature by introducing a type of derivative that can help in Sukuk risk management and compliance with Shariah Law. They argued that introducing embedded options can be part of Islamic finance contracts such as Ijarah, instalment sale and Salam contracts. Importantly, they stated that these options will not be a derivative as they cannot be detached and sold independently as an instrument. They also suggested that using a swap between floating rate Sukuk (FRS) and fixed rate zero coupon embedded in Sukuk (ZCES) has the opportunity to emerge. This might be done by making it Shariah compatible with some financial engineering. As a result, Sukuk can become highly competitive in the market and more accessible to investors, hence enabling a greater variety of investment.

A small number of studies were conducted on the effects that Sukuk impose on the performance of investment in different types of banks. Said (2011) provided a very interesting paper in which he investigated whether the use of Sukuk has impacted the performance of Islamic banks during the recent financial crisis. He focused on 14 Islamic banks that used Sukuk as part of their investment operations. The study was divided into two stages; for the former one Said used financial ratios to measure the strength of financial liquidity, deployment, overall efficiency and profitability. In the latter stage, Said provided regression analysis to measure the sensitivity of using Sukuk in these banks to their performance during the financial crisis. He found that the Islamic banks have decreased in strength deployment, overall efficiency and profitability during 2008 compared to 2007, but that Sukuk have not impacted the performance of the sampled Islamic banks. The study showed that Islamic banks increase their use of Sukuk to provide liquidity and mobility for bank resources.
Majid, Shahimi and Abdullah, (2011) and Ahmad and Wahab (2012) discuss the issue of Sukuk default. Majid et al., (2011) investigated the implications of three defaults for the capital market. They selected the Malaysian capital market and three defaulted corporate Sukuk as case studies. In addition, they looked at the implication of Sukuk default on a country’s reputation, legal aspect and investor protection. The found that Sukuk did not pose a significant threat to the Malaysian local capital market but have an impact on the overall country reputation as a global Islamic finance centre. They also found that investors’ sentiment for Sukuk issuance had been severely damaged. In their conclusion, Ahmad and Wahab (2012) emphasised that estimating the Sukuk distance to default reflected the economic conditions of the real economy and the financial position of the borrowers.

From a different platform of comparison, Godlewski, Turk-Aris and Weill, (2011) plus Ariff and Safari (2012) reached a similar conclusion that Sukuk can be distinguished from bonds. However, Godlewski et al., (2011) viewed it from the market reaction perspective. They investigated the market’s reaction toward Sukuk issuance trying to illustrate an understanding of the investors’ behaviour in the Sukuk market. They used a market-based approach on Malaysian data. The approach they used is a standard market model to estimate abnormal returns around the event of issuing Sukuk and bonds. It reacts negatively to the issuance of Sukuk. They attributed their results to the idea that this negative reaction is due to the fact that low profit companies and financially weak companies are known to prefer Sukuk financing to bond financing. They note that the negative reaction towards Sukuk issuance affects the firm’s value in the short-term. Finally, the research noted the need to assess the long-term implications of Sukuk financing in economic development before considering large-scale adoption of Islamic finance instruments. In contrast, Ariff and Safari (2012) examined the differences between Sukuk and bonds by examining the presence of any causal relationship between the yield of Sukuk and bonds of the same return and rating. They concluded that there were no causal relationships.

Alshhari, Chun and Nassir, (2009) conducted a research study that investigated the effect of Sukuk and bond announcements on shareholders’ wealth. They examined the Malaysian market from 2001 to 2006. They found that there is a wealth effect following the announcement of Sukuk issues, consistent with the findings of Godlewski et al., (2011) reported above. By contrast no wealth effect was detected on the bond announcements.

**2.9 Overview of risk management in Islamic finance**

Islamic financial markets have sometimes faced difficulties owing to the lack of adequate market-based government monetary policy instruments compatible with Shariah (Tariq and Dar, 2007). Al-Suwailem (2000) and El-Gamal (2000) examine the concept of uncertainty in the context of Islamic finance and its implications for the feasibility of Islamic risk management. Other studies have focused on risk management in Islamic finance. Al-Deehani, Karim and Murinde (1999) and Archer and Karim (2006) stressed the importance of Islamic risk mitigation factors in order to avoid default in financing. Also, they noted that in addition to the risk factors common to conventional and Islamic banks, the unique mix of risk factors may make Islamic banks more vulnerable than their conventional counterparts, owing in part to the inadequate financial infrastructure of Islamic banks, including missing instruments and markets, and a weak insolvency and creditor rights regime, factors that limit effective risk mitigation.
The Islamic banking system is based on risk-sharing, the owning and handling of physical goods, and involvement in the process of trading, leasing and construction contracts using various Islamic modes of business and finance. As such, Islam in general does not object to trade nor does it simply prohibit contracts just for the sake of it. Islam is against guarantees in trade but allows such protection that can act as mitigating factors. As the prophet, peace be upon him, said: “AlKharq bi Aldaman”, which means such a permissible risk can lead to a permissible profit when it seeks to ensure justice and fair play in all dealings to all parties. The objection is not against the concept of conventional finance but against certain weakness of conventional finance contracts, as explained earlier’ Gharar (uncertainty); Maisir (Gambling) and Riba (Usury). On the other hand, Zubair (2015) contributed with a study of risk sharing in Islamic finance. He argues that risk sharing is not basic to Islam. Islam approves profit-and-loss sharing; sharing of risk is a consequence of that, not its cause. He claimed that there is no such thing as a risk sharing contract per se in Islamic finance that, when entered, gives rise to profit-and-loss sharing. The study concludes that while there is a case for encouraging participatory finance in Islam, there is none for treating risk sharing as its inviolable principle. Risk sharing should be regarded as an aspect of Islamic finance contracts, not as contract in its own right.

In this light, Sukuk represents the holders’ proportionate ownership in an undivided part of the underlying asset. All the rights and obligations to such an asset are assumed by the holder of a Sukuk Certificate, where for a definite period, the risk and return associated with the cash flows generated by that particular underlying asset belong to the Sukuk investors. Sukuk thus represents proportionate ownership in an asset and may be described as an Islamic bond which is asset backed thus differing from a Conventional bond (Lovells, 2007).

Islamic finance is driven in its methodology by the rules of Shariah. However, from the writer’s point of view, the marketing of Islamic financial products should not be based on compliance with the Shariah alone. Using Shariah as a marketing vehicle and ignoring the quality of the financial services or products creates a gap between the product itself and the expectations of the investor or user of Islamic finance. As well, an institution marketing a product as Shariah compliant should ensure that such products are genuinely compliant. In particular, in regards to Sukuk, as an important innovative product, and in order to fulfil its potential, it is essential that compliance is ensured at every stage in the process of securitisation.

2.10 Conclusion
This chapter presented further details about the Islamic finance system, extending the introduction to the general theory of Islamic finance presented in Chapter 1. It addresses the principles and concepts of Islamic finance, market developments, the most common contracts used in Islamic financing, and risk management in Islamic finance.

The main factor distinguishing the Islamic finance system is its finance methodology. This arises from the Islamic theory of money, which is considered to be a valuable instrument, benefiting its holder in the context of exchanging values with others. This implies the prohibition of dealing with interest in Islamic finance transactions.
A main trend in Islamic finance is the development of innovative Islamic finance instruments. The most common structures are Mudaraba, Musharaka, Ijarah, Murabaha, Salam and Istisna. Each of those structures has its own risk/return profile. This underscores risk management as an essential feature of Islamic finance.

Against this background, this study contributes to the debate by examining the development and prospects for Islamic finance, with a special focus on Sukuk risk analysis as a common financial instrument in the global finance market.

The following chapter investigates in further depth the structures and mechanisms of Sukuk.
CHAPTER 3

EVALUATION OF SUKUK STRUCTURES AND MECHANISMS

3.1 Introduction

The Sukuk market has gone from strength to strength over the past few years and continues to move into new markets with strong innovation in terms of structures and instruments. This underlines the importance of critically assessing and analysing Sukuk structures, in order to provide a solid base in the field of study to support further analysis.

This chapter builds on the material in the previous chapters by discussing the regulatory framework, the different classification schemes for Sukuk, Sukuk securitisation, and, for each of the main Sukuk structures, the definitions, key features, risk associations, structure diagrams, and some illustrative examples.

3.2 Sukuk and scope of understanding

Sukuk have featured in the global financial market scene since 2002, and there is a significant amount of literature that has discussed their concepts, features, and structures and investigated the differences from their conventional counterparts. Hence, as Sukuk and conventional bonds are both considered as long term financial instruments, it might be asked what is a conventional bond? It is a financial instrument based on debt where the party that issues the bond is called the issuer and the one that buys the bond the investor (Fabozzi, 2005, Abdul Rahman, 2008). The bond is issued in the form of a certificate with face value of a certain amount such as US$100 and can be sold at par, discount or premium (Abdul Jalil and Abdul Raham, 2012). The bond enjoys distinct features that make it a safer investment option for investors. Some basic features of a bond are the coupon or interest rate, which can be fixed or floating, and maturity date which can either be long-term, intermediate or short-term (Fabozzi, 2005). According to Fabozzi (2005), short-term tenure is between 1 and 5 years, intermediate term is between 5 and 12 years and long term tenure is more than 12 years. The issuance of the bonds can be done in any currency and they are issued for financing certain projects, and for corporate and sovereign liability management. Usmani (2007) commented that the interest based system prevalent in the world today regularly issues conventional bonds that yield interest from capital intensive enterprises that bring great profits and regular revenues. In addition, he summarised that the holders of such certificates are more than lenders, in the sense that their earnings come from the interest on their loans in a percentage that accords with the price of interest in the marketplace. The profits of these enterprises after costs, including interest payments, return exclusively to the sponsors. According to Dualeh (1998), conventional bonds can be identified as a debt security, in which the authorised issuer owes the holders a debt and is obliged to repay the principal and interest (the coupon) at a later date and termed maturity. Thus, a bond is simply viewed as a loan in the form of security. The issuer of the bond is equivalent to the borrower, the bond holder is regarded as lender and the coupon represents the interest. In general, bonds are issued for a fixed term called the maturity. The aim of issuing bonds is basically financing long-term investment with external funds (Dualeh, 1998).
In contrast, the basic concept of Sukuk is that Sukuk holders are sharing in the profits of large enterprises on their revenues. This is because Sukuk are based on trade and the basis of their transaction is an underlying asset.

Essentially, it is not a debt of the issuer but undivided ownership share in a specific asset or business venture. Appendix E illustrates further the comparison between Sukuk, conventional bonds and shares.

According to AAOFI (2010), Investment Sukuk have been defined in Shariah Standard No.17 as:

‘‘...certificates of equal value representing undivided shares in ownership of tangible assets, usufruct and services or in ownership of the asset of a particular project or special investment activity, however, this is true after receipt of the value of the Sukuk, the closing of subscription and the employment funds received for the purpose for which the Sukuk are issued’’ (AAOFI, 2010, p 307)

In the same context, the Islamic Financial Services Board (IFSB) defines Sukuk as follows:

‘‘Sukāk (plural of sakk), frequently referred to as ‘‘Islamic Bonds’’, are certificates each of which represents the holder’s proportional undivided ownership right in tangible assets, or pool of predominantly tangible assets, or a business venture’’ (IFSB standard 7, 2009, p3).

Sukuk contribute to fill the gap in liquidity management mobilization, and to satisfy Muslim investors who are apprehensive about investing in conventional bonds due to many factors that prohibit Muslim investors from doing so. This prohibition includes such things as interest (Riba), uncertainly (Gharar) and transactions in unethical goods and services, making the contract impermissible for Muslims (Tariq, 2004).

Admittedly, Sukuk have more restrictions than conventional bonds due to compliance with Shariah rules. In spite of that, Sukuk enjoy a lot benefits summarised by Usmani (2007) as follows:

1) Sukuk are among the best ways of financing large project namely infrastructure projects that are beyond the ability of a single party to finance.

2) Sukuk provide an ideal means for investors seeking to deploy streams of capital and who require, at the same time, the ability to liquidate their positions with ease whenever the need should arise. This is because it is envisioned that a secondary market for the trading of Sukuk will develop. Thus, whenever, investors require cash from their investments, or from a part of the same, it will be possible for them to sell their Sukuk holdings, or part thereof, and receive their value from their original investment plus earnings, if the enterprise is profitable, in cash.

3) Sukuk represent an excellent way of obtaining liquidity for banks and Islamic financial institutions. When these are in need of disposing of excess liquidity they may purchase Sukuk; and when in need of liquidity, they may sell their Sukuk into the secondary market.

4) Sukuk are a means for the equitable distribution of wealth as they allow all investors to benefit from the true profits resulting from the enterprise in equal shares. In this way, wealth may circulate on a broad scale without remaining the exclusive domain of a handful of wealthy persons. This is clearly among the most important of all the higher goals sought by an Islamic economic system. This is one of the greatest goals of an Islamic economy.
Thus, Sukuk represent a key financial instrument for diversifying resources and providing the necessary liquidity to institutions and governments that need long-term funding sources. Additionally, Sukuk develop the quality of the Islamic financial markets because they extend the part played by shares, and therefore provide additional investment and financing options. Hence, Sukuk bridge the gap in the financing of infrastructure projects, as an addition, or alternative to Treasury bills, bonds and public debt.

Sukuk gain their features from the adoption of the principles of Islamic law, Shariah in all Sukuk functions and transactions. Afshar (2013) described these features as freedom from Shariah prohibitions, such as those involved with interest (Riba), Gharar and harmful activities e.g. beverages, pork, prohibited drugs, gambling, pornography and weapons.

A core feature of Sukuk is that Sukuk are backed by real economy flows.

Broadly, the Sukuk features have six categories, as shown in the figure below:

*Figure 32: Sukuk features*

These features are:

1) Underlying asset backing. This essentially differentiates Sukuk from conventional bonds, and serves to achieve one of the core aims of Sukuk financing, namely, to secure the role of Islamic finance in servicing the financial needs of the real economy.

2) Shariah compliance. This has made Sukuk widely accepted among Muslim investors around the world.

3) Fixed term maturity. This estimates the expected return within a specific period, and is particularly suited for the role of Sukuk in project financing.
4) Type of return. Sukuk are classified as a long term investment with fixed return but due to their profit and loss sharing policy, they have flexible returns based on the profitability generated from the attached asset of the Sukuk. In addition, risk and return in Sukuk is customised based on Sukuk structures, since Sukuk have a different risk profile depending on their structures.

5) Tradability. Sukuk trade throughout the secondary market like bonds. However, this depends on the type of Sukuk. Debt based type such as Sukuk Mabruabuah are required to satisfy particular conditions in Islamic Law in order to be tradable.

6) Redemption and principal repayment. Sukuk have greater security in due to being attached to an asset.

These illustrate shows Sukuk have become a competitive player in the global financial market.

It is noticeable that the risk and return of Sukuk are associated with those of the underlying assets, as the asset cash flows are passed to Sukuk holders (Afshar, 2013). Hence, the ratio of risk and return would be impacted by the underlying asset types, such as tangible or intangible, existing or with deferred delivery, usufruct or services.

3.3 Sukuk regulations

Regulation concerns the market organization, and every market needs to adopt regulation among its users in order to achieve maturity and professionalism. Islamic financial markets, like their conventional counterparts are subject to regulations from professional authorities (Ariff and Safari, 2015). Moreover, to be recognised as an Islamic transaction, Sukuk products must follow some extra procedures required by Islamic authorities (Iqbal and Mirakhor, 1999). These authorities include the Shariah supervisory board (SSB) of an Islamic bank. Shariah regulations governing Sukuk, like other Islamic finance and banking practices in general, are dictated from three sources; international organisations, local authorities, and in-house Shariah boards.

Some major Islamic financial institutions have their own in-house Shariah Supervisory Board (SSB). This is common practice among Islamic investment companies and banks, and is required by AAOIFI standards. In the process of issuing Sukuk Shariah advisors should study proposed Sukuk structures, and suggest revisions in the light of relevant Shariah concepts, in order to achieve the required Shariah compliant financing instrument. Usually the SSB will work closely with the legal counsel of the issuer and the arranger (investment banker) to ensure that the legal documents are in line with Shariah requirements. Finally, they should issue a Shariah certificate (fatwa), which is an opinion that the Sukuk complies with the Shariah rules.

The local Shariah authority governs the Islamic financial institutions within its jurisdiction. Some Islamic countries such as Malaysia have set up their own Shariah Advisory Council (SAC) at the national level, which oversees the consistent application across similar situations in financial interactions. These councils are usually part of the country’s securities commission or central bank. At the international level (the Organisation of Islamic Countries) there is a Shariah Council in Saudi Arabia. From the global perspective, there are a few international organisations that attempt to regulate and screen the conduct of Sukuk issuance and trade. Among these international organisations, AAOIFI, IFSB, and the IIFM are the most influential ones (DIFC, 2009). Although these organisations try to base their rulings on the Shariah, there are occasions when their guidelines on Sukuk differ from those of national authorities. Not being national bodies, these rules cannot be imposed,
so remain voluntary. Therefore, Siddiqui (2008) highlighted that more communication between these organisations will bridge the differences existing between certain Sukuk contracts.

The decisions regarding the permissibility of each Sukuk contract, as mentioned above, is made by expert Muslim scholars who are appointed to the Shari'ah Board. The numbers of those experts is estimated to fall between 100 and 200, worldwide (Asad, 2008). This indicates the gap in the industry and the need to act towards training of expert Muslim scholars to sit on Shari'ah boards in Islamic financial institutions. To address this shortfall, some Islamic institutes such as International Shari'ah Research Academy for Islamic Finance (ISRA) and International Centre for Education in Islamic Finance (INCEIF) are providing special programmes for training certified Shari'ah scholars. However, there are other institutions currently providing short-term courses on this topic.

3.3.1 AAOIFI

On their website, the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI) introduces itself as "an Islamic international autonomous not-for-profit corporate body that prepares accounting, auditing, governance, ethics and Shari'ah standards for Islamic financial institutions and the industry". Professional qualification programmes (notably CIPA, the Shari'ah Adviser and Auditor CSAA, and the corporate compliance programme) are presented now by AAOIFI in its efforts to enhance the industry’s human resource base and governance structures.

As an independent international organisation, AAOIFI is supported by institutional members (200 members from 40 countries, so far) including central banks, Islamic financial institutions, and other participants from the international Islamic banking and finance industry, worldwide.

AAOIFI has gained support for the implementation of its standards, which are now adopted in the Kingdom of Bahrain, Dubai International Financial Centre, Jordan, Lebanon, Qatar, Sudan and Syria. The relevant authorities in Australia, Indonesia, Malaysia, Pakistan, Kingdom of Saudi Arabia, and South Africa have issued guidelines that are based on AAOIFI’s standards and pronouncements. It has reached a total of 88 standards issued: (a) 48 on Shari'ah, (b) 26 on accounting, (c) 5 auditing standards, (d) 7 on governance, and (e) 2 codes of ethics (www.AAOIFI.com, dated 31st Dec 2016).

In May 2003, AAOIFI issued Shari'ah standard 17 titled “Investment Sukuk”. AAOIFI issued standards for 14 different types of Sukuk, where some of these Sukuk are classified as tradable and others are classified as non-tradable based on the type and characteristics of the issued Sukuk (AlBuolayan, 2006). AAOIFI and its Shari'ah Board chairman, Shaikh Muhammad Taqi Usmani, place special attention on Sukuk because it is one of the most favoured Islamic financing instruments and, due to the great flexibility of Sukuk, there is a possibility of variation in contract formation by practitioners (Ariff and Safari, 2015). As mentioned in Chapter one, Shaikh Usmani has provided some comments on the practice of Sukuk. For instance, he has highlighted that “… since Ijarah Sukuk represent the pro rata ownership of their holders in the tangible assets of the fund, and not the liquid amounts or debts, they are fully negotiable and can be sold and purchased in the secondary market. Anyone who purchases these Sukuk replaces the sellers in the pro rata ownership of the relevant assets and all the rights and obligations of the original subscriber are passed on to him. The price of these Sukuk will be
determined on the basis of market forces, and are normally based on their profitability” (Usmani, 2001, p5). However, his most cited and debated comment regarding Sukuk is his statement in November 2007 which declared that some 85 percent of outstanding Sukuk fail the Shariah-compliance test on the basis that they were ‘asset-based’ rather than ‘asset-backed’ with the guaranteed return of the face value of the Sukuk on maturity and in the absence of a transfer in asset ownership to Sukuk holders (Usmani, 2007). After that, the juridical validity of Sukuk became suspect (Hasan, 2010, Alsayyed and Malik, 2010, Ariff and Safari, 2015).

Ariff and Safari (2015) summarised Usmani’s reasons for such a declaration in brief and from three perspectives:

• There have been cases where the assets in the Sukuk were the shares of companies that do not confer true ownership but which merely offer to Sukuk holders a right to returns.
• Most Sukuk issued are identical to conventional bonds with regard to the distribution of profits from their projects at a fixed percentage bench-marked on interest rates. The legal presumption regarding Sukuk is that no fixed rate of profit or the refund of capital can be guaranteed.
• Virtually all Sukuk issues guarantee the return of the principal to holders at maturity (just as in conventional bonds), through a binding promise from either the issuer or the manager to repurchase the assets at the face value regardless of their true or market value at maturity.

Later, in February 2008, AAOIFI issued a guidance statement on accounting for investments (AAOIFI, 2008). Ariff and Safari (2015) summarised and highlighted the important issues raised in this guideline as follows:

a) Sukuk issuances should be backed by real assets, the ownership of which must be legally transferred to Sukuk holders in order to be tradable.

b) Sukuk must not represent receivables or debts, except in the case of a trading or financial entity selling all its assets or a portfolio with a standing financial obligation, in which, some debts owing by third parties, incidental to physical assets or usufruct, are unintentionally included.

c) The manager of the Sukuk is prohibited from extending “loans” to make up for the shortfall in the return on the assets, whether acting as a mudarib (investment manager), or shariik (partner) or wakil (agent).

d) Guarantees to repurchase the assets at nominal value upon maturity apart from Ijarah Sukuk structures are also prohibited.

e) Closer scrutiny of documentation and subsequent execution of the transaction is required by Shariah Supervisory Board.

In turn, Maurer (2010) examined this debatable problem and concluded that for some, Usmani’s opinion was a long overdue and much needed corrective to what they saw as the excesses of Sukuk issuances and structured financing vehicles that came very close to replicating conventional bonds. Ariff and Safari (2015) commented that is an overreaction and an unrealistic appraisal towards Sukuk in particular and for Islamic finance in general. This is because Islamic finance market is born on the interconnected and interdependent conventional finance global world and still under development. In fact, this implies an indicator towards the gap of understanding Sukuk structures between how Sukuk ideally should be in theory and the actual practice of Sukuk in the market. Correcting the Sukuk development path in the early stages helps in avoiding difficulties in it changing track or developing in the future.
3.3.2 **IFSB**

The Islamic Financial Services Board (IFSB), which is based in Kuala Lumpur, was established in 2002 and started operations in early 2003. It serves as an international standard-setting body of regulatory and supervisory agencies that have a vested interest in ensuring the soundness and stability of the Islamic financial services industry, which is defined broadly to include banking, capital market and insurance. In advancing this mission, the IFSB promotes the development of a prudent and transparent Islamic financial services industry through introducing new, or adapting existing, international standards consistent with *Shariah* principles and recommend them for adoption (www.ifsb.org, dated 31st Dec 2016).

To this end, the work of the IFSB supports reconciliation with the Basel Committee on Banking Supervision, the International Organisation of Securities Commissions and the International Association of Insurance Supervisors. Drafting of standards in IFSB is done on a task force working group method. The IFSB council appoints members of the technical committee who are responsible for advising the council on technical issues within its terms of reference.

As far as Sukuk are concerned, the IFSB has issued three standards that affect the issuance, trade, or investment in Sukuk:

- **IFSB-1**: Guiding principles of risk management for institutions (other than insurance institutions) offering only Islamic financial services, issued in December 2005. This guideline also includes the various risk elements affecting institutions offering investment certificates such as Sukuk and operational considerations regarding them. This guideline offers a general perspective toward risk sources and risk management and is not specific to Sukuk.

- **IFSB-2**: Capital adequacy standard for institutions (other than insurance institutions) offering only Islamic financial services, issued in December 2005. This standard overviews various Islamic contracts (some of which are underlying contracts of Sukuk) and provides capital requirements for each.

- **IFSB-7**: Capital adequacy requirements for Sukuk, securitisation and real estate investment, issued in January 2009. The first part of this guideline investigates Sukuk and securitization, Sukuk structures, operational requirements pertaining to Sukuk, the treatment of regulatory capital for Sukuk and securitisation exposures, and the treatment of credit risk exposures of Sukuk.

3.3.3 **IIFM**

The International Islamic Financial Market (IIFM), located in the Kingdom of Bahrain, is a global standardisation body for the Islamic capital and money market segment of the Islamic financial services industry. Its primary focus lies in the standardisation of Islamic products, documentation and related processes. The IIFM was founded with the collective efforts of the Central Bank of Bahrain, Bank Indonesia, the Central Bank of Sudan, the Labuan Financial Services Authority (Malaysia), Ministry of Finance (Brunei Darussalam) and the Islamic Development Bank (a multilateral institution based in Saudi Arabia). Besides the founding members, the IIFM is supported by its permanent members, namely the State Bank of Pakistan and the Dubai International Financial Centre Authority (UAE). IIFM is further supported by a number of regional and international financial institutions as well as other market participants as its members. IIFM activities are under supervision of its *Shariah* Advisory Panel, which currently has ten members. The focus of IIFM’s work is on
Islamic capital and money markets. Presently, IIFM has no specific standard or guideline pertaining to Sukuk. However, it has released two reports on Sukuk in 2010 and 2011. In these reports, IIFM investigated the current Sukuk market from an international as well as domestic perspective. It also investigated various international issues regarding Sukuk structures. Moreover, it has studied some Sukuk issues as a case study (www.iifm.net, dated 31st Dec 2016).

3.3.4 **IILM**

The International Islamic Liquidity Management Corporation (the IILM) is an international institution established by central banks, monetary authorities and multilateral organisations to create and issue short-term Shariah-compliant financial instruments to facilitate effective cross-border Islamic liquidity management. By creating more liquid Shariah-compliant financial markets for institutions offering Islamic financial services (IIFS), the IILM aims to enhance cross-border investment flows, international linkages and financial stability.

It was established on 25 October 2010 and the current shareholders are from the central banks and monetary agencies of Indonesia, Kuwait, Luxembourg, Malaysia, Mauritius, Nigeria, Qatar, Turkey, the United Arab Emirates and the Islamic Development Bank. The IILM is hosted by Malaysia and headquartered in Kuala Lumpur (www.iilm.edu, dated 31st Dec 2016).

At present, the IILM has no specific standard or guideline pertaining to Sukuk. However, it has contributed heavily to facilitate the sharing of Sukuk structures by issuing several Sukuk that have enjoyed a wide acceptance among Shariah scholars.

3.3.5 **GBSA**

The Gulf Bond and Sukuk Association (GBSA) is the regional trade association representing the Arabian Gulf bond and Sukuk market. GBSA is involved in all major matters concerning the development of bond and Sukuk markets in the region.

The Gulf Bond and Sukuk Association, based in Dubai promote international best practices adapted to the Arabian Gulf region. GBSA is the industry trade association that leads the development of the region’s fixed income capital market. Its mission is to increase market transparency and liquidity while strengthening the region’s voice in the global financial arena. GBSA mobilises market participants and connects the industry with the official international community. The main activities of GBSA are to assist in developing bond related legislation and regulation, to provide input to regulators, advise governments as issuers, set market practices and conventions and to raise awareness among the public about investing (www.gulfbondsukuk.com, dated 31st Dec 2016).
3.4 Sukuk ratings

A rating is an evaluation of a corporate or domestic or private placement security’s relative safety from an investment standpoint.

In the context of conventional finance it is a measurement of financial solvency, adequate for the purpose of measuring the ability of an organisation to pay its financial obligations. In the context of conventional bonds it measures the issuer’s ability to repay the principal and make interest payments. A grade (the most controversial part of the rating process) is given to the conventional bond that indicates its credit quality. Private independent international rating companies such as Standard and Poor’s, Moody’s, and Fitch, or domestic rating agencies like RAM and MARC of Malaysia, provide these evaluations of the issuer’s financial strength, or the ability to pay a bond’s principal and interest in a timely fashion.

Bonds are rated, for example, from AAA or Aaa (the highest), to C or D, which represents a company that has already defaulted. Each rating company has its own definition and methodology for rating and its own set of rating ranges.

The introduction of Sukuk ratings in the 1990s represents another critical milestone in the development of the Sukuk market. Conventional bond ratings are principally designed to arrive at a reasoned judgment on credit risk via a careful analysis of the critical issues surrounding a specific debt on the issuer (Mohd Asri, 2004).
This debate has been illustrated by Slim and Nader (2013); the three main international agencies of rating (Standard and Poor’s, Moody’s and Fitch) consider Sukuk as similar to conventional bonds and not as a new class of financial instrument. These agencies have ignored the principal goal of Islamic investors that seek to invest in Sukuk that comply with Shariah. This may cause an inaccurate reading of Sukuk ratings in the market.

In general, as Ariff and Safari (2015) mentioned, the rating agencies’ criteria for Sukuk ratings are the same as the criteria for corporate bond ratings. These criteria incorporate the issue structure (repayment schedule and debt types), business risk analysis, financial risk analysis, management, ownership and other qualitative factors (Mohd Asri, 2004). However, realising the uniqueness and different types of Sukuk, with the difference in risk groups within those Sukuk types, the rating methodology should be different to that of conventional bond ratings (Jalil, 2005). Rosly (2007) argued that Sukuk structures fall into two categories:

- Asset-backed Sukuk, for which ratings are dependent on a risk analysis of the asset or enterprise underlying the Sukuk. However, investors hold rights to the underlying assets through SPV and not directly; hence, Sukuk performance is driven by assets and not linked to the originator.

- Unsecured Sukuk, for which ratings are primarily dependent on the riskiness of the sponsor, originator, or the borrower.

In 2002, the Islamic International Rating Agency (IIRA) was jointly set up by the Central Bank of the Kingdom of Bahrain and the Islamic Development Bank together with other shareholders for the purpose of independently evaluating, analysing and rating Islamic banks and instruments. The creation of the IIRA was the first step in setting a benchmark for innovating, implementing and approving new Islamic investments in the regional Sukuk markets. However, it faced difficulties with the Shariah interpretations of Sukuk certificates.

Ariff and Safari (2015) emphasised that risk elements affecting Sukuk should be thoroughly investigated by rating agencies like conventional bonds. Among risk elements, Rosly (2007) mentioned that credit risk is the most critical one. Other factors he highlighted are currency risk (for international issues), tax risk, and reserve funds. In contrast to highly sensitive conventional bonds, Sukuk are less sensitive to interest rates. To this end, this research work fills this gap with empirical analysis addressing the impact of different risk profiles of each Sukuk structure on financial performance.

3.5 Sukuk types

According to the IFSB guidelines (2005) no.2, Sukuk are ideally categorised as asset-based or equity-based instruments whereby the former offers predictable returns, such as in the case of Salam, Isisna and Ijarah whilst in the latter the return is derived from profit and loss sharing in joint venture business offering unpredictable returns, as in the case of Musharakah and Mudarabah contracts.

Sukuk can also be categorized in terms of their legal structure or in terms of their Shariah classification.

*Figure 34: Sukuk types categorisation*
3.5.1 **First: Legal concepts of Sukuk structure**

Sukuk are designed to facilitate investment and trade, and hence it is necessary to investigate the legal concepts for structuring this trade. This is the debatable issue in the literature, and a cause of confusion in Sukuk securitisation. A better understanding of these legal aspects helps to identify the structure risk factors of Sukuk. Following the literature, Sukuk are classified into two classes, asset-backed and asset-based. The asset-backed Sukuk involve a true sale transaction, changing the ownership of the asset from the Sukuk issuer to the Sukuk holders and where the asset remains attached to the Sukuk transaction until the redemption date. Ideally, the profit generation mechanism results from the resource gains from the asset. This implies that the risk of the asset forms part of the Sukuk risk profile. By contrast, asset-based Sukuk do not transfer the ownership of the asset of the transaction from the issuer to the Sukuk holders. However, financial rights attached to the Sukuk are legal obligations of the Sukuk issuers. These legal rights are transferred to the Sukuk holders, and these legal rights (financial rights) of the asset underlying the transaction remain to the redemption date. Further explanations are presented in this section.

The IFSB guideline no. 7, Capital Adequacy Requirements for Sukuk, Securitisation and Real Estate Investment (2009), distinguishes three types of Sukuk structures: Asset-backed Sukuk (ABS), asset-based Sukuk (pay through) and asset-based Sukuk (pass-through).

Although they are very similar, they do have significant differences in terms of ownership, asset recourse to the investor and rating perspective (Muhamed and Radzi, 2011). Hence, ABS are asset-backed structures as assessed by a recognised external credit assessment institution (i.e. rating body). Based on this guideline there are two factors that constitute an ABS. Firstly, Sukuk holders face loss in the case of any impairment of the underlying asset. Secondly, the risk of an ABS is a function of the risk of the underlying asset. Sukuk holders derive their cash flows from the cash flows of the Sukuk’s underlying asset, and have recourse to the Sukuk asset, not the issuer, in case of default of the Sukuk issuer. True sale execution is another dimension of an ABS in which there is a real transfer of asset ownership from the originators to the Sukuk holders with the effect of releasing assets from the issuer’s balance sheet to investors (Ahmed, 2010). Therefore, ABS issuance must be backed by real assets that represent the Sukuk holders’ ownership interest as well as the risks attached to the Sukuk.

In contrast, with asset-based Sukuk there is no true sale transaction taking place. Rather one sees just the transfer of financial rights to the asset, and the Sukuk income is derived from the financial rights to obligations.
attached to the debt (Aziz and Gintzburger, 2010). A sale transaction is absent since the Sukuk holders have recourse to the originator instead of to the underlying assets in the event of default. The Sukuk income is based on either pay-through or pass-through as defined in the IFSB-7 (2009) guidelines, in which the former constitutes recourse to the originator via a purchase undertaking whilst the latter constitutes recourse to the issuer via guarantee. Therefore, the risk and return of asset-based Sukuk are derived from the obligor instead of the Sukuk’s underlying assets, so that in case of default, investors have recourse to the obligor and do not have recourse to the asset. The risks are measured solely on the issuer or obligor’s creditworthiness to pay back the capital. Thus, it is not surprising that investors are mainly focused on sovereign/corporate credit quality and less concerned on the actual underlying asset performance when they buy sovereign Sukuk (Hales, 2005). In this regard, Sukuk holders are guaranteed to get the capital back in the event of bankruptcy. Furthermore, in asset-based Sukuk, the structures are merely fulfilling the form of a contract with much more complexity, which ultimately leads to an Islamic equivalent of an unsecured conventional bond (Howladar, 2009). Hence, Sukuk holders would only be able to dispose of the assets to the lessee and be treated as unsecured creditors (Haneef, 2009).

Habib (2010) discussed how effective the difference was between asset-backed and asset-based on Sukuk structuring behaviour in the market. He commented that the Sukuk market is dominated overwhelmingly by the asset-based Sukuk. He referred to Dusuki and Mokhtar’s (2010) study where they found that only 11 out of a total of 560 Sukuk issues (or around 2 per cent of the total) qualify to be asset-backed as these fulfil the Shariah requirements of an actual sale of the underlying asset to the investors. Concerned about the incoherent practice in the market, the Shariah Board of AAOIFI issued a statement in February 2008 to stress that the sale of the assets to the Sukuk holders must be true with all associated rights and obligations of ownership and must be reflected in the accounting books. He emphasised that the dominance of asset-based Sukuk is sometimes blamed on the inconsistency of Islamic contracts with the prevailing non-Islamic legal framework and economic incentives of suppliers and demanders of Sukuk. The fact that some asset-backed Sukuk have been issued in Malaysia and the Gulf Cooperation Council region, and that these resemble the widely prevalent asset-based securities in conventional markets, indicate that the legal obstacles are not constraining factors. However, currently, the economic arguments of not using asset-backed Sukuk are also weak. On the supply side, the originators can get relatively higher ratings compared to their asset-based counterparts which can substantially reduce the cost of funds. For instance, Moody's rated the Tamweel's asset-backed Sukuk the maximum possible in the UAE of Aa2. An asset-based Sukuk by the same company was four notches below at A3 during 2009 (Howlader 2009). On the demand side, the asset-backed Sukuk provides a safer bankruptcy remote investment option to the investors (Habib, 2010).

Yaakub, Syah, Mujani, Jussof, and Abdul-Hamid (2011) produced remarkable work on the interpolation of assets ownership classification of Sukuk. They noted that the first purely asset-backed Sukuk Ijarah came into practice in 2001 when the Government of Bahrain Kingdom issued US$250 million Sukuk Ijarah backed by US$250 of sovereign assets. The first asset-based Sukuk were issued by the Government of Malaysia in 2002 through the issuance of the Malaysian global Sukuk totalling US$600 million. The ownership on the underlying asset was a beneficial ownership rather than legal ownership, through the Sukuk trustee (SPV) for the whole tenure of the Sukuk. The study was conducted on the analysis of the issue of asset ownership and the issue of the investors’ (Sukuk holders’) rights and protections. They found that asset-backed Sukuk Ijarah offer more
protection to Sukuk investors compared to asset-based Sukuk *Ijarah*. This means the study supports the noticeable gap between these two legal structures.

To sum up, Muhamed and Radzi, (2011) summarised the differences between asset-back and asset-based Sukuk structures as shown below:
Table 6: The main differences between asset-back and asset-based Sukuk legal structures.

<table>
<thead>
<tr>
<th></th>
<th>Asset-based Sukuk</th>
<th>Asset-backed Sukuk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>Only provides artificial ownership rights to the “usufruct” of certain physical underlying assets, relying instead on the obligor’s credit quality to ensure the Sukuk performance.</td>
<td>An asset-backed Sukuk implies that ownership rights extend to the actual underlying assets such as physical real estate or rights/usufruct from particular intangible but valuable assets.</td>
</tr>
<tr>
<td>Asset recourse to investor</td>
<td>The recourse of the investor is to the creditworthiness of the ultimate obligor.</td>
<td>Recourse of the investors is to the asset-issuing vehicle and the Sukuk investors bear any losses in case of impairment of the Sukuk.</td>
</tr>
<tr>
<td>Rating</td>
<td>Corporate rating methodology is used for asset-based Sukuk transaction. Here, a corporate obligor is the key driver affecting the credit risk of the Sukuk.</td>
<td>Asset-backed rating methodology will be used for the asset-backed Sukuk transaction. Here, credit risk is determined solely by the performance of underlying assets.</td>
</tr>
</tbody>
</table>

Source: Muhamed and Radzi, 2011

Muhamed and Radzi (2011) commented that the differences between asset-backed and asset-based Sukuk structures appeared clear when the case of Sukuk default and liquidation arise. For example, a Sukuk Ijarah may be asset-based or asset-backed, yielding a wholly different risk profile to each in the event of a default and/or liquidation. This is due to the terms asset-based and asset-backed themselves. In their study about illustrating the difference between asset-backed Sukuk and asset-based Sukuk, they concluded that a default on asset-based Sukuk is the same to investors as a default on unsecured bonds. No recourse can be expected against any of the assets used in the Sukuk. On the other hand, asset-backed Sukuk may become more widely used as they would have the ability to take possession of the asset backing the Sukuk. However, this argument should not be construed as an attempt to discredit the use of asset-based Sukuk. Similar to conventional unsecured bonds, they are a useful way for companies to raise finance. Asset-based Sukuk may be more suitable where legal title to assets cannot be transferred to investors. The asset-based Sukuk is also more appropriate
when there are restrictions on foreign ownership of certain asset classes such as real property. In addition, asset-backed Sukuk may not be adequate in circumstances where the enforceability of assets may provide a challenge, such as sovereign owned assets.

3.5.2 Second: Shariah concepts of Sukuk structure

From a Shariah point of view, it is essential that Sukuk are backed by specific, tangible assets throughout the entire tenure and that Sukuk holders hold a proprietary interest in the assets which are being financed (Yean, 2009). Therefore, to be consistent with Shariah principles the Sukuk risk and return situation should be influenced by the asset type and its characteristics.

AAOFI standard 18 (2010) introduced 14 types of Sukuk. Those commonly exercised in the global market are the Ijarah Sukuk, Musharakah Sukuk, Murabaha Sukuk, Istisna Sukuk, and a combination of some of these types is feasible as well (Khalil, 2011).

These 14 Sukuk types can be broadly classified into 4 groups: asset based, debt based, equity based and agency based. The table below illustrates these classifications:

Table 7: Classification of types of Sukuk Shariah structures

| Asset Based                  | - Ijarah with its types such as existing owned, existing leased and future assets. |
|                             | - Manfah (usufructs) with its types existing asset and future asset.              |
| Debt Based                  | - Istisna                                                                       |
|                             | - Salam                                                                         |
|                             | - Murabahah                                                                     |
| Equity Based                | - Mudarabah                                                                     |
|                             | - Mushararkah                                                                   |
|                             | - Muzara’a (Sharecropping)                                                     |
|                             | - Musaqa (Irrigation)                                                          |
|                             | - Mugharasa (Agriculture or plantation)                                         |
| Agency Based                | - Wakala (Agency)                                                              |
| Hybrid/mixed Sukuk          | - Consisting of two or more structures                                         |

Source: Created by Fauz El et al., (2015) and developed by author, (2016)

Basically, these types categorise the Shariah contracts and financial structures as described earlier in Chapter 2, but the important thing here is these contracts are considered from the financial perspective. Each of these
groups has different Shariah conditions and a different association with the underlying asset (Ayub, 2007). The basic feature of asset-based Sukuk is that the asset, whether a tangible asset or usufruct, is associated with the Sukuk for the entire term of the Sukuk.

The debt based Sukuk uses the asset as the base of a trade transaction in which payment for the sale amount to the Sukuk holders is deferred. So, the asset profile between asset based and debt based is different.

Equity based Sukuk have the characteristic that the return to Sukuk holders is dependent on the continuing efforts of the Sukuk issuer, where the issuer provides a service using assets funded by the Sukuk.

In an agency based Sukuk the issuer acts as an agent and holds the risk and return profile (Ayub, 2007). More efforts of the Sukuk issuer, where the classification of Sukuk is based on Sukuk certificate types follows:

3.5.3 Third: Classification based on Sukuk certificate types

Another classification of Sukuk asset classes is based on the type of certificates that are issued by the Sukuk issuer. AAOIFI (2002) and Tariq and Dar (2007) listed Sukuk certificate types as follows:

1. Pure Ijarah Sukuk

These certificates are issued on stand-alone assets that are identified on the balance sheet. The assets can be a piece of land or fixed assets to be leased such as aircrafts and ships. The rental rates of returns on these Sukuk can either be fixed or floating depending on the particular originator. Different from other Ijarah types, in these certificates there is no option to transfer the ownership of the asset at maturity (Ariff and Safari, 2015).

2. Hybrid/Pooled Sukuk

The underlying pool of assets can consist of Istisna, Murabahah, and Ijarah receivables. Furthermore, having a portfolio of assets composed of different classes allows for a greater mobilisation of funds as previously inaccessible Murabahah and Istisna assets can comprise a portfolio. However, at least 51% of the pool must be consists of Ijarah assets. Since the Murabahah and Istisna receivables are part of the pool, the return on these certificates can only be a predetermined fixed rate of return.

3. Variable Rate Redeemable Sukuk

This type can be considered as an alternative to Sukuk because of their seniority to the issuer’s equity, their redeemable nature, and their relatively stable rate as compared to dividend payouts. Therefore, in some circumstances, implementing Sukuk by representing the full strength of an issuer’s balance sheet can prove beneficial. Several corporate entities refer to these Sukuk as Musharakah Term Finance Certificates (MTFCs). MTFCs have two main advantages. First, employing Musharakah returns is referred from the viewpoint of jurists; as such an arrangement would strengthen the paradigm of Islamic banking that considers partnership contracts as the embodiment of core ideals. Second, the floating rate of return on these certificates would not depend on benchmarking with market references such as LIBOR but would instead be contingent on the firm’s balance-sheet actualities.
4. Fixed-Rate Zero-Coupon Sukuk
This type of certificate is not a tradable certificate because of the nature of the underlying pool of assets which has Shariah restrictions. The primary asset pools to be generated would be of a nature warranted by Iistisna and installment purchase/sale contracts that would create debt obligations.

5. Embedded Sukuk
This certificate can be either zero-coupon, pure-Ijarah or hybrid, with the embedded option to convert into other forms depending on specified conditions.

In conclusion, despite the difference between those Sukuk types the association between those types and sequences is noticeable. The connection between the above classifications begins with the legal concept then certificate type after that choosing a suitable Shariah concept in line with the legal concept and certificate to build the Sukuk structure.

The figure below illustrates this connection:

*Figure 35: The connection between Sukuk types classification*

<table>
<thead>
<tr>
<th>Legal Concept Type</th>
<th>Certificate Type</th>
<th>Shariah Concept Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Backed</td>
<td>Pure Ijarah Sukuk</td>
<td>Asset based</td>
</tr>
<tr>
<td>Asset Based</td>
<td>Hybrid/Pooled Sukuk</td>
<td>Debt based</td>
</tr>
<tr>
<td></td>
<td>Variable Rate Redeemable Sukuk</td>
<td>Equity based</td>
</tr>
<tr>
<td></td>
<td>Fixed-Rate Zero-Coupon Sukuk</td>
<td>Agency based</td>
</tr>
<tr>
<td></td>
<td>Embedded Sukuk</td>
<td></td>
</tr>
</tbody>
</table>

Simply put, Sukuk securitisation involves three phases as illustrated below:
Sukuk Certificates can be either

What is the legal concept type?

Asset Based  Asset Backed

After chosen the legal structure then move to find a suitable type of certificate

What type of Sukuk certificate is suitably fit then?

Embedded Sukuk

Variable rate redeemable Sukuk

Fixed rate zero coupon Sukuk

Hybrid/ Pooled Sukuk

Pure Ijarah Sukuk

Which Shariah structure is fit with it?

Which Shariah structure is fit with it?

Which Shariah structure is fit with it?

Which Shariah structure is fit with it?

Agency Based  Equity Based  Debt Based  Asset Based

Phase I

Phase II

Phase III
3.6 Sukuk securitisation

In a conventional framework, asset securitisation refers to “the process and the result of issuing certificates of ownership as a pledge against cash flow streams of diversified pool of assets (assets portfolio) to investors” (Jobst, 2007). Securitisation provides an alternative to intermediated debt finance, diversifying the sources of external financing. Central to asset securitisation is the evaluation of the risk of the securitised assets (Jobst, 2006). True sale, bankruptcy remoteness, and enforceability of assets are essential prerequisites for asset securitisation. Since there are lower costs and risks arising from asset securitisation than contractual loan relationships, effective risk management and capital enhancement are to be significant advantages of asset securitisation, (Shaenker and Colletta, 1991; Dvorak, 2001). Asset securitisation is highly exposed to interest rate risks, since receivables associated with securitised assets are valued by interest rate discounting. Mortgage Backed Securities (MBS) is one example of an asset backed security, in which a pool of receivables of home buyers is securitised through intermediary institutions, such as Fannie Mae or Freddie Mac in the US, and Cagamas in Malaysia. The risks of asset securitisation can be commoditised in a way that the risks can be detached from the assets to trade the risks in the market through speculative derivatives instruments, such as a Credit Default Swaps (CDS) instrument. CDS transfers the risk of default from the fixed income security holder to the swap seller (Blanco, Brennan, and Marsh, 2005).

To a certain extent, conventional asset securitisation is similar to Islamic securitisation. Both types of securitisation have similar prerequisites, processes, and advantages. Nevertheless, due to Shariah restrictions, Islamic securitisation has distinctive features that distinguish it from asset securitisation. AAOIFI (2003) defined Islamic securitisation in Standard 17 as “known in Arabic terminology as Taskeek (issues) and Tasneed (securities). Securitisation is a process of dividing ownership of tangible assets, usufruct or both into units of equal value and issuing securities as per their value”. Hence, following the rules of Shariah, Islamic securitisation must be free from three prohibited practises, Riba, Gharar, and Maysir. Thus, anything leading to these practises is not tolerated, such as debt and financial assets trading, sinful activities, interest bearing collateral, and so forth. Islamic securitisation must involve the funding or the production of real assets rather than financial securities, and which cause irresponsible leverage as well as speculation through derivatives trading (Wilson, 2004).

The first step in the issuance of Sukuk is the preparation of a detailed feasibility study. Second, setting up a general framework and organisational structure. Third, working out an appropriate Shariah structure. Fourth, arranging a lead manager to underwrite the Sukuk issue. Fifth, arranging the legal documentation around the agreed Shariah structure. Sixth, setting up a special purpose vehicle (SPV) to represent the investors. Finally, putting the Sukuk into circulation (LMC, 2008). Currently, most Sukuk structures have the originator seeking financing transfers of certain assets to a Special Purpose Vehicle (Ryan and Elmalki, 2010). Thus, the lifecycle of Sukuk securitisation can be illustrated as below:
The model of Sukuk securitisation is derived from the conventional securitisation process in which a SPV is set up to acquire assets and issue financial claims on the assets. These financial asset claims represent a proportional beneficial ownership to the Sukuk holders. The SPV plays a crucial role in the Sukuk life cycle.

### 3.7 Sukuk structures

Sukuk represent partial ownership in a debt, asset, equity or business while a conventional bond promises to repay the loan. As Sukuk are a Shariah compliant instrument, Sukuk are structured in such a way as to match the concept of the Shariah sale contract. The number of Sukuk structures so far has reached 14, as listed by AAOIFI Shariah standard 17 (2003). According to Saad and Mohamad (2012) the most common Sukuk exercised in the global Sukuk market are Sukuk Murabaha, Sukuk Ijarah, Sukuk Istina, Sukuk Musharakah, Sukuk Mudarabah and Sukuk Salam. Nader and Slim (2013) state that during the period from 1st January 2001 to 31st December 2010 the most widely used Sukuk structures are Murabaha (cost plus sale), which represents 30% of the global issuance in the domestic Sukuk market but only 2% in the international market (these Sukuk have no secondary market). Second are Musharakah Sukuk, financing a business activity on the basis of partnership contracts, which represent 26% of the domestic Sukuk market and 19% of the international Sukuk market. Third are Sukuk Ijarah, that represent ownership of equal shares in rental property or usufruct of the property. In the international Sukuk market and in the domestic Sukuk market, the Sukuk Ijarah represent 45% and 23%, respectively.

Each of these structures will now be presented in five dimensions of explanation; the definition of the structure, its essential features, the structure diagram, the risks associated with the structure, and concluding with two examples of a Sukuk possessing the given structure, one example being an illustrative example constructed by the author and the second a real example from the Sukuk market. The following detailed discussion of Sukuk structures builds on the introduction to Sukuk structures presented in Chapter 2.
3.7.1 **Sukuk Murabaha:**

- **Definition:**

  *Murabaha* is used mostly for short term financing (Abdul Rahman, 2008). In intermediated *Murabaha* financing an intermediary, typically a bank, buys a commodity with free and clear title, and according to a client request. The intermediary then sells the commodity to the client in a deferred sale via installments for a predetermined profit over the cost of the commodity. Thus, *Murabaha* is a purchase and sale contract for financing assets, whereby the cost and profit margin (mark-up) are made known and agreed by all parties involved. The settlement for the purchase can be either on a deferred lump sum or on an installment basis, as specified in the agreement (Saad and Mohamad, 2012). If the client wishes to liquidate the commodity they can sell it in the market to a third party. This is makes *Murabaha* different from traditional finance, as *Murabaha* is not an interest-based loan but a financial transaction involving an asset trade.

  In the securitization process Sukuk *Murabaha* certificates of equal value are issued for the purpose of financing the purchase of goods, so that the certificate holders become the owners of the *Murabaha* commodity (AAOIFI, 2003). The investors buy the Sukuk certificates according to the purchase price agreed upon from the issuers through a trustee. Then, the trustee sells the Sukuk back to the issuers with the sale price which is the purchase price plus mark-up to be settled on a deferred payment basis (Abdul Jalil and Abdul Rahman, 2012).

- **Essential Features:**

  Sukuk *Murabaha* have a debt based structure with the asset underlying Sukuk *Murabaha* playing a crucial role in the structure profile. This is because the issuer of the Sukuk is the seller of the *Murabaha* commodity, the subscribers are the buyers of the commodity and the realised funds are for the purchase of the commodity. The negotiability of these Sukuk or their trading in the secondary market is not permitted by *Shariah*, as the certificates represent a debt owing from the subsequent buyer of the commodity to the certificate-holders and such trading amounts to trading in debt on a deferred basis, which will result in *Riba*.

- **Structure Diagram**

  Sukuk involve a Special Purpose Vehicle/Entity (SPV/SPE) to facilitate the relationship between the Sukuk issuers and Sukuk investors. The SPV is a subsidiary company with an asset/liability structure and legal status that makes its obligations secure even if the parent company goes bankrupt. With Sukuk that are based on the *Murabaha* contract, the SPV can use the investors’ capital to purchase an asset and sell it to the obligator on a cost-plus-profit-margin basis. The obligator (the buyer) makes deferred payments to the investors (the sellers). This setup is a fixed-income type of Sukuk, and the SPV facilitates the transaction between the Sukuk holders and the obligator.

  The *Murabaha* contract process begins with the obligator (who needs an asset but can’t pay for it right now) signing an agreement with the SPV to purchase the asset on a deferred-payment schedule. This agreement describes the cost-plus margin and deferred payments.
The Sukuk Murabaha structure is designed to sew different parties’ relationships to produce a completed financing product. According to Nisar (2010) and Nader and Slim (2012) the essential steps involved in the Murabaha structure are:

➢ A master agreement is signed between the SPV and the borrower
➢ The SPV issues Sukuk to the investors and receives Sukuk proceeds.
➢ The SPV buys the commodity on a spot basis from the commodity supplier.
➢ The SPV sells the commodity to the borrower at the spot price plus a profit margin, payable in instalments over an agreed period of time.
➢ The borrower sells the commodity to the commodity buyer on spot basis.
➢ The investors receive the final sale price and profits.

*Figure 38: Murabaha Sukuk structure*

Risk Associations

Sukuk have several risk factors, but some of those factors are specific to particular Sukuk structures. In respect of the Murabaha structure, Khan and Ahmed (2001), Sundararajan and Luca (2002) and Tariq and Dar (2007) discussed those risk factors associated only with this structure. The main Shariah issue concerning the Murabaha structure is that it should not be a tradable instrument, being debt based. This gives rise to liquidity risk. However, liquidity risk is somewhat mitigated since Murabaha financing is predominantly short term. Sukuk Murabaha are also exposed to credit risks. The rate of return, fixed for the maturity of the Sukuk, should be high enough to compensate investors for the risk exposures.

Example:

A manufacturer wishes to buy £1,000,000 worth of wood but does not have sufficient funds. To raise these funds through Sukuk Murabaha, the manufacturer issues Sukuk, in a similar way to the issuance of conventional bond certificates. The investors set up an SPV as an entity facilitating the Murabaha financing structure. The SPV collects the investor’s capital to purchase wood worth £1,000,000 from the third party as a wood supplier in a spot sale transaction. After that, the manufacturer, as obligator approaches the SPV and signs an agreement to purchase the wood from the SPV at cost (£1,000,000) plus profit (maybe 20 percent of the contract amount, or £200,000).
The manufacturer is liable to pay the SPV £1,200,000 after the SPV delivers the goods. Both parties know the profit and the cost of the product at the outset; there is no financial uncertainty in the transaction. The £200,000 profit together with the £1,000,000 principal is paid to the investors through periodic payments, the timing and amount of these payments as specified in the Murabaha contract.

Example from Sukuk market:

Table 8: Example of Murabaha Sukuk

<table>
<thead>
<tr>
<th>Sukuk name/Date:</th>
<th>Vendome Sukuk, December 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issuer:</td>
<td>Milestone Capital PCC acting in respect of the Issuing Cell</td>
</tr>
<tr>
<td>Type of Sukuk structure:</td>
<td>Sukuk Murabaha</td>
</tr>
<tr>
<td>Amount:</td>
<td>EUR 9,878,000 (EUR 100,000 for each Sukuk Certificate)</td>
</tr>
<tr>
<td>Term:</td>
<td>3 years</td>
</tr>
<tr>
<td>Profit Rate:</td>
<td>8% per annum</td>
</tr>
<tr>
<td>Profit Distribution:</td>
<td>Quarterly payment of profit</td>
</tr>
<tr>
<td>Sukuk Assets:</td>
<td>Commodity Murabaha between the Issuer and Gatehouse Bank plc</td>
</tr>
<tr>
<td>Security:</td>
<td>A deed of shared security whereby Gatehouse Bank plc and the Issuer agree to share the proceeds of second ranking security granted to Gatehouse in relation to the Mezzanine Transaction which comprises a second ranking pledge over PropCo’s shares and a conditional assignment of PropCo’s rights under the Finance Lease.</td>
</tr>
<tr>
<td>Repayment:</td>
<td>Profit only, with bullet of principal upon maturity via sale of Property</td>
</tr>
<tr>
<td>Ranking:</td>
<td>Junior, behind the Finance Lease</td>
</tr>
<tr>
<td>Listing:</td>
<td>Application submitted for listing to the Channel Island Stock Exchange</td>
</tr>
</tbody>
</table>

3.7.2 Sukuk Ijarah

Definition:

Ijarah is a form of lease financing, on a particular asset and where, upon maturity the lessor sells the asset to the lessee upon completion of the lease payments. In Sukuk Ijarah, certificates of equal value are issued, representing a common share in the ownership of objects, usufructs or services in an investment project, and
that are tradable in the secondary market. The holders of Sukuk Ijarah, bear all the costs of maintenance of and damage to the property (AAOIFI, 2003).

Abdul Jalil and Abdul Rahman (2012) explained the Sukuk Ijarah contract in terms of a trustee acting on behalf of the investors to purchase a leasable asset from the issuer. The trustee leases the asset back to the issuer based on the rental that has been agreed upon by both parties. The issuer issues Sukuk and pays the rental fee for a specific period of time. After reaching the maturity date, the issuer purchases the asset back based on what is left after deducting the rental fees. Usually Ijarah structures are used for medium to long-term financing (Zureena, 2008).

- Essential Features:

Sukuk Ijarah is considered to be a flexible structure, and can be used for multiple financing needs. Moreover, Sukuk Ijarah are completely negotiable and can therefore be traded in the secondary market, since these Sukuk certificates represent ownership in real assets. Consequently, many Sukuk issuers choose the Ijarah structure. Sukuk Ijarah are issued by corporates, governments, None Governmental Organisations (NGO) and other organisations (Niser, 2010). Ariff and Safari (2015) justified the tendency toward Ijarah Sukuk issuance, since it promises higher yields than in short term trade finance (Murabahah) and has a longer financing horizon, an important feature for business investments.

- Structure Diagram

According to Nisar (2010) and Nader and Slim (2012) the essential steps involved in the Ijarah structure can be summarised as follows:

➢ The obligator sells certain assets to the SPV at an agreed pre-determined purchase price.
➢ The SPV raises financing by issuing Sukuk certificates in an amount equal to the purchase price.
➢ The funds raised are passed on to the obligator (as seller).
➢ A lease agreement is signed between the SPV and the obligator for a fixed period of time, where the obligator leases back the assets as a lessee.
➢ The SPV receives periodic rentals from the obligator.
➢ These periodic payments are distributed among the investors i.e. to the Sukuk holders.
➢ At maturity, or on a dissolution event, the SPV sells the assets back to the seller at a predetermined value. That value should be equal to any amount still owed under the terms of the Ijarah Sukuk.
Risk Associations

According to Khan and Ahmed (2001), Sundararajan and Luca (2002) and Tariq and Dar (2007) Sukuk Ijarah are exposed to different risks, depending on the choice of two different types of rates, fixed rate and floating rate. In respect of credit risk, default on rental payments is a serious concern, in particular with fixed rate Ijarah Sukuk. Ariff and Safari (2015) explain that Ijarah Sukuk are typically issued for periods longer than five years and can be considered as long-term debt certificates. The long maturity increases risk that the SPV will default. Typically, the investors receive a direct guarantee from the issuer of the SPV’s obligations (Wilson, 2008). This guarantee also includes the obligation by the issuer to repurchase the asset from the SPV at the end of the Ijarah contract at the original sale price.

Wilson (2008) suggests that SPV does not have any of the risks associated with banks due to the SPV’s nature. This implies that the SPV is bankruptcy remote. If the issuer faces bankruptcy, the creditors to the issuer cannot claim the assets held by the SPV or otherwise interfere with the rights of the Sukuk-holders with respect to the underlying assets (Gurgey and Keki, 2008). As a result, the use of the SPV to facilitate the Ijarah structure is attractive to both issuers and investors, which justifies the relatively high legal establishment costs.

Kamali (2007) observes that the fixed and predetermined nature of the rental cash flows reduces risk, because the Ijarah Sukuk holders receive a steady income, which is generally safer than the returns on common stocks. Against this, he notes the risks arising from general market conditions, price movements of real assets, ability of the lessee to pay the rental or instalments, and maintenance and insurance costs. Kamali (2007) concludes that, because of these risk factors, the expected return on some Ijarah Sukuk may not be precisely
predetermined and fixed. Thus, the fixed rental may only represent a maximum that is subject to some possible deductions (Ariff and Safari, 2015).

The rate of return risk is considered to be high in fixed rate Ijarah Sukuk, as the rate remains fixed for the entire maturity of the issuance. In contrast, floating rate Ijarah Sukuk have lower exposure to this risk, as it exists only within the time of the floating period, which is normally six months. Sukuk Ijarah may be exposed to price risk, because of the impact of market risk on the prices of the underlying assets. Price risk, however, is typically managed by the guarantees noted above. Finally, there are risks related to the costs of repair and maintenance of the underlying assets.

Example:
A manufacturer wants to buy a new factory costing £1,000,000 but does not have enough funds. To raise these funds through Sukuk Ijarah the manufacturer issues Sukuk certificates with a principal value of £1,000,000.

Investors subscribe to the Sukuk certificates through an SPV that is set up by the Sukuk issuer (the manufacturer). The SPV purchases the factory using the funds from the selling party (the manufacturer) in a spot sale. The SPV then leases the factory to the manufacturer for total lease payments of, say £200,000. The lease agreement is for the same term as the maturity of the Sukuk. The amount of each rental is equal to the periodic distribution amount payable under the Sukuk at that time. This amount (£200,000) may be calculated by reference to a fixed rate or variable rate (e.g. LIBOR or EIBOR) depending on the denomination of the Sukuk issued and subject to mutual agreement of the parties in advance. The SPV pays each periodic distribution amount to the investors using the rental it has received from the lessee (£200,000 in total). Upon maturity, the SPV sells back the factory to the seller (manufacturer) at a value equal to the principal amount of the investors’ capital (£1,000,000). Moreover, during the period of the lease, the SPV as the owner of the factory appoints a service agent for the lease management of the factory. Finally, the SPV returns the sale value of the factory (£1,000,000) to the investors, which is in addition to the profit generated from the lease over the period of the Sukuk (£200,000).

Example from the Sukuk market:

Table 9: Example of Ijarah Sukuk

<table>
<thead>
<tr>
<th>Sukuk name/Date:</th>
<th>Qatar Global Sukuk, October 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issuer:</td>
<td>Qatar Global Sukuk QSC</td>
</tr>
<tr>
<td>Type of Sukuk structure:</td>
<td>Sukuk Ijarah and based on certain land parcels in Qatar</td>
</tr>
<tr>
<td>Obligor</td>
<td>State of Qatar (lessee of leased assets)</td>
</tr>
<tr>
<td>Purpose of Offering</td>
<td>Construction of Hamad Medical City</td>
</tr>
<tr>
<td>Amount:</td>
<td>US$ 700 million</td>
</tr>
<tr>
<td>Term:</td>
<td>7 years</td>
</tr>
<tr>
<td>Expected Profit Rate:</td>
<td>Semi-annual lease rentals (Libour + credit spread + amortisation payment)</td>
</tr>
<tr>
<td>Security:</td>
<td>Credit enhancers guaranteed by Qatar Government</td>
</tr>
<tr>
<td>Redemption/ Principles repayment</td>
<td>With rental payments (amortization with rental payments)</td>
</tr>
<tr>
<td>Ranking:</td>
<td>A+ (S&amp;P)</td>
</tr>
</tbody>
</table>
3.7.3 Sukuk Istisna

Definition:

*Istisna* financing is a contract of sale of specified items to be manufactured or constructed, with an obligation on the part of the manufacturer or builder (contractor) to deliver them to the customer upon completion (AAOIFI, 2010). Sukuk *Istisna* are certificates of equal value issued with the aim of mobilising funds to be employed for the production of goods so that the goods produced come to be owned by the certificate holders (AAOIFI, 2003). Saad and Mohamad (2012) clarified that the buyer will require a seller or contractor to deliver or construct the asset that will be completed in the future according to the specification given in the sale and purchase contract. In turn, both parties of the contract will decide on the sale and purchase prices as they wish and the settlement can be delayed or arranged based on the schedule of the work completed.

Essential Features:

Sukuk *Istisna* is a debt based instrument, since the ownership is of a future asset that does not currently exist. It is mostly used in the construction industry, and is a structure especially suited for financing large infrastructure projects. The Sukuk holders own the asset and are entitled to the sale price of the Sukuk, or the sale price of the asset sold on the basis of a parallel *Istisna*, if any, explained as follows. The contractor in Sukuk *Istisna* is permitted to enter into a parallel *Istisna* contract with a subcontractor. Thus, a financial institution may undertake the construction of a facility for a deferred price, and sub-contract the actual construction to a specialised construction firm.

*Shariah* prohibits the sale of these debts Sukuk to a third party at any price other than their face value. Clearly such Sukuk cannot be traded in the secondary market.

Structure diagram

According to Nisar (2010) and Nader and Slim (2012), the essential steps involved in *Istisna* structure are:

- The SPV issues Sukuk certificates to raise funds for the project.
- The Sukuk issue proceeds are used to pay the contractor/builder to build and deliver the future project.
- Title to assets is transferred to the SPV.
- The property/project is leased or sold to the end buyer. The end buyer pays monthly installments to the SPV.
- The returns are distributed among the Sukuk holders.

To illustrate the difference between a simple *Istisna* and a parallel *Istisna*, a simple *Istisna* is outlined in the following diagram.
In the simple Istisna the buyer already has sufficient financing to purchase the project, and can deal directly with the seller (the manufacturer). Where the buyer does not have sufficient financing a parallel Istisna can be used, as in the following diagram. The parallel Istisna involves the customer (the buyer), an Islamic bank (the seller), and the manufacturer (the contractor). More complex parallel Istisnas will also involve the manufacturer entering into Istisnas with sub-contractors.

A more complete diagram of an example of an Istisna contract is shown in the diagram below.
Risk associations

According to Kahn and Ahmed (2001), Sundararajan and Luca (2002) and Tariq and Dar (2007), the risk associated with *Istisna* Sukuk is similar to *Murabaha* Sukuk as both of them are classified as debt based Sukuk. Therefore, *Istisna* Sukuk face serious risk factors in terms of liquidity in so far as it is a non-tradable Sukuk. Also, it is exposed to a very high rate of return risk due to the fixed rate on the Sukuk remaining for the entire maturity of the issuance. In addition, *Istisna* Sukuk have higher exposure compared with *Ijarah* Sukuk because the asset is being developed over the period of the Sukuk maturity.

Example:

A customer wants a manufacturer to construct a machine. The manufacturer requires £1,000,000 to finance the construction of the machine and to provide a reasonable profit margin. To raise the £1,000,000 through Sukuk *Istisna* the manufacturer issues Sukuk *Istisna* through the SPV to subscribe investors’ capital of £1,000,000. The SPV requests the manufacturer, on behalf of the customer to construct the machine, according to the precise specifications required by the customer and for future delivery. The SPV typically pays the price of the requested machine by way of staged payments against certain milestones to the manufacturer as consideration for the assets in an aggregate amount equal to the Principal Amount of £1,000,000. The SPV undertakes to sell the completed machine to the customer for £1,200,000. This amount reflects Sukuk’s profit which is equal to the Periodic Distribution Amount payable under the Sukuk at that time. Then SPV returns the principal amount £1,000,000 to investors in addition to the profits of £200,000.

Example from the Sukuk market:

*Table 10: Example of Istisna Sukuk*

<table>
<thead>
<tr>
<th>Sukuk name/Date:</th>
<th>Islamic Development Bank (IDB) Trust Certificates, August 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issuer:</td>
<td>Solidarity Trust services Limited (through ICD), Saudi Arabia</td>
</tr>
<tr>
<td>Type of Sukuk structure:</td>
<td>Balance sheet of IDB combined <em>Ijarah, Istisna and Murabahah</em></td>
</tr>
<tr>
<td>Obligor</td>
<td>Islamic Development Bank (IDB), Saudi Arabia</td>
</tr>
<tr>
<td>Purpose of Offering</td>
<td>Financing other assets</td>
</tr>
<tr>
<td>Amount:</td>
<td>US$ 400 million</td>
</tr>
<tr>
<td>Term:</td>
<td>5 years</td>
</tr>
<tr>
<td>Expected Profit Rate:</td>
<td>Semi-annual lease rentals (Fixed 3.625%)</td>
</tr>
<tr>
<td>Security:</td>
<td>Credit enhancers by guaranteed by IDB</td>
</tr>
<tr>
<td>Redemption/ Principles repayment</td>
<td>Purchase of assets at maturity at sale price</td>
</tr>
<tr>
<td>Ranking:</td>
<td>AAA (S&amp;P)</td>
</tr>
</tbody>
</table>
3.7.4 Sukuk Musharakah

Definition:

*Musharakah* means partnership. Usmani (2007) states that *Musharakah* is a form of financing where a few partners enter into an agreement to form an enterprise in which all the partners share the profits or losses derived from the joint venture. Hence, the profits gained are distributed among investors based on an agreed profit sharing ratio. However, if the business suffers a loss, the losses will be borne by all the investors based on the ratio that they invest in (Tariq, 2004). AAOIFI *Shariah* standard 17 (2003) defines Sukuk *Musharakah* as certificates of equal value issued with the aim of using the mobilised funds for establishing a new project, developing an existing project or financing a business activity on the basis of any partnership contract so that the certificate holders become the owners of the project or the assets of the activity as per their respective shares, with the *Musharakah* certificates being managed on the basis of participation or *Mudaraba* or an investment agency. The investors will form an enterprise and buy the Sukuk from the issuers through a trustee. The management of the business will be done by the issuers and they will pay a management fee. The profit obtained from the joint venture will be distributed to the investors through the trustee (Abdul Jalial and Abdul Rahman, 2012).

However, if the business suffers a loss, the issuers have to pay back the investors. Ahamed and Dzuljastrri (2009) discuss a variation of *Musharakah*, namely, *Musharakah Mutanaqish* or diminishing *Musharakah*. The structure of *Musharakah Mutanaqish* is similar to *Musharakah*, but the periodic payment includes the profit plus cost of buying back the asset as opposed to *Musharakah* where the periodic payment is to pay only for the profit; but this payment will only be made if the business succeeds. Upon maturity, the asset will be fully paid and owned by the customer. Diminishing *Musharakah* is used in Islamic mortgage financing.

Essential Features:

Sukuk *Musharakah* are an option for mobilising the funds for establishing a new project or developing an existing one or financing a business activity on the basis of partnership contracts. The Sukuk holders become the owners of the project or the assets of the activity as per their respective shares. These *Musharakah* Sukuk can be treated as negotiable instruments and can be bought and sold in the secondary market.

Structure diagram

According to Nisar (2010) and Nader and Slim (2012) the essential steps involved in *Istisna* structure are:

- A corporate and the Special Purpose Vehicle (SPV) enter into a *Musharakah* arrangement for a fixed period and an agreed profit-sharing ratio. Also, the corporate undertakes to buy *Musharakah* shares of the SPV on a periodic basis.

- The corporate (as Musharik) contributes land or other physical assets to the *Musharakah*.

- The SPV (as Musharik) contributes cash i.e. the issue proceeds received from the investors to the *Musharakah*.
➢ The *Musharakah* appoints the corporate as an agent to develop the land (or other physical assets) with the cash injected into the *Musharakah* and sell/lease the developed assets on behalf of the *Musharakah*.

➢ In return, the agent (i.e. the corporate) will get a fixed agency fee plus a variable incentive fee payable.

➢ The profits are distributed to the Sukuk holders.

➢ The corporate irrevocably undertakes to buy at a pre-agreed price the *Musharakah* shares of the SPV on say a semi-annual basis and at the end of the fixed period the SPV would no longer have any shares in the *Musharakah*.

*Figure 43: Musharakah Sukuk structure*

![Diagram of Musharakah Sukuk structure](image)

*Source: Dubai International Financial Centre Sukuk Guidebook, 2009*

☐ Risk associations

Khan and Ahmed (2001), Sundararajan and Luca (2002) and Tariq and Dar (2007) discussed the risk factors that have a direct link with the *Musharakah* structure. Kahn and Ahmed (2001) claimed that the *Musharakah* model has a high potential for default risk, given the credit risk of non-payment by the entrepreneur when it is due. This is because Sukuk *Musharakah* is equity based and adopts a profit and loss scheme. However, the Sukuk issuer could mitigate credit risk by relying on the strength of the entire balance sheet. In addition, the *Musharakah* Sukuk profile has exposure to rate of return risk, as as the rate is not indexed with a benchmark such as LIBOR. Nevertheless, this risk can be reduced by linking with some benchmark index.
Example:

This is an example of diminishing Musharakah. An airline charter company wishes to buy an aircraft for use in its ordinary course of business, costing £2,000,000. The company raises £1,000,000 of the purchase price by issuing Sukuk Musharakah. The company issues the Sukuk through setting up an SPV to subscribe investors’ capital of £1,000,000 for the Sukuk certificates. The SPV, in partnership with the company, purchases the airplane, for £2,000,000. The initial ownership of the SPV in the Musharakah is 50%. Over time the SPV sells its share of units in the Musharakah to its partner (the airline company) in a deferred payment schedule. The total payments by the company to the SPV total £1,200,000, comprising £200,000 profit and £1,000,000 return of capital. The SPV pays each periodic distribution amount to the investors, passing on to the Sukuk holders the payments received by the sale of units to the company.

Example from the Sukuk market:

Table 11: Example of Musharakah Sukuk

<table>
<thead>
<tr>
<th>Sukuk name/Date:</th>
<th>Wings-FZCO Sukuk, June 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issuer:</td>
<td>Wings FZCO</td>
</tr>
<tr>
<td>Type of Sukuk structure:</td>
<td>Sukuk Musharakah</td>
</tr>
<tr>
<td>Obligor</td>
<td>Emirates Airlines</td>
</tr>
<tr>
<td>Purpose of Offering</td>
<td>Construction of Group Headquarters and Engineering Centre</td>
</tr>
<tr>
<td>Amount:</td>
<td>USD$ 550 million</td>
</tr>
<tr>
<td>Term:</td>
<td>7-year US Dollar Floating Rate Notes</td>
</tr>
<tr>
<td>Expected Profit Rate:</td>
<td>1st coupon after year, thereafter semi-annually (0.75% above USD LIBOR rates)</td>
</tr>
<tr>
<td>Security:</td>
<td>Credit enhancers by the strength of Emirates and UAE</td>
</tr>
<tr>
<td>Redemption/ Principles repayment</td>
<td>Bullet payment at redemption</td>
</tr>
<tr>
<td>Rating</td>
<td>Listed with Luxemburg SE</td>
</tr>
</tbody>
</table>
3.7.5 **Sukuk Mudarabah**

- **Definition:**

  *Mudarabah* is a partnership in profit whereby one party provides capital (Rab al-maal) and the other party provides labour (*Mudarib*) (AAOIFI, 2010). In the Sukuk context, certificates that represent projects or activities are managed on the basis of *Mudarabah* by appointing one of the partners or another person as the *Mudarib* (fund manager) for the management of the operation (AAOIFI, 2003). In Sukuk *Mudarabah* ownership of units of equal value in the *Mudaraba* equity are registered in the names of the Sukuk holders on the basis of undivided ownership of shares in the *Mudarabah* equity and its returns according to the percentage of ownership of shares. The owners of the Sukuk are the *Rabbul-mal*, and the entrepreneur or manager is the (Saad and Mohamad, 2012). The profit calculation is based on a pre-agreed ratio between the Sukuk parties. In the event of a business loss, the loss shall be borne solely by the provider of the capital (except in case of, for example, negligence on the part of the manager).

- **Essential Features:**

  The flexibility of the investment platform of the *Mudarabah* financing model makes it an attractive option to use for encouraging public participation in big investment projects. Gait and Worthington (2007), Nisar (2010) and Saad and Mohamad (2012) stated several distinctive characteristics of Sukuk *Mudarabah* as summarised below:

  - The Manager/SPV who receives the fund collected from the subscribers to the Sukuk *Mudarabah* can also invest his own fund. He will earn a profit for his capital contribution in addition to his share in the profit as *Mudarib*.
  - Neither the prospectus nor the Sukuk *Mudarabah* should contain a guarantee from the issuer or the manager for the fund for the capital or a fixed profit, or a profit based on any percentage of the capital. Thus:
    - The prospectus or the Sukuk *Mudarabah* issued pursuant to it, may not stipulate payment of a specific amount to the Sukuk *Mudarabah* holder,
    - The profit is to be divided, as determined by applying the rules of *Shariah*; and
    - To ensure transparency the profit and loss account of the project must be published and distributed to the Sukuk *Mudarabah* holders.
  - It is *Shariah* permissible to create reserves for contingencies, such as loss of capital, by deducting from the profit.
  - The prospectus can also contain a promise made by a third party, totally unrelated to the parties to the contract, in terms of legal entity or financial status, to donate a specific sum, without any counter benefit, to meet losses in the given project, provided such commitment is independent of the *Mudarabah* contract.
  - On expiry of the specified time period of the subscription, the Sukuk holders are given the right to transfer the ownership by sale or trade in the securities market at their discretion.
According to Nisar (2010) and Nader and Slim (2012) the essential steps involved in Mudarabah structure are:

➢ The Mudarib enters into an agreement with the project owner for the construction/commissioning of a project.
➢ The SPV issues Sukuk to raise funds.
➢ The Mudarib collects regular profit payments and final capital proceeds from project for onward distribution to investors.
➢ Upon completion, the Mudarib hands over the finished project to the owner.

Figure 44: Mudarabah Sukuk structure

Source: Dubai International Financial Centre Sukuk Guidebook, 2009

Risk associations

As the Mudarabah financing model is considered part of the Musharakah financing model their risk profiles are similar. In both the Musharakah and Mudarabah contracts, the risk profiles of potential partners (Mudarib or Musharakah partner) are crucial considerations, and due diligence is required for evaluating the risk of such contracts (Febianto, 2012). Kahn and Ahmed (2001), Sundararajan and Luca (2002) and Tariq and Dar (2007) discuss the risks associated with the Mudarabah Sukuk structure. They found that the true risks borne by Mudarabah Sukuk holders can be made transparent by disclosing the definition of Mudarabah profits, the level
and variability of these profits and in the profit equalization reserves (PER), as well as policies used in establishing and implementing the PER in order to estimate its variance and its correlation with the asset returns. Mudarabah is exposed to a high rate of return risk especially when the rate is not indexed with a benchmark such as LIBOR. In addition, the rate of return risk in the banking book is likely to be much more important than market risk in the trading book. The rate of return gap and duration gap applied to the banking book would provide measures of exposure to change in the benchmark rate of return, and the impact of their change on the present value of Sukuk earnings (Sundararajan, 2007).

Example

A manufacturer wishes to buy a new factory worth £1,000,000. To raise these funds through Sukuk Mudarabah the manufacturer issues Sukuk by setting up an SPV to subscribe investors’ capital of £1,000,000 for the Sukuk certificates. The SPV supplies the manufacturer with capital of £1,000,000 (as Rab al-maal, capital supplier, or sleeping partner) and the manufacturer provides the skills and work in operating the factory and selling the finished products from the factory to its customers. This agreement is set between the SPV (Rab al-Maal) as representing the Sukuk investors and the manufacturer (Mudarib, the active partner). In Sukuk terminology the manufacturer is the Originator. The SPV and Originator enter into the Mudarabah enterprise with the purpose of generating profits on the principal amount of £1,000,000. The profits generated by the Mudarabah enterprise, assumed to be £200,000 for example, are divided between the SPV (Rab al-Maal) and Originator, in accordance with the profit sharing ratios set out in the Mudarabah agreement. In turn, the SPV pays each periodic return to investors using the Mudarabah profits it has received under the Mudarabah agreement. Upon maturity, the manufacturer purchases the factory from the SPV at market value, or in the case of guarantees equal to the principal amount of subscribed Sukuk of £1,000,000. The SPV returns to investors the capital of £1,000,000 in addition to the distributed profits of £200,000.

Example from the Sukuk market:

Table 12: Example of Mudarabah Sukuk

<table>
<thead>
<tr>
<th>Sukuk name/Date:</th>
<th>Sipchem Sukuk, July 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issuer:</td>
<td>Saudi International Petrochemical Company</td>
</tr>
<tr>
<td>Type of Sukuk structure:</td>
<td>Sukuk Al-Mudarabah</td>
</tr>
<tr>
<td>Obligor</td>
<td>Saudi International Petrochemical Company</td>
</tr>
<tr>
<td>Amount:</td>
<td>US$ 480 million</td>
</tr>
<tr>
<td>Expected Profit Rate:</td>
<td>Floating rate 3 month SIBOR + Margin of 1.75%</td>
</tr>
</tbody>
</table>
Security: The Issuer shall grant in favour of the Sukuk holders’ Agent (acting for and on behalf of the Sukuk holders) a first priority accounts pledge of all amounts standing to the credit of the Reserve Account (the Account Pledge Agreement). The Account Pledge Agreement will be the only security granted in respect of the Mudarabah Sukuk and the only account secured will be the Reserve Account.

Redemption/ Principles repayment The Periodic Distribution Date falling on or nearest to 6 July, 2016 or any date falling not more than two months before the maturity date in connection with any financing of the redemption of the Mudarabah Sukuk.

Rating Unrated

3.7.6 Sukuk Salam

Definition:

In Islamic finance a sale contract is valid under the Shariah rules if the object forming the subject matter of the sale is in existence and in the physical or constructive possession of the seller. This is based on the principle of prohibition of Gharar, or unnecessary uncertainty. However, the exceptions to this general position are sales effected by Salam contracts (and the Istisna contracts already discussed above).

In its simplest form, a Salam contract involves the purchase of assets by one party from another party on immediate payment and deferred delivery terms (Sukuk Guidebook, 2009). In a Sukuk context, the concept of Sukuk Salam refers to a sale whereby the seller undertakes to supply a specific commodity to the buyer at a future date in return for an advanced price, paid in full on the spot. Hence, the price is cash, but the supply of the purchased good is deferred.

In addition, AAOIFI (2003) determines Sukuk Salam as ‘‘certificates of equal value issued for the purpose of mobilising Salam capital so that the goods to be delivered on the basis of Salam come to be owned by the certificate holders’’. Thus, the Salam principle is an advance payment of the price for goods to be delivered at a certain time in the future. Sukuk Salam have some similarities with conventional forward contracts; the principal difference is that the buyer in Salam pays the entire amount in full at the time of initiating the contract.

Salam-based securities may be created and sold by an SPV under which the funds mobilised from investors are paid as an advance to the company SPV in return for a promise to deliver a commodity at a future date. The SPV can also appoint an agent to market the promised quantity at the time of delivery perhaps at a higher price. The difference between the purchase price and the sale price is the profit of the SPV and hence to the holders of the Sukuk (Nisar, 2010).

Sukuk Salam have particular Shariah requirements, such as full payment by the buyer at the time of effecting the sale, the standardised nature of underlying asset, a sufficiently clear, accurate and complete statement of the quantity, quality, date and place of delivery of the asset, and the restriction that the purchased goods are
not re-sold before actual possession at maturity. Such transactions amount to the selling of debt (AAOIFI, Standard 10, 2002). This constraint makes Salam instruments illiquid and hence less attractive to investors. An investor will buy a Salam certificate if he expects the price of the underlying commodity to be higher on the maturity date.

☐ Essential Features:

According to AAOIFI Shariah standard 10 (2002) and Alsaeed (2012), Sukuk Salam are debt based instruments, and hence are non-tradable as they are considered to be a receivable. On the other hand, risk of Sukuk Salam can be mitigated by selling the underlying asset of the Salam contract by another Salam contract to the first contract. Therefore, the parties involved in Sukuk Salam are the issuer who sells the Salam asset, the subscribers are the buyers of that asset, the mobilised funds are the purchase price of the asset, and the Salam capital and certificate holders are entitled to the Salam asset, or the price of selling the asset on a parallel Salam basis.

☐ Structure diagram:

According to Nisar (2010) and Nader and Slim (2012) the essential steps involved in the Salam structure are:

➢ The SPV signs an undertaking with an obligator to source both commodities and buyers. The obligator contracts to buy, on behalf of the end-Sukuk holders, the commodity and then to sell it for the profit of the Sukuk holders.
➢ Salam Sukuk are issued to investors and the SPV receives the Sukuk proceeds.
➢ The Salam proceeds are passed onto the obligator who sells the commodity on a forward basis.
➢ The SPV receives the commodities from the obligator.
➢ The obligator, on behalf of Sukuk holders, sells the commodities for a profit.
➢ The Sukuk holders receive the commodity sale proceeds.
Risk associations:

Kahn and Ahmed (2001), Sundararajan and Luca (2002) and Tariq and Dar (2007) discussed the risk factors that have a direct link with the Salam structure. Generally speaking, Salam has a distinctive risk class because Salam has a fixed rate and non-tradable features. Therefore, Salam are exposed the credit risk which takes the form of settlement of payment risk arising when one party in a deal pays money (Kahn and Ahmed, 2001). Because of the Shariah condition on the prohibition of trading Salam Sukuk, there is a serious level of exposure to liquidity risk. This results in Salam Sukuk being exposed to serious price risk. However, through parallel contracts in Salam, these risks can be overcome (Tariq and Dar, 2007).

Example:

On November 1st a car dealer in Saudi Arabia has a wealthy client who wishes to purchase 2 customised luxury cars for £1,200,000 for delivery on 31st December. The car dealer requires £1,000,000 (£700,000 for the purchase of the cars from the manufacturer and £300,000 profit). To raise the £1,000,000 through Sukuk Salam the company issues Sukuk by setting up an SPV to subscribe investors’ capital of £1,000,000 for the Sukuk certificates. The company undertakes to supply the cars to the SPV on 31st December, in return for £1,000,000 paid on 1st November by the SPV. Also, on 1st November the SPV sells the cars through a parallel contract of Salam to deliver the cars to the wealthy client, also for delivery on 31st December, for payment of £1,200,000 in two equal instalments of £600,000, both instalments due before the delivery date. The 2 instalments of £600,000 are passed to the Sukuk holders’, giving the Sukuk holders a profit of £200,000 on their invested capital of £1,000,000. This illustrates the defining feature of the Salam contract of payment in advance for future delivery of a commodity.
Example from Sukuk market:

Table 13: Example of Salam Sukuk

<table>
<thead>
<tr>
<th>Sukuk name/Date:</th>
<th>Al Salam Sukuk, issuance number#153, January 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issuer:</td>
<td>Central Bank of Bahrain, Kingdom of Bahrain</td>
</tr>
<tr>
<td>Type of Sukuk structure:</td>
<td>Sukuk Al-Salam</td>
</tr>
<tr>
<td>Obligor</td>
<td>Government of the Kingdom of Bahrain</td>
</tr>
<tr>
<td>Amount:</td>
<td>Bahraini Dinar (BHD) 36 million</td>
</tr>
<tr>
<td>Term:</td>
<td>91 days</td>
</tr>
<tr>
<td>Expected Profit Rate:</td>
<td>1.00%, equivalent to 1.00% for the previous issue.</td>
</tr>
<tr>
<td>Security:</td>
<td>Credit enhancers guaranteed by Qatar Government</td>
</tr>
<tr>
<td>Redemption/ Principles repayment:</td>
<td>Return will be on monthly basis and the Sukuk redemption at maturity date which is on 23 April 2014</td>
</tr>
<tr>
<td>Rating:</td>
<td>Unrated</td>
</tr>
</tbody>
</table>

3.9 Evaluation of Sukuk Structures

From the above background, it is observed that each Sukuk structure has a distinctive risk profile influenced by the Shariah conditions behind the concept of the financing structure as well as the type of certificate. Therefore, the risks that Sukuk encounter vary according to the structure of the Sukuk; the risks of Sukuk Murabahah, which has a fixed return, differ from those of Sukuk Musharakah; the risks of Sukuk Istisna differ from those of Sukuk Ijarah; and so on. It is important to state that these risks also vary depending on the underlying assets of these Sukuk, be they fixed or movable assets, utilities or services (Alsharq Alawsat, 2008). A few studies have been conducted on Sukuk analysis. One of these studies, conducted by Abdul Jalil and Abdul Raham (2012) concerned a comparative analysis between two Sukuk structures in terms of long term tenure. They determined that the amount of profit gained from the Musharakah Mutanaqisah structure using a coupon rate of 4.5%, priced at par and tenure of five years was greater than the Ijarah structure where the price is at a discount. In addition, they computed and compared the profits obtained from Sukuk investment in Ijarah and Musharakah Mutanaqisah for a 3.5% coupon rate and priced at par for Sukuk with tenure of 12.5, 15, 17.5 and 19 years. By applying relevant models for profit calculation, taking into account the Ijarah and Musharakah Mutanaqish principles, they conclude that Sukuk Ijarah returns compare favourably with Sukuk Musharakah Mutanaqish, regardless of the number of years of the Sukuk, so long as it is a long term tenure. Tariq and Dar (2007) and Zaidi (2009) discussed Sukuk structures and investigated the risk associated with Sukuk structures. Zaidi (2009) concludes that the risk of Sukuk is broader than the risk of conventional bonds
due to Sukuk inheriting risk factors over and above credit risk, including market risk, Shariah risk, risks associated with the assets underlying Sukuk, and regulatory risk. Tariq and Dar (2007) discuss the Shariah compliant framework applying to Sukuk structures in order to contribute to risk mitigation. Wilson (2008) addresses the criticisms of Sukuk Ijarah related to linking distributions to LIBOR rates. He examines innovations in the structuring of Sukuk securities and the potential for novel structures based on Musharaka or a hybrid of different Sukuk structures. Wilson proposes adopting alternative benchmarks to LIBOR, such as benchmarks based on macroeconomic indicators of real economic activity, for example, GDP growth in the case of sovereign Sukuk and of company financial performance in the case of corporate Sukuk. However, GDP indicators may help in the case of Sukuk based on debt and for asset-based and asset-backed Sukuk, but perhaps not for Sukuk based on equity. This is because the former Sukuk rely on the economic environment of the Sukuk issuer and the assets attached to the Sukuk, while the performance of Sukuk based on equity are affected by the competence and efforts of the Sukuk parties such as the Mudarib (entrepreneur or manager). Saad and Mohamad (2012) analysed the performance of Sukuk structures in the Malaysian market over the period 2005 to 2010. They used a multivariate regression model to investigate the relationship between Sukuk yield and Sukuk structures. They conclude that there is a statistically significant relationship among variables. Most of the listed Sukuk are based on debt (68%) as compared to other Sukuk structures, and the majority come from the infrastructure and utilities sector (53%). Muhamed and Radzi (2011) identified the implications for Sukuk investors between choosing an asset based or asset backed structure, focusing on the Sukuk Ijarah structure as a case study. A default on asset based Sukuk is the same to investors as a default on unsecured bonds. No recourse can be expected against any of the assets used in the Sukuk. On the other hand, asset backed Sukuk may become more widely used as investors would have the right to take possession of the assets backing the Sukuk. They conclude that asset based Sukuk may be more suitable where legal title to assets cannot be transferred to investors. The asset based Sukuk is more appropriate when there are restrictions on foreign ownership of certain asset classes such as property asset. In addition, asset backed Sukuk may not be adequate in circumstances where the enforceability of assets may provide a challenge, such as sovereign owned assets.

Referring to the nature of Sukuk structures from the Shariah perspective, it is seen that the evolution of structures such as Sukuk Ijarah has been instrumental in increasing Sukuk issue size for issuers. Structures such as agency Sukuk (Wakalah) have allowed issuers to maximize the use of limited tangibles in an issuance and, thus, allowed them to issue a larger quantity than if they had used an Ijarah structure. As an example of such innovations, issuers such as Ooredoo have used assets such as airtime minutes via a Manfah (usufructs) structure under the Ijarah concept (Zawya, 2014).

A summary of Sukuk securitisation mechanisms has been provided by Alsaeed (2012). He evaluated the mechanisms for structuring Sukuk and affirmed that Sukuk are based on the following basic principles: first, transparency of privileges and unambiguous responsibilities for stakeholders. Second, the return on Sukuk funds must originate from the purpose of their issuance. Third, Sukuk must be backed by genuine underlying assets. Finally, Sukuk structures can only achieve their benefits if they are issued and traded on a large scale. According to Moody’s (2007, 2008), the major drawback is that Sukuk are usually held till maturity and an active secondary market has yet to develop.
3.10 Conclusion

This chapter discussed the regulatory framework, the various classification schemes for Sukuk, Sukuk securisation, and, for each of the main Sukuk structures, the definitions, key features, risk associations, structure diagrams, and some illustrative examples.

There are many different Sukuk structures. Sukuk are a very flexible form of financing, and within these main structures there are many variations and innovations. Furthermore, these structures can be combined in a variety of innovative ways. This great flexibility allows Sukuk to meet the needs of issuers and investors. The complications arising from having many different types of Sukuk structure have not slowed down the expansion and growth of the Sukuk market. However, each different Sukuk structure has its own nature and risk exposures, and further evaluation of Sukuk structures is required in order to support the further growth of the market. This chapter facilitates this study by a detailed discussion of Sukuk structures and securitization mechanisms.

The next chapter investigates further Sukuk structure risk, the risks that are associated with the different kinds of Sukuk structure.

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CHAPTER 4

SUKUK STRUCTURE RISK

4.1 Introduction

This chapter is based on a paper that has been accepted for publication in the Journal of Islamic Accounting and Business Research under the title “Understanding and Evaluation of Risk in Sukuk Structures” (2016, vol:8, iss:4).

The chapter moves from the general to the specific. First, risk is discussed from a general, non-formal, and philosophical perspective. Next considered is risk from the perspective of conventional modern finance. The discussion then moves to a discussion of risk in Islamic finance, then to the consideration of Sukuk risk, and finally to Sukuk structure risk.

Later, this analysis of Sukuk risk, and of Sukuk structure risk in particular, will be applied in the development of hypotheses on Sukuk risk/return profiles that will be tested using empirical data.

4.2 Risk

The Oxford English dictionary (2008, p342) describes risk as “hazard, a chance of bad consequences, loss or exposure to mischance”. Alexander, Frey and Emberchts (2005, p17) extend the risk definition to the finance context by stating that “risk is the quantifiable likelihood of loss or less than expected return”.

Risk has a critical meaning. It has been addressed in different subjects in business, with different meanings and with different methods of risk management. For instance, in Project Management, risk is considered as uncertain events that, when occurring will have an effect on the achievement of a project’s objectives. It consists of a combination of the probability of a perceived threat or opportunity occurring, and the magnitude of its impact on objectives (PRINC2 Manual Book, 2009).

While a variety of definitions of the term risk have been suggested. Under a holistic view, risk is open for interpretation and applied in various ways by different group of people (Bracken, Bremmer, and Gordon, 2008). Other approaches to risk are more specific, as in the definition first suggested by Adams (1995), who saw it as the probability that a particular adverse event occurs during a stated period of time, or results from a particular challenge.

There is common acceptance that risk is associated with uncertainty and that it comes with consequences (Hillson and Murray-Webster, 2007). According to Hillson and Murray-Webster (2007), there are two extreme schools of thoughts on the concept of risk and uncertainty, with one suggesting that universe by nature is uncertain and that prediction is a futile exercise. The other school suggests that advancement in technology and knowledge enables one to predict the future more accurately, thereby removing uncertainty. Hillson and Murray-Webster (2007) suggest that the concept of uncertainty relies on two key points namely:

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Variability: a situation where the outcome of a measured factor can be within a given range. It can also be referred as objective uncertainty as suggested by theory of individual choice under uncertainty (Machina, 2004).

Ambiguity: a situation where the outcome can either happen or not or where something totally different may happen in future. In the theory of individual choice under uncertainty, this is also known as subjective uncertainty (Machina, 2004).

The introduction of the concept of perceptions of risk brings attitude into the picture. Attitude drives the way in which risk is managed by organisations and individuals (Hillson and Murray-Webster, 2007). It is important to note here that attitude refers to actions of individuals or groups driven by perception of a certain situation.

Risk management is then viewed as a set of activities carried, out by individuals, groups or organisations using management policies and practices, based on these perceptions and attitudes (Bracken, Bremmer, and Gordon, 2008). Risk management can be defined as those steps involving in defining, identifying, analysing, processing, evaluating and communicating risk (Chapman, 2003).

The human factor plays a key role in risk management. Risk management cannot be completely undertaken by machines or robots alone, as risk management requires human judgement (Hillson and Murray-Webster, 2007). Qualitative risk assessment considers the probability and the impact on the objectives in both positive and negative aspects using human perception. On the other hand, quantitative risk analysis focuses on the application of mathematical models to identify, measure and manage risk (Hillson and Murray-Webster, 2007).

From the standpoint of finance, beginning from the work of Markowitz in the 1950s, financial risk management has led to development of highly sophisticated applications using various statistical and probability models (Thomas, 2000). For example, in advanced economies like the US and the UK, individuals are credit scored to assess the risk involved in lending. Banks, retailers, and other lending institutions use credit scores, given on basis of historical records leading to estimates of the probability of default, and to the acceptance or rejection of lending requests (Sager, 2010). Vast databases, recording many millions of such transactions are stored for future analysis. These records help the banks to assign customer credit ratings. The process of credit scoring introduces a bias against people with bad credit scores, who then stand no chance of gaining access to lending (Thomas, 2000).

Furthermore, banks have now extended credit analysis to include behavioural scoring. Theoretical models, supported by statistical analysis have shown that economic conditions alter customer behaviour (Thomas, 2000). Probability theory can be reliably applied when background economic conditions remain the same. Behavioural scoring allows the extension of the probability models to take into account the impact of a changing economic environment on customer behavior (Sager, 2010).
In the context of Sukuk and conventional bonds, Fabozzi and Dattatreya (2005) demonstrate the return on a fixed income security, over the period from the day it is purchased to the day it is sold, can be divided into two parts: (1) the market value of the security when it is eventually sold and (2) the cash flows received from the security over the time period that it is held, plus any additional income from reinvestment of the cash flow. Several environmental factors affect one or both of these two parts. They define the risk of the security as a measure of the impact of these environmental factors on the security’s return. Sundararajan (2007) commented that, with respect to Sukuk, effective risk management must recognize that, in addition to the risks common to Sukuk and conventional bonds, there is a specific mix of risk factors particular to Islamic financial contracts.

These issues of risk management and disclosure are central to the New Basel Capital Accord (Base III), which will start to be implemented in March 2018, for both conventional and Islamic banks.

4.3 Philosophy of risk

According to Hansson and Howard (2010) the role of philosophy in the development of the risk sciences has been rather limited. He regards this as unfortunate, as he believes there are many problems in the analysis and management of risk which philosophers can contribute to solving. Several of the central terms, including the term ‘risk’ itself, are still in need of clarification. There is also a need to identify and understand implicit or “hidden” value assumptions in what are, allegedly, value-free risk assessments.

Risk management is designed to identify potential events that may affect the entity and allow it to manage risks within its risk appetite, to provide reasonable assurance regarding the achievement of the targeted organisation or business objectives. Historically, modern risk research originated in studies from the 1960s and 1970s that had a strong focus on chemical risks and on the risks associated with nuclear energy. This research drew on expertise in such fields as toxicology, epidemiology, radiation biology and nuclear engineering. It is still the case that most applications of risk management require specialised knowledge in one, or in several related disciplines. Medical expertise is required for the study of risks from diseases, engineering expertise in studies of technological failures, etc. Several disciplines have supplied overarching approaches to risk, which may be transferred to the analysis of risk in many other and diverse fields. Statistics, epidemiology, economics, psychology, anthropology and sociology are among the disciplines that have developed general approaches to risk. Hansson (2012) in his study outlines eight perspectives in the philosophy of risk. In the following he gives examples of particular issues arising from within each of these perspectives:

- Epistemology: issues and problems of trust in expertise and the division of epistemological labour.
- Decision theory: the decision maker’s degree of control over risks is often problematic and difficult to model.
- Philosophy of probability: posterior revisions of risk estimates pose a challenge to the standard model of probabilistic reasoning.
- Philosophy of science: issues of risk give us reason to investigate what influence the practical uses of knowledge can legitimately have on the scientific process.
- Philosophy of technology: the nature of safety engineering principles and their relationship to risk assessment need to be investigate.
• Ethics: the most pressing problem is how standard ethical theories can be extended or adjusted to cope with the ethics of risk taking.
• Philosophy of economics: the comparison and aggregation of risks falling to different persons give rise to new foundational problems for the theory of welfare.
• Political philosophy: issues such as trust and consent that have been discussed in connection with risk give us a reason to reconsider central issues in the theory of democracy.

Sagar (2010) attributes the risk concept to probability theory. Probability theory has evolved over the ages, ever since Galileo introduced it as part of his observations on dice games (Webb, 1996). Primarily considered as a branch of mathematics, probability theory aims at studying and explaining the patterns arising from random experiments, which can be executed repeatedly and where the outcome is uncertain (Gut, 2005).

There are currently a number different accounts of the meaning of probability. In the frequency interpretation probability is explained in terms of the long run frequency of an event in a long series of repeated experiments. In the axiomatic approach a probability is anything that satisfies the formal rules of a particular probability calculus. In the Bayesian interpretation probability is explained in terms the degrees of belief of rational agents, where these degrees of belief can be inferred from observations of agents’ choices. There is dispute, and some confusion over whether these “Bayesian probabilities” should be regarded as measures of the psychological states of the agents, or whether they are measures of probabilities in some objective sense, i.e. whether Bayesian probabilities are “subjective” or “objective”. Within each of the frequency, axiomatic and Bayesian accounts of probability there is a variety of different interpretations (Ben-Haim, 2004). There is as yet no consensus as to what is the correct philosophical approach to probability, and there is still much debate on what is the correct resolution of these foundational issues (Cheeseman, 1985).

Probability is often contrasted with uncertainty. To talk of probability indicates that at least some quantifiable information about future potential outcomes can be obtained from a study of the patterns in past historical data. Uncertainty concerns situations where no such quantifiable analysis is possible, and where it is more a matter of personal judgement. The importance of judgement is well supported by the approach taken by many Keynesians, who claim that there are many situations where real uncertainty exists and where no amount of statistical analysis can provide accurate indicators for future (Davidson, 1991).

4.3.1 Risk in conventional finance

In conventional finance risk is usually measured as the standard deviation of returns (Doff, 2008). The basic portfolio model was developed by Harry Markowitz (1952, 1959), who presented precise calculations for the expected rate of return and risk (the standard deviation of returns), both for individual assets and for portfolios of assets (Reilly and Brown, 2012). These are summarised as follows:

a) The calculation of the expected rate of return of an asset requires first an estimate of the probability distribution of returns. These probability estimates are obtained from the historical record of past returns modified by the future expectations of an investor. The expected rate of return of an asset is defined formally as follows:
The expected return of asset $A = E(R_A) = (P_1)(R_1) + (P_2)(R_2) + \ldots + (P_n)(R_n)$, where $R_1, \ldots, R_n$ are the $n$ possible returns on asset $A$ and where, for each $i = 1, \ldots, n$, $P_i$ is the probability of return $R_i$. Thus, the expected return is the mean return, the weighted average of the returns where the weights are the probabilities.

b) The risk of an asset, according to the Markowitz (1959) model, is the dispersion of possible returns, where dispersion is measured by the statistical concept of standard deviation. The variance of returns can also be used, though the standard deviation is used more commonly. Most investors want to quantify this dispersion using statistical techniques. The formula for variance is defined as follows:

The standard deviation of returns on asset $A$, $\sigma_A = \sqrt{\left\{ (P_1)(E(R_A) - R_1)^2 + (P_2)(E(R_A) - R_2)^2 + \ldots + (P_n)(E(R_A) - R_n)^2 \right\}^{1/2}}$ where $E(R_A)$ is the expected return defined above, $R_1, \ldots, R_n$ are the $n$ possible returns on asset $A$ and where, for each $i = 1, \ldots, n$, $P_i$ is the probability of return $R_i$. The variance is the square of the standard deviation.

Under Markowitz theory (1959), the major sources of uncertainty or risk include: business risk, financial risk, liquidity risk, exchange rate risk and political risk:
1) Business risk is the uncertainty caused by the firm characteristics specific to the nature of the firm’s business.
2) Financial risk is the uncertainty introduced by the firm’s capital structure. For example, financial risk increases with leverage.
3) Liquidity risk is the uncertainty introduced by the secondary market for the firm’s securities. The more difficult it is to liquidate the security; the greater is the liquidity risk.
4) Exchange rate risk is the uncertainty of returns introduced when the currency denomination of the investor differs from the currency in which the security is denominated.
5) Political risk or "country risk" is the uncertainty of returns caused by the probability of an adverse change in the political or economic environment of a country.

The total risk of an asset (measured by the standard deviation of returns) is made up of two components, systematic risk and non-systematic risk (Reilly & Brown, 2012):

a) Systematic risk, also called "market risk" or “non-diversifiable risk”, is that caused by market wide risks, such as volatility of the money supply or interest rates, oil price changes, government policies, natural disasters and financial crises, which cannot be hedged by diversification.

b) Non-systematic risk, "non-market risk" or “diversifiable risk”, is the risk specific to the firm, industry, or geographical location, which can be hedged by diversification. These risks include such things as unqualified staff, bad management conditions, and threats from competitors.

According to the classification of total risk into systematic and non-systematic risk, Alsayed (2013) redefined the sources of risk discussed earlier; systematic risk includes exchange rate risk and political risk, while, non-systematic risk includes business risk, financial risk and liquidity risk.

Risk management in finance depends on two main strategies, diversification and hedging which are:
1) Diversification

Diversification is the spreading of wealth over a variety of investment opportunities to reduce risk by dividing investments across many relatively low-correlated assets, companies, industries, and countries. The effect of reducing risk by including a large number of investments in a portfolio is called diversification.

Because of diversification, the standard deviation of the returns of a portfolio is less than the average of the standard deviation of the returns of each of the individual investments. The diversification gains achieved by adding more investments will depend on the degree of correlation among the investments. The degree of correlation is measured by using the correlation coefficient. When the investor combines stocks that are not perfectly positively correlated with each other portfolio risk is reduced. The greater the negative correlation the greater the reduction in risk achieved by adding it to the portfolio.

The purpose of diversification is to reduce the standard deviation of the total portfolio by increasing the number of securities included in the portfolio (Bodie, Kane and Marcus, 2005). Evans and Archer (1968) and Tole (1982) compute the standard deviation for portfolios of increasing size up to 20 stocks. The results indicate that the major benefits of diversification are achieved with about 90% of the maximum benefit of diversification obtained in portfolios of 12 to 18 stocks. Figure (1) shows this result.

Figure 46: The effect of diversification on total risk

As indicated by Figure (1), unsystematic risk can be minimised by increasing the number of stocks (or assets) included in the portfolio, which maximise the benefits from diversification. Systematic risk cannot be reduced by diversification, because this risk is caused by economic and political factors or by natural phenomena which affect all stocks.
Systematic risk can be measured using the Capital Asset Pricing Model (CAPM). The CAPM defines non-diversifiable risk to be the non-diversifiable portion of the total risk. This measure of non-diversifiable risk is called the Beta coefficient, and it calculates the security’s systematic risk compared to that of the market portfolio.

The systematic risk of an individual asset is derived from the following a regression model:

\[ R_i = \alpha_i + \beta_i R_m + \varepsilon \]

Where \( R_i \) is the return on asset \( i \), \( R_m \) is the return of market portfolio and the slope of this line is the coefficient beta \( \beta \). (Reilly and Brown, 2012). Beta is a measure of systematic risk. It measures the sensitivity of a stock’s returns to changes in returns on the market portfolio.

2) Hedging

Normally a hedge consists of taking an offsetting position in a related security, such as a futures contract, for example, where a diversifiable portfolio of stocks can be hedged by taking a short position in a stock index futures. Falls (gains) in the portfolio are offset by gains (losses) on the futures position, thus volatility (Reilly and Brown, 2012).

Hedges can be constructed from many types of financial instruments, including bonds or Sukuk, stocks, forward contracts, swaps, options and futures contracts.

Hedging works as purchase of a risky asset to reduce the risk portfolio. The negative correlation between hedge asset and the initial portfolio turns the volatility of the hedge asset into a risk reducing feature. When a hedge asset is perfectly negatively correlated with initial portfolio, it serves as a perfect hedge and works like an insurance contract on the portfolio (Bodie et al., 2005).

The risk management techniques of diversification of conventional finance are applicable to risk management in Islamic finance

4.4 Risk in Islamic finance theory

In the Islamic financial system risk is an essential element of profit making. Risk forms the basis of profit in that both profits and losses are shared in a joint enterprise. Just as profit is the lifeblood of the Islamic economic system, so too is the assumption of risk. Any commercial partnership in which the profits are shared between partners and not the risk is not a valid Islamic commercial transaction. Both profits and risks are shared in trade concept.

Islam does not object to trade, nor does it simply prohibit contracts just for the sake of it. However, Islam is against guarantees in trade, as the Prophet Mohammed peace be upon him said: “al-kharaj bil-Dhaman”, which bases the entitlement to revenue on a corresponding liability for bearing losses. In Shariah it is prohibited for an individual or institution to earn a profit without shouldering a liability. For example, the capital provider in Mudaraba-like transactions is entitled to profit because all operational losses (those not caused by negligence
or misconduct on the part of Mudarib) will be debited from his capital (Al maal). On the other hand, a lender in Qard, or risk-free loan, cannot take any compensation or reward from a borrower, as his loaned money is not subject to operational risks (the borrower is obliged to return the loan principal in full at the specified payback time).

Iqbal (1997), Wilson (2008), Elfakhani and Hassan (2005), Asutay (2010) and Akram, Rafique, and Alam (2011) have all emphasised that Islamic finance structures essentially associate profit with risk. Risk is a component of trade, and shapes the behavioural norms of individuals in operationalising the system. Islamic finance adopts the risk sharing model in some products which shows the nature of the relationship between capital and work. Products such as equity based structures like Mudaraba and Musharakah may be considered one of the best methods in establishing justice between work effort and return, and between work effort and capital. Indeed, the participatory nature in Islamic financing methods is reflected in the profit and loss sharing theory. In Islamic financial instruments, capital and labour merge to establish a partnership. The requirement for risk sharing is an essential feature of the risk management framework for Islamic finance introduced in Junaid and Azhar (2010), namely, that:

a) Transactions should be backed by real assets.

b) Ownership of assets should be genuine, i.e. legal ownership should reflect the underlying economic reality.

c) Risk depends on real asset values.

d) Transactions should be free of Riba and Gharar.

e) Real investment is permitted, while speculation is forbidden.

f) Fixed, or guaranteed, rates of return are not permitted.

While risk cannot be avoided in Islamic finance, Islam permits, and recommends, taking prudent precautions to mitigate risks. In particular, it is permitted to make the mitigation of risks one of the key aims in the design of Islamic financial instruments. Risk management is a fundamental issue in Islamic finance, since Islamic financing is based on trade, with all of its attendant risks, while conventional financing is based on debt. Risk is associated with all Islamic financial instruments, including Sukuk. In this regard issuers and investors view Sukuk with great interest. For issuers, including government agencies, multinational corporations, and development institutions, Sukuk help with meeting funding requirements for large infrastructure projects and business expansion. From the investor’s perspective Sukuk can reduce investment risks. The value of Sukuk is largely stable, as it is asset backed or at least asset based, the investment time horizon of Sukuk is fixed, further reducing the risk profile, and Sukuk also help investors to reduce risk through portfolio diversification. Given these benefits to both issuers and investors, the high historical rates of growth of the Sukuk market are expected to continue for the foreseeable future.

Despite this bright picture, Sukuk as Islamic investment instruments, and the Islamic finance industry in general, faces several unique risks. Since Islamic financial institutions do not provide a guaranteed return in exchange for customers’ deposits or investments, investors may move their money to other financial institutions should the returns not match their expectations. Thus, Islamic financial institutions face liquidity risk, with the possibility of customers withdrawing funds too quickly. To add to this, the financial institution
may also be required to pay returns to fund providers even if the underlying assets do not earn profits. These risks may, to some extent, be managed through the establishment of a liquid inter-bank market.

Partnership financing modes are recommended as forms of risk management in Islamic finance. The financier provides equity capital and shares in the risks and rewards of the venture. The capital structure of partnership may itself act as its own risk management mechanism, since the partnership structure encourages the partners themselves to make the required efforts to identify, measure, and manage the risks. It is notable that the catastrophic failures of risk management of the Wall Street investment banks, culminating in the financial crisis of 2008, resulted at least in part from the abandonment of the partnership structure in favour of the corporate structure, which broke the mechanism for sharing risks and rewards that existed in the investment banking partnerships. The social and community ties so central to the Islamic way of life are also a means of risk management for individuals, households and businesses. The risk management mechanism in Islamic finance is based upon strong social relationships as a means of accessing help. The risk management of physical assets in Islamic finance, particularly for businesses, revolves around a combination of savings and physical risk management. Retirement benefits too are a combination of communal risk sharing and savings.

In contrast to conventional investors, Islamic investors also consider the ethical aspects of their investment, and the types of economic activities in which they invest (Erol, Kaynak and Radi, 1990). For example, Archer and Abdel Karim (2006) point out that while the insights of conventional financial theory apply to Islamic investment, the restrictions which apply to the Islamic investor make investment at Islamic banks different from investment at conventional banks in several important respects:

1. In Islam, an investor must pay off his debts, and his death cannot cancel these debts. Since the full repayment of debts is a duty, limited liability arrangements are restricted by the Shariah, and are sometimes even considered to be unacceptable in Islamic culture.
2. A Muslim society would impose relatively little tax upon profits. This would facilitate re-investment of profits, although there are Islamic rules about how this should be done in a partnership.
3. Overall, an Islamic investor must avoid Riba in any form (given, charging and receiving). In addition, Islamic investors must also avoid forbidden economic activities which include producing or dealing in alcohol or drugs, unless needed for medical purposes (Segrado, 2005). These ethical requirements impose further dimensions of risk in Islamic finance that are generally not present in conventional finance. This opens the door to identifying the risks inherent in Islamic finance, and in particular those risk factors to which Sukuk are exposed.
4.5 Risks associated with Sukuk

The previous discussion in this thesis has indicated some, but not all ways, in which Sukuk may be less risky than their conventional counterparts. However, it is also the case that Sukuk are exposed to many dimensions of risk that do not arise with conventional bonds. According to the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI), Sukuk Investment Standard (17) there are 14 types of Shariah structures in Sukuk securitisation, and each of those structures follows a different type of sale contract that underlies the Sukuk securitisation. This raises the question of how to identify, evaluate and measure the risks of Sukuk, and develop methods for how to manage these risks. Research has seen the emergence of a number of risk models and risk management methods for quantifying and monitoring risk (Rosman, 2009). Such methods significantly augment perspectives on risks and the ability to control them. The following discussion develops a holistic picture of the risk of Sukuk, and discusses risk classification schemes based on extending and adapting certain risk classification schemes used in conventional finance.

4.5.1 Shariah compliance risks

Shariah compliance risk is the risk arising from the failure of an Islamic financial instrument or contract to comply with the Shariah. These include the risk that already existing financial instruments and contracts may subsequently be declared to be Shariah non-compliant. Recent research focuses on Shariah compliance risks include Rosly and Sanusi (1999), Al-Amine (2008) and McMillen (2016) with critical evaluation of Shariah compliance risk interpretations among Shariah schools. For example, the application of bay al-ינاح (purchasing on credit) and bay al-دائن (sale of debt) contracts for Sukuk issuance in Malaysia, and criticism of the interest rate benchmarking and guarantee features in Sukuk operations, and Usmani (2008), with criticism of the current Sukuk mechanisms on asset ownership, guarantee, and Sukuk pricing benchmarks. More recently, Dusuki and Mokhtar (2010) criticise asset ownership in current Sukuk mechanisms, and Al-Jarhi and Abozaid (2010) discuss Shariah issues in current Sukuk structures in a paper presented to the OIC fiqh academy conference.

Alsayed (2013), however, emphasises that Sukuk currently operate within an interest based financial system, and consequently that risk management in Sukuk is very complicated and difficult within the boundaries specified by the Shariah. She argues that scholars should therefore allow for some flexibility in structuring Sukuk.

Shariah compliance risk is of fundamental importance in Islamic finance. Concern over the possible Shariah non-compliance of Islamic financial securities is widespread, and the issues are currently far from being resolved.

4.5.2 Regulatory and supervisory frameworks

Sukuk researchers have highlighted various risks underlying the structures of Sukuk, including Khan and Habib (2001), Jobst (2007), Tariq and Dar (2007), Jabeen and Javed (2007), Sundararajan (2007), Wilson (2009), Nanaeva (2010), Said (2011), Majid, Shahimi and Abdullah (2011), Alsaeed (2012), Noor and Shahimi (2013), and Alsayed (2013). Hence, this alerts both Sukuk issuers and investors to understand the comprehensive picture of Sukuk risk-based supervision needed for Islamic investment, supported by a clear strategy to build up risk management processes at the individual institutional level, and robust legal, governance and market
infrastructure at the national and global levels (Sundararajan, 2007). In recognition of this need, the international community has established the Islamic Financial Services Board (IFSB), headquartered in Kuala Lumpur, to foster good regulatory and supervisory practices, to help develop uniform prudential standards and support good practise in risk management (IFSB, 2002).

The IFSB has advanced the work on the capital adequacy framework and risk management in Islamic finance institutions, through the issuance of consultative papers on these topics in 2005. This built a road map of risk management paths customisable with Islamic finance principles. In fact, the effective supervision of Islamic banks requires that the three pillars framework of Basel III and the language of risks it introduces be adapted appropriately to its operational characteristics. Such adoption of Basel III would require a medium-term effort involving: i) Strengthening the existing supervisory framework to achieve full compliance with Basel Core Principles of Banking Supervision. (ii) Developing appropriate risk measurement and disclosure procedures supported by systematic efforts to build up databases needed for risk measurement; (iii) In parallel, building up the core elements of financial infrastructure and risk management instruments to support sound development of Islamic finance (Sundararajan, 2007). This will set the stage for adopting more advanced capital measurement approaches as envisaged in Basel III, but tailored to the specific operational characteristics of Islamic finance, including the role of investment instruments such as Sukuk.

4.5.3 The conventional risk classification approach

Risks associated with Islamic finance instruments, including Sukuk, can be categorised by adapting the risk classification procedures applied in conventional finance. El-Hawary, Grais and Iqbal (2004) contributed to this approach with a study presenting a basic view of each Islamic finance instrument’s risk profile. The figure below shows this classification.

*Figure 47: Risk profile of Islamic finance instruments*

![Figure 47: Risk profile of Islamic finance instruments](source)

Figure 43 above classifies the risks typically faced in the Islamic banks applicable to its investment instruments, including Sukuk. The overview of the profile of operating risks in Islamic finance shows risks grouped into five broad categories: transaction, business, treasury, governance and systemic risks (El-Hawary et al., 2004).
While these categories are also applicable to non-Islamic finance, specific risks within them are more relevant to Islamic finance, and the nature of contracts it uses. However, the nature of differences between Islamic finance instruments requires assigning a precise risk profile to each Islamic finance instrument in order to gain a more accurate reading of the risk exposure of these instruments.

4.5.4 The stakeholder risk classification approach

It is becoming increasingly difficult to ignore the nature of different features of investment instruments according to inherited features of Shariah principles. In the Sukuk context, IFSB Standard 7 of (2005) emphasises that Islamic finance institutions may act in various capacities in a Sukuk securitisation. Its exposure to risks may be similar to that of conventional bond securitisation. However, Shariah rules and principles may add an extra dimension to the existing risk exposures and may have a material effect on the risk profile of Sukuk holders. This implies differences between Sukuk and bonds.

As well as the fact that the risk profile of Sukuk is unique, recognition of Sukuk risks is quite complex due to the innovation of Sukuk structures. Tariq and Dar (2007) presented risk characteristics of each type of Sukuk structure from a certificate type perspective by linking them with the Shariah structures underlying the Sukuk type. There were eight risk factors presenting the relationship of those risks and types of Sukuk: credit risk, rate of return risk, foreign exchange risk, price risk, liquidity risk, business risk, Shariah compliance risk and infrastructure rigidities. In addition, IFSB Standard 7 (2005) recognised a Sukuk structure risk profile based on the Sukuk stakeholder’s perspective. The standard listed five stakeholders of Sukuk who are exposed the risk of Sukuk. Those are originator, servicer, issuer, SPV and holder (investor). Categorising Sukuk risk based on the Sukuk stakeholder perspectives provides an easier way to track those risks. Also, this helps to present a comprehensive picture of the risks associated with Sukuk securitisation. Figure 44 below illustrates those risks discussed in the previous research.
Figure 48: Risk Exposure to Sukuk Stakeholders

Risk Exposure of Sukuk from Various Perspectives

- Originator
- Servicer
- Issuer
- Holder (Investor)
- SPV
- Sukuk Market
- Sukuk Certificate

Risk related to repurchase undertaking (Binding promise)

Servicer Default

Credit and Counterparty

Issuer

Default

Issuer

Holder (Investor)

Liquidity

Coupon Payment

Asset Redemption

Rate of Return

Impairment of Assets

SPV

Bankruptcy

Settlement

Sukuk Market

Market Risk

FX Risk

Tradability Risk

Sukuk Certificate

Price

Legal

Shariah Compliance

Source: Created by IFSB standard 7 (2005) and developed by Author (2015)
It is noticeable that the greater complexity of Sukuk, as a securitisation mechanism, when compared to bonds is reflected in the “horizontal” risk structure for Sukuk in Figure 44 compared to the “vertical” risk for conventional bonds in Figure 45.

In fact, the stakeholder approach provides a valuable framework for understanding and interpreting the risks associated with Sukuk. The advantages of the stakeholder risk classification for Sukuk can be seen by comparing it with the risk classification scheme for conventional bonds of Fabozzi and Dattatreya (2005). In the conventional classification bond risks are classified by cash flow risks and market value risks. The conventional bond risk classification is less informative than the stakeholder model in linking the various Sukuk risks with the factors causing those risks. The figure below shows the conventional bond classification in a simple context.

*Figure 49: Bond risks scheme*

![Bond risks scheme](source: Created by Fabozzi & Dattatreya (2005) and developed by Author (2015))
4.6 Comparison of conventional bond risks and Sukuk risks

This section pursues in further detail the similarities and differences between conventional bond risks and Sukuk risks.

4.6.1 Interest rate risk vs rate of return risk

Rate of return risk for Sukuk is similar to the interest rate of conventional bond, in particular because most of the recent Sukuk issues have a fixed coupon payment. Hence, when the market interest rate rises the Sukuk value drops. The same is applicable for the risk of reinvestment. Fixed-income Sukuk bear this risk similarly to conventional debt certificates. However, if Sukuk were to strictly follow the Shariah compliant methodology they should ideally not be affected by interest rate risk. The Zurich based investment bank Credit Suisse believes investment in Islamic finance and banking products are not exposed to interest rate risk since Islam prohibits charging interest, and Sukuk securities should not be affected by the credit crisis in the international finance and banking industry (Farook, 2009). The Sukuk rate of return should not be treated as an interest rate, since Sukuk returns should be calculated from real profits from the underlying assets; interest rate risk should be significantly reduced or even avoided.

This point was addressed in famous fatwa issued by Usmani (2008). Sheikh Muhammad Taqi Usmani, Chairman of the Shariah Council of AAOIFI, is a leading scholar in the area of Islamic Finance. His recent criticism of modern Sukuk issuance provoked confusion and instability in the Islamic capital market. According to this prominent scholar, most of Sukuk issuances resemble conventional bonds to the extent that they do not comply with Shariah rulings and cannot be considered as Islamic instruments.

Conventional bondholders receive regular interest payments on their investments, which is determined as a percentage of the principal amount. According to Usmani (2008) Sukuk structures cannot use fixed interest rates or a market index, such as LIBOR, as a return for the initial Sukuk investment. Rather, Sukuk payments should reflect actual returns of underlying assets. Therefore, when issuing Sukuk, the manager can only announce expected returns on the project as well as the ratio of distribution of returns between Sukuk holders and managers of Sukuk. However, in practice most Sukuk issues promise returns equal to the market interest rate in order to attract investors.

A problem can arise when the actual returns on the project exceed the promised returns. Hassan Hussein (2008) mentions that in the case that actual returns exceed the expected returns, the manager can get a higher percentage of profits as a bonus for better performance. Usmani (2008) argues that such incentives should work only when the actual returns exceed the expected return on the project. However, in actual practice it is the difference between actual project returns and the market interest rate, which in no way reflects the performance of the manager. Thus, if the current market interest rate is low, the managers may receive premiums even if they underperform. Again, in order to prevent such kinds of “false incentives”, Sukuk should promise returns based on actual expected performance of the underlying asset and not on the market interest rate. The other solution to this problem, as proposed by Usmani (2008), is to distribute any surplus among Sukuk holders.
It is understandable that estimating the returns from the underlying asset, as required by Shariah, may be complicated and inaccurate at the stage of Sukuk issuance. This reinforces the importance of having the feasibility study of Sukuk issuance properly addressed in the Sukuk securitisation process. It should be done professionally and comprehensively, taking into account market conditions and expected risks. Again, some Shariah scholars argue that the manager is fully responsible for any failure of the proposed project, while others highlight the responsibility of the manager only for initial capital invested by the Sukuk holders.

Extensive usage of conventional benchmarks, such as LIBOR increases Sukuk exposure to the benchmark risk. Market interest rates or a market index, such as LIBOR can be used as a benchmark while preparing the feasibility study or calculating rental fees. On the other hand, according to Hassan Hussein (2008) and many other scholars, a proper Islamic index should be developed in future as a benchmark for Islamic financial institutions. Others, such Wilson (2009) propose to use GDP growth rate for the sovereign issues, since most sovereign receipts and expenditures are linked to GDP. Inflation-adjusted indexes would help to maintain the real value of investments and their returns. In this debate, AAOIFI has addressed this point in Shariah standard 22, by stating that using a non-Islamic index only for measuring performance is not in conflict with Shariah rules.

The rate of return risk is dependent on the Sukuk structure. Fixed rates of return are applicable to debt based structures, such Murabaha, Salam and Istisnas Sukuk. Floating rates are applicable to floating rate Ijarah Sukuk and to equity based structures such Musharakah and Mudarabah.

4.6.2 Credit risk (risk of default)

Credit risk is the risk that is associated with the chance that an asset or loan may become valueless due to a default or delay in payment. Chopra and Khan (2000), Khan and Ahmed (2001), El-Hawary et al. (2004) and Said (2011) recognise a variety of credit risks that are specific to Sukuk. Dar and Tariq (2007) explained default risk in the case of non-payment of the rental on Ijarah contracts. In the event of coupon non-payment the certificate holder can exercise the right to cancel the agreement and force the issuer to buy back the assets that underlie the issued Sukuk. If the originator fails to pay the principal amount at the maturity of the lease term the Sukuk holder has the right to take legal action against the originator. The Sukuk holders may also have the right to sell or foreclose on the underlying assets (IFSB, 2005).

Due to fact that Shariah prohibits debt trading, any rescheduling of debt for a higher mark-up is forbidden in Sukuk. This prohibition makes the risk of default higher for Sukuk compared to conventional bonds, since Sukuk issuers would be more inclined to default (Dar and Tariq 2007).

While a conventional bond represents a debt obligation, Sukuk is a certificate of ownership, so in the case of default Sukuk holders have a limited ability to retrieve their initial investment. The managers of Sukuk bear responsibility for any Sukuk default only within the limits of their control and capabilities. Therefore, in a case
of default due to external factors, such as force majeur or a global financial crisis, all losses under Sukuk, excluding such returns as are secured under the Sukuk holders’ ownership rights in the underlying assets, will be borne by the Sukuk holders. However, these losses are not borne in issues of Sukuk which do not provide for legal ownership of the underlying assets but rather a right of return (which are not Shariah-compliant according to Usmani (2008)). In the same way, some types of hybrid Sukuk can be non-compliant with Shariah due to the presence of debt-based instruments within their structure.

Thus, with regard to the risk of default, it is important to discuss the question of guarantees of return of the principal amount. Prior to the AAOIFI statement (2008), Sukuk managers were promising to buy back underlying assets at a price equal to the face value of the Sukuk. Such guarantees are often given by governments, as third parties. Some scholars think that such purchase undertakings can be permissible, and until recently Sukuk Mudarabah and Musharakah were issued using this kind of guarantee. According to Usmani (2008) any guarantee of the principal amount is unlawful in Shariah, whether the originator of Sukuk acts as Mudarib (manager of the capital), Wakalah (agent) or partner. The AAOIFI statement has classified such guarantees as non-compliant with Shariah. Under the new statement, underlying Sukuk assets should be bought at the end of the Sukuk’s life, either by the third party, or by the manager of the Sukuk at the market value of the underlying asset. Thus, Sukuk holders bear market risk when the underlying assets can be sold only at prices lower than their initial investment values. This means that, in the absence of guarantees, asset backed Sukuk should bear lower risk than asset based Sukuk.

Since there is no possibility of reliably defining the terminal market value of the underlying assets at the time of Sukuk issuance, a set of procedures to define its fair market value should be agreed upon. The parties should also clarify the ways of defining the market value as well as procedures and valuation techniques. According to Hassan Hussein (2008) Sukuk managers can pay the difference between the face value and market value of the underlying asset if the loss occurred due to the manager’s poor performance.

Credit risk increases default risk, and fixed rate Sukuk structures, such as the debt based Sukuk Murabarah and Salam, face greater credit risk than floating rate and equity based structures, such as floating rate Ijarah Sukuk, and greater liquidity risk since due the prohibition on the tradability of debt (Slim and Nader, 2012).

Credit risk assessment is complicated by the absence of proper international ratings for most Sukuk issues. Conventional bonds need to be rated by one of the major international rating agencies in order to obtain access to the financial markets. According to the Ernst &Young report (2009) only half of all Sukuk issues have been rated. Malaysian regulations require rating of new issues by local agencies, while most GCC issues remain unrated. Because of this, most of the recent issues were sovereign. The government guarantee was used to substitute for the lack of rating. These sovereign guarantees explain the large size of recent issues in spite of the absence of the issues’ ratings.

A major problem with the rating of Sukuk is the absence of Islamic rating agencies. Today Sukuk issues are rated by conventional rating agencies using conventional rating methodologies. This is done in spite of the fact
that the rating agencies are aware of the differences in structures between conventional and Islamic bonds (Al-Amine 2008). This can result in incorrect rating results. For example, when rating Sukuk, the rating agency evaluates the guarantor’s credibility, rather than the risk of underlying asset (Al-Amine 2008). In the light of recent AAOIFI statements relating to guarantees of Sukuk, such ratings can be highly inappropriate. An organisation that deals with Islamic ratings - Islamic International Rating Agency, is established in Bahrain. It rates both credit risks and Shariah compliance of Sukuk. At this stage, both investors and regulators should coordinate their efforts to enforce the use of Islamic ratings as a necessary pre-requisite for Sukuk issuance.

4.6.3 Foreign exchange (FX) risk

Foreign exchange rate risk is applicable to Sukuk with an underlying asset denominated in one currency and Sukuk certificates issued in another currency. As suggested by Dar and Tariq (2007) in this case exchange-rate fluctuations can lead to a loss by the investor or issuer. Since Sukuk have become an international financial instrument it is difficult to avoid this type of risk. In some issues, like the Islamic Development Bank (Saudi Arabia) Sukuk issue, the originator can guarantee investors protection from foreign exchange risk (Dar and Tariq, 2007). The originator of Sukuk can avoid this risk by using several currencies in their issues. Dar and Tariq (2007) discuss an example of a Chinese Sukuk issue, where one part of the Sukuk was issued in US dollars and the remainder in Euro. They concluded that the challenge for Sukuk issuing corporates and sovereigns is to devise an effective exchange risk management strategy compliant with Shariah principles.

One should also be mentioned that Sukuk can be used as an instrument to manage foreign exchange risk. Sukuk help to diversify investment portfolios of Islamic financial institutions and can be used by foreign investors as a hedging instrument to manage exchange rate risk when issued in a domestic currency.

4.6.4 Shariah compliance risk

Shariah compliance risk is a risk applicable only to Islamic instruments. Dar and Tariq (2007) define Shariah compliance risk as the risk of loss of asset value due to Sukuk non-compliance with Shariah principles. It is the responsibility of Shariah supervisory boards to ensure compliance with Islamic rulings when approving each issue of Sukuk. This type of risk became very important in the light of recent criticism by some Shariah scholars about the non-Islamic nature of most of issued Sukuk. The consequences of issuing financial instruments non-compliant with Shariah can be very damaging to the reputation of the issuer and may require extensive efforts to re-gain investors’ confidence.

It is also worth mentioning that some Shariah scholars impede the development of the Sukuk market. One of the problems with Shariah boards, as mentioned by Usmani (2008), is the fact that some scholars are active only at the first stage of the Sukuk structuring process. They issue fatwa on the permissibility of the issue in respect of the proposed structure of the Sukuk, but ignore the remaining stages of the Sukuk issuance and management. According to new AAOIFI standards (2008), Shariah boards should be active during all stages of the Sukuk operation, ensuring Shariah compliance throughout the entire life span of the Sukuk.
Taking into account the fast growing Sukuk market, Shariah scholars are often not prompt enough with their comments on new Islamic products. Some Sukuk issues do not get appropriate attention from the OIC Fiqh Academy and AAOIFI. Here appears the situation when products are circulated in the market without proper Shariah approval. However, later some scholars start to criticize the issue, provoking uncertainty and confusion among investors and damaging the general image of Islamic finance. This was the situation with Sheikh Taqi Usmani’s comments on the Shariah compliance of modern Sukuk issues (2008). His comments, as well as the AAOIFI standard (2008) destabilized the Sukuk market, including investors and issuers. They were one of the reasons behind the subsequent slowdown of Sukuk issuance.

As explained earlier in Chapter 2 the Shariah law is based on the Quran and Sunnah. However, not all situations are covered in these sources, and hence some fatwas are built on ijtihad (personal reasoning). Thus, many scholars’ comments are based on their personal abilities to generalise a situation and draw a conclusion. As a result, conclusions differ significantly from one Shariah board to another. Here we can also add the discrepancies between different schools of Islamic thought, resulting in approval of some Islamic products in one part of the world and rejecting them elsewhere. This problem is particularly important in case of global issues of Sukuk, when the capital market products should have access to the international markets. According to many finance experts, including Al-Amine (2008), the only way to resolve this problem is to promote further cooperation between such international organizations as AAOIFI and OIC Fiqh Academy. The rapidly growing Islamic financial market requires convergence of opinion and rulings among Shariah scholars.

Moreover, there are no established standards in appointing members of Shariah boards, though AAOIFI standard (2006) no. 29 states the stipulations and ethics of fatwa in the institutional framework. There is a limited number of experts familiar both with Shariah ruling and financial principles, leading to an awkward situation where a scholar may sit in on the Shariah boards of several Islamic financial institutions. In April 2010, the General Council for Islamic Banks and Financial Institution (CIBAFI) in affiliation with the BDO consultancy published research based on analysis of more than 621 Shariah scholars in 478 Islamic financial companies from 40 countries. According to this document, the top 10 Shariah scholars occupy 67% of all chairmanship positions, while the top 2 scholars hold 21 chairmanship positions each; Sheikh Nedham Yacoubi holds 78 positions in various Shariah boards. The reputation of some Shariah boards has been damaged by the ease with which they can change their fatwas. As one of the bankers mentioned to the press, they develop a conventional product and keep applying for the approval to different Shariah boards. Sooner or later they can find a board that issues the necessary fatwa and the product can then be distributed as Islamic (Foster, 2009). The most creative scholars are the ones in the most demand. In this context, Dr Mohd Daud Bakar wrote his book “Shariah Minds” (2016) summarising his experience in Islamic finance in his role of Shariah scholar over more than 40 years. He proposes applying screening and ratings to Shariah scholars in order to achieve accountability and convergence of standards in the work of Shariah scholars in Islamic financial institutions.
4.6.5 Liquidity risk

Liquidity risk is vital for Islamic finance in general and Sukuk in particular. Islamic finance institutions have limited instruments to manage their liquidity, due to Shariah restrictions on the trading of debt and other securities. Short-term interbank lending as well as last resort lending from the central bank are not available for Islamic banks due to the prohibition of Ribā. While Malaysia has developed inter-bank lending based on profit-and-loss sharing, all other countries have no such instrument.

Conventional bond markets, while more liquid than Sukuk market, are still considered to be far less liquid than equity markets. Most of the trading in the bond market is done “over-the-counter” rather than on organised exchanges. While traditional financial institutions have various instruments to manage their liquidity, Sukuk remain one of the very few options available to Islamic financial institutions. Thus, the development of an appropriate secondary market is crucial for Sukuk more than for conventional bonds. First of all, achieving progress in developing the secondary market is highly dependent on the development of the primary market. High demand for Sukuk should meet appropriate supply. According to Saidi, Scacciavillani, and Prasad (2009), in order to develop a liquid secondary market, governments should be more active in issuing Sukuk with issues representing a variety of maturity, types and risk profiles. The government of Bahrain, which has issued one, three and six-month maturity Sukuk, presented a good initiative in this field. Similar initiatives from other governments may stimulate development of the secondary market. Governments should also provide appropriate regulatory standards for transparent and sound secondary market with easy access for any potential investor.

On September 2009 only 14% of the total issuance of Sukuk was listed on exchanges (Ernst & Young analysis 2009). The amount of Sukuk actually traded is even lower, due to the preference of Sukuk holders to keep papers until maturity. Some Shariah scholars do not approve trading of debt on the secondary market at a price different from its face value. Moreover, some modes of Sukuk issuance, such as debt based Sukuk like Sukuk Istisna’a, are forbidden from trading on the secondary market due to their debt-based nature. These are the main factors behind the slow development of a Sukuk secondary market. Currently the Indonesian stock exchange holds the largest number of listed Sukuk issues; Nasdaq Dubai holds the biggest value of Sukuk listings; Dubai and London are competing to become centers of Islamic finance. Development of local and international financial markets in the Middle East and South-East Asia can promote further growth of Sukuk secondary markets. The introduction of the Islamic Dow Jones Index can also be considered as a positive sign.

Most Sukuk issues have a short-term maturity, while Islamic financial institutions are in great need of long-term investment instruments. There is a serious mismatch between long-term loans, provided by Islamic banks, and their short-term assets, mainly through deposits.

The same can be said of the growing market of Islamic insurance, Takaful, which also requires long-term investments. Sukuk with longer maturity can help resolve this problem. One of the reasons behind prevalence
of short-term Sukuk issues is the relatively new nature of Islamic banks. Most Islamic financial institutions have been established during the last few years. They are relatively small and cannot support large, long-term Sukuk. The process can change, as the banks grow stronger and more experienced.

One proposed solution is standardisation of Sukuk. The competition between conventional and Islamic banks has segmented the market and delayed the development of robust liquidity. Islamic banks need to practise greater cooperation with one another and with their conventional banking counterparts.

In August 2013, the International Islamic Liquidity Management Corporation, an international institution established by central banks, monetary authorities and multilateral organisations, launched the US$490 million inaugural Sukuk. This was done to raise liquidity in Shariah compliant markets for Islamic finance institutions, which in turn would drive international investment flows, trade and financial stability. Such efforts have helped Islamic finance to capture a share in the global financial system through offering Shariah compliant products and services, helping the industry to evolve as a more sustainable and equitable alternative to conventional finance.

4.6.6 Asset related risks

Ideally Sukuk should be backed by tangible assets, but there are some difficulties in identifying the appropriate underlying assets. The assets should meet Shariah requirements and be able to provide attractive returns. These principles can be difficult to apply in non-Muslim societies, where differentiation between Haram (forbidden by Shariah rules) and Halal (permissible by Shariah rules) activities is often misunderstood and more complex than in countries with established Shariah principles. Until recently, the main underlying asset used for Sukuk issuance was a real estate, but recent developments in the real estate market made such assets very unstable for the underlying. Other types of underlying can be commodities or movable assets, e.g. aircraft and ships. As mentioned by Al-Amine (2008), the number of assets that can be used as underlying is limited, and the issuer of Sukuk must wait until maturity in order to use the same underlying asset for a new issue. In order to manage this problem, some innovative structures were implemented for the recent issues of Ijarah Sukuk. Under the new structure the originator of Sukuk, while being a lessee of an asset, has an option to substitute part or the entire pool of assets with other assets of similar value. This will allow the originator to reduce asset related risk and obtain additional resources by selling substitute assets, and use resources for the next phase of the project.

There is the risk of loss of an asset, which is minimal in the case of Sukuk Ijarah, but can be significant in the case of construction, as appeared during the last real estate market crisis. Dar and Traiq (2007) commented that the Sukuk issuer has to buy back the underlying assets from the certificate holder. The principal amount paid may not be equivalent to the Sukuk issuance amount; consequently, there is the risk that the assets may not be fully compensated for. This means that the risk factor here is dependent on the Sukuk structure, whereby the holders of the Sukuk bear any losses in case of the impairment of the underlying assets, in the absence of negligence of the lessee (IFSB, 2005).
4.6.7 Legislative risk

According to the Zawya report (2009) one of the problems facing the Sukuk market is the absence of a proper legislative base, especially for cases of possible default. Therefore, Sukuk, as a Shariah compliant instrument, have to exist under non-Shariah compliant legislation. Hence, legal procedures following possible cases of default can be very confusing. The problem is how to document Sukuk-related contracts so that they do not contradict both Shariah rulings as well as governing laws. Currently, most of the issues prefer to use Commonwealth law as a basis of Sukuk contracts. There are two main reasons behind this choice: Commonwealth law is more established than the local legislation in many countries and rating agencies prefer using it as a governing law (Al-Amine 2008). Thus, in order to obtain a higher rating, Sukuk issuers choose Commonwealth law as a basis for their documentation. Usually the contract states that the agreement is governed under the Commonwealth law as long as it does not contradict Shariah rulings. However, in case of disputes, parties should apply to the conventional court, which is not familiar with Shariah principles and cannot judge adequately. The bankruptcy of East Cameron Gaz Company, which issued Sukuk in 2006, had failed in the Louisiana court. The court struggled to define the rights of the Sukuk holders and the question of assets’ sale (O’Neill 2009).

There are two important cases concerning this particular risk in the Murabahah financing contract, these being Islamic Investment Company of the Gulf (Bahamas) Ltd v Symphony Gems NV and others (2002) and Shamil Bank of Bahrain v Beximco Pharmaceuticals Ltd and others (2004). The main problem addressed in these cases is in determining the governing Shariah principles in the absence of standard interpretations of those principles, which opens doors for dispute.

According to Al-Amine (2008), solutions for the problem can be achieved through standardisation of Islamic financial contracts. In the long run, proper internationally recognized Islamic commercial law should be created and implemented both at the local as well international levels. Along with the development of the Sukuk market there will be further cases of default and/or disputes. Hence, more precedents would be created and the more advanced legislative rulings and procedures would become.

Sukuk, being a Shariah-compliant instrument, have to operate not only in the conventional legislative system, but also within conventional regulatory and financial systems. According to a survey conducted by a Task Group in 2006, most market professionals believe that Islamic financial institutions can exist in conventional markets. In reality, there are great differences between Islamic and conventional systems, as covered in Chapter two. Such differences can only add to the instability of the Sukuk market and increase its riskiness. Therefore, governments should introduce additional regulations in order to provide an adequate base for Islamic financial institutions. Malaysia, which has developed regulations for Islamic financial institutions, can be used as a benchmark.
4.6.8 Regulatory risk

Lack of standardised regulations governing Islamic finance is a major impediment to further development of the whole market, including Sukuk. Several international institutions have been established to produce standards and regulations, including AAOIFI and IFSB. AAOIFI was registered in Bahrain in March 1991. Its objective is to prepare accounting, auditing and governmental standards for successful functioning of Islamic financial institutions. The IFSB was established in Kuala Lumpur, Malaysia, in November 2002 with the purpose of developing international prudential and supervisory standards for Islamic financial institutions.

Some market commentators mentioned that standardisation may also have its negative consequences. According to the authors of the recent DIFC Sukuk guide, AAOIFI statement on modern Sukuk issuance (2008) had a dramatic effect on the development of Islamic bonds. AAOIFI’s statement was issued in February 2008 following the criticism of Sukuk issuance by Sheikh Usmani (2008).

The statement is based on 6 principles. It discusses Sukuk tradability, responsibilities of Sukuk managers, reserve accounts and their permissibility, purchase of assets under Musharakah, Mudarabah and Wakalah structures, duties of Shariah scholars. Investors should be the legal holders of an underlying asset and not holders of a nominal security. Investors cannot be guaranteed the principal amount of Sukuk by promises to buy back the underlying asset at its face value. The asset can be bought back but only at its current market price; thus the face value of Sukuk should not be secured. Investors cannot be offered a loan when earnings from an underlying asset fall below expected value. Issuers can create special reserve accounts to cover such unexpected falls. The responsibility of Shariah scholars should not be limited to issuing fatwa at the initial stage of structuring the Sukuk but should also include proper supervision of all stages of Sukuk issuance. All these requirements increase the initial expenses for Sukuk issuance and make the process more complicated. According to the DIFC Sukuk guide, during 2008, the share of Musharakah and Mudarabah structured Sukuk in the total issue reduced by 83% and 68%, respectively. It claims that the AAOIFI statement was the main reason behind these changes.

Another crucial aspect of regulation and standardisation is the importance of cooperation among different regulatory bodies. Although the creation of proper Islamic financial regulatory bodies in every country with functioning Islamic finance institutions (like in the case of Malaysia) may be problematic, there is a need to establish a dedicated department within existing government structures. Moreover, once the international standards relating to Islamic finance are properly developed, regulation at the local level will be much easier.

Furthermore, standardisation of the regulations governing Islamic finance is necessary to ensure the globalisation of Islamic finance. Although regional standardisation bodies exist, adherence to their standards varies from country to country and region to region. For example, in Iran and Sudan all the banks are following the Shariah board set by the central bank of the country. In fact, it is a matter of serious concern that there is no authoritative global body to regulate and promote Islamic finance. Disagreement and diverse interpretation over what is Shariah complaint and what is not continue to pose problems in establishing the necessary
regulations for the industry to develop globally accepted products. The existing bodies so far need global recognition for the adoption and enforcement of issued standards by Islamic financial institutions, regardless of which country they operate in.

There is also some criticism of standardisation, which argues that it is an unrealistic goal given the fragmented nature of Islamic finance. However, there remains a need for balanced, globally accepted regulations that do not impede growth or permit misuse.

4.6.9 Staff related risks

There is a serious lack of specialists in the area of Islamic finance. Since Sukuk circulate in conventional markets, such specialists should have a dual expertise in conventional instruments as well as basic Shariah rulings. There a view that since Islamic principles are very transparent and easy to understand, experts with knowledge of traditional markets can be educated into Islamic finance experts. So far, according to the Ernst &Young report (2009), eight out of the top ten Sukuk arrangers were conventional banks or Islamic branches of conventional banks. This fact can be explained by the bigger size of conventional banks, their greater market experience and professional staff. All these factors help to build the reputation of a financial institution. Islamic banks need further development both in terms of their asset size as well as in terms of education of their employees. According to the Ernst &Young report only one Islamic bank can compete with the well-established conventional banks.

4.7 The Sukuk structure risk classification approach

A main aim of this study is to investigate Sukuk risk through an examination of financial risk among Sukuk structures.

4.7.1 Risk underlying Sukuk structures

Referring to previous studies conducted on risks of Sukuk structures such as Fabozzi (2000), Usmani (2008), Tariq and Dar (2007), Abdul Rahman (2008), Abdul Jalil and Abdul Raham (2012), Alsaed (2012), Noor and Shahimi (2013), and Alsyed (2013), there is necessary room for gathering those risks and listing them for every structure of Sukuk. Sukuk structures can be classified in different categories, such as debt based, equity based, asset based, and agency based as well as a hybrid group which combines two or more structures within a single Sukuk certificate. For examples, debt based Sukuk such as Murabahah and Istisna’a, equity based such as Musharakah and Mudarabah, asset based such as Ijarah and Manfah (usufructs), and agency based such as Wakala structure.

This classification might provide a better reading of risks underlying Sukuk structures to track risks and estimate the reward measurement of each structure. In addition, this matrix, sourced from the past research in this field, helps Sukuk research analysts to figure out the comparison and differences as well as to help bridge the research gap in Sukuk risk analysis. The matrix below summarises the risks attached with each Sukuk structure. In addition, this below matrix help later in the research analysis stage to figure out the comparison.
and differences. Also, the table should be regarded as summarising a set of hypotheses on the expected signs, sizes and statistical significance of the coefficients to be obtained from the proposed multiple regression analysis.
Table 14: Sukuk Structures Risks Matrix

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Asset Based</th>
<th>Debt Based</th>
<th>Equity Based</th>
<th>Agency Based</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Applicable</td>
<td>Scale of level</td>
<td>Risk Recognition</td>
<td>Applicable</td>
</tr>
<tr>
<td>Credit Risk</td>
<td>Yes. In particular, on rent payment, fixed rate</td>
<td>More serious</td>
<td>Medium</td>
<td>Yes</td>
</tr>
<tr>
<td>Rate of return (Interest rate risk)</td>
<td>Yes</td>
<td>More serious</td>
<td>Medium</td>
<td>Yes</td>
</tr>
<tr>
<td>FX risk</td>
<td>If all other conditions are similar, FX risk will be the same for all types of Sukuk structure. However, those Sukuk that are liquid or relatively short term in nature will be less exposed. The composition of assets in the pool will also contribute to the FX risk in different ways.</td>
<td>Yes</td>
<td>Most serious</td>
<td>High</td>
</tr>
<tr>
<td>Price risk</td>
<td>Yes</td>
<td>Most serious</td>
<td>High</td>
<td>Yes</td>
</tr>
<tr>
<td>Liquidity risk</td>
<td>Yes</td>
<td>More serious</td>
<td>Medium</td>
<td>Yes</td>
</tr>
<tr>
<td>Asset related risks</td>
<td>Yes</td>
<td>Most serious</td>
<td>High</td>
<td>No, there is no asset attached</td>
</tr>
<tr>
<td>Overall Risk rating</td>
<td>High = Red, Medium = Yellow, Low = Green</td>
<td>These rating hypotheses are obtained by analysing and extending the results of the previous research studies discussed in this thesis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.7.2 Evaluation of risk profiles underlying Sukuk structures

*Figure 50: Risk roots in Sukuk structures*

Risk management of Sukuk structures is a relatively new subject (Alsayed, 2013). Against the earlier discussion, it has been noticeable from Table 14 and Figure 46 that each Sukuk structure has a distinctive risk profile influenced by the *Shariah* conditions behind the concept of the financing structure as well as the type of certificate. Therefore, the risks that Sukuk encounter vary according to the structure of the Sukuk. For example, the risks of Sukuk *Murabahah*, which has a fixed return, differ from those of Sukuk *Musharakah*; the risks of Sukuk *Istisna* differ from those of Sukuk *Ijarah*; and so on. It is important to state that these risks also vary depending on the underlying assets of these Sukuk, be they fixed or movable assets, utilities or services.
4.7.3 Empirical studies on Sukuk structure risks

A few studies have been conducted on Sukuk structure analysis. One of these studies conducted by Abdul Jalil and Abdul Raham (2012) was about a comparison analysis between two Sukuk structures in terms of long term tenure. They determine that the amount of profit gained from the *Musharakah Mutanagiqisah* structure using a coupon rate of 4.5%, priced at par with a tenure of five years was greater than the *Ijarah* structure where the price is at a discount. In addition, they computed and compared the profits obtained from Sukuk investment in *Ijarah* and *Musharakah Mutanagiqisah* for a 3.5% coupon rate and price at par for a Sukuk with tenure of 12.5, 15, 17.5 and 19 years. They applied these two models for computing the profit. These models are based on *Ijarah* and *Musharakah Mutanagiqisah* principles. They found that Sukuk investment using the *Ijarah* principle is a better investment compared with the *Musharakah Mutanagiqisah* principle, regardless of the number of years of the Sukuk, as long as it is a long term tenure.

Tariq and Dar (2007) and Zaidi (2009) discussed the Sukuk structures and both investigated the risk associated. Zaidi (2009) concluded that the risk of Sukuk is broader than the risk of conventional bonds, due to Sukuk being burdened with additional risk factors, including Sukuk specific market risks, *Shariah* risk, regulatory risks, and risk factors associated with the assets underlying Sukuk. Tariq and Dar (2007) provided a *Shariah* compliant framework applying to Sukuk structures in order to contribute to risk mitigation.

Wilson (2008) addresses the criticisms of Sukuk *Ijarah* related to linking distribution to LIBOR. He examines innovations in the structuring of Sukuk securities and the potential for novel structures based on *Musharakah* or a hybrid of different Sukuk structures. Wilson (2008) also proposes adopting alternative benchmarks to LIBOR based on macroeconomic indicators of real activity such as GDP growth for sovereign Sukuk, and of company financial performance in the case of corporate Sukuk. However, GDP indicators may help in the case of Sukuk based on debt or assets, though not for Sukuk based on equity, because the former Sukuk rely on the economic environment, the context of the Sukuk issuer, and the assets attached to the Sukuk, while Sukuk based on equity are more affected by the efforts of Sukuk parties such as the *Mudarab* (entrepreneur manager) who plays a crucial role in driving Sukuk *Mudaraba* among its risk exposures.

Saad and Mohamad (2012) analysed Sukuk structure performance in the Malaysian market from 2005 till 2010. They used a multivariate regression model for the analysis to investigate the relationship between Sukuk yield and Sukuk structures. They concluded that there is a statistically significant relationship among variables. Most of the listed Sukuk are based on debt (68%), and the majority come from the infrastructure and utilities sectors (53%).

Muhamed and Radzi (2011) identified the implications for Sukuk investors choosing an asset based or asset backed structure, focusing on the Sukuk *Ijarah* structure as a case study. A default on asset based Sukuk is the same to investors as a default on unsecured bonds. No recourse can be expected against any of the assets used in the Sukuk. On the other hand, asset backed Sukuk may become more widely used as investors would have the ability to take possession of the assets backing the Sukuk. They concluded that asset based Sukuk may be more suitable where legal title to assets cannot be transferred to investors. The asset based Sukuk is more appropriate when there are restrictions on foreign ownership of certain asset classes such as property assets. In
addition, asset backed Sukuk may not be adequate in circumstances where the enforceability of assets may provide a challenge, such as sovereign owned assets.

4.7.4 Managing Sukuk structure risks

Sukuk provide opportunities for financial innovation, not all of which are available for conventional bonds. While Sukuk are exposed to certain risks beyond those born by conventional bonds, Sukuk financing also provides for new ways of managing these risks, and for tailoring Sukuk instruments to the particular needs of issuers and investors. Some contributions to financial innovation in Sukuk markets are discussed below.

Considering the nature of Sukuk structures from the Shariah perspective, it is seen that the evolution of structures such as Sukuk Ijarah has been instrumental in increasing Sukuk issue size for issuers. Structures such as agency Sukuk (Wakalah) have allowed issuers to maximize the use of limited tangibles in an issuance, and thus allowed them to issue a larger quantum than if they had used an Ijarah structure. In practise, issuers like Ooredoo have used other real tangible assets such as airtime minutes via a Manfah (usufructs) structure under the Ijarah concept (Zawya, 2014).

Sukuk are based on the Shariah principles, which, when applied properly, allow avoiding many risks associated with traditional financial instruments. However, since Islamic financial institutions have to function in traditional financial markets, and due to the imperfection of modern Islamic instruments, avoidance of many risks is impossible. While conventional bond holders have a variety of instruments to manage their risks, not all of these instruments are permissible for Islamic finance institutions. For example, there is an on-going discussion in the academic literature about permissibility of using options in Islamic finance. While most derivatives are clearly prohibited by Shariah scholars, there are some options that can be attached to certain Islamic financial instruments. Smolarski and Tahir (2006) argue that call and put options can be used for hedging purposes. Obaidullah (2004) analyses options by stipulation and option of determination as possible risk management instruments in Islamic finance. Tariq and Dar (2007) suggest using embedded options as a tool for Sukuk risk reduction. They argue that Shariah, while prohibiting debt trade, allows its exchange for real goods, assets and services. Thus, a Sukuk holder can have an option to exchange his zero-coupon Istisna’ā Sukuk, for example, to an apartment (after a certain period) instead of waiting for maturity. The same authors (Tariq and Dar, 2007) discuss the possibility of swapping floating-rate Sukuk with zero-coupon-fixed-rate-embedded Sukuk as a Shariah compliant instrument. Most of the authors argue that options allow for decreasing excessive risk (Gharar), which should be avoided under Shariah ruling, but are present at the current highly volatile market. While many academics agree that such detachable and non-trading options should be permitted in Islamic finance, and urge Shariah scholars to come up with a collective fatwa on this point, the latter are very reluctant to give such permission.

As far as Sukuk risks are concerned, IFIS provided a report on Sukuk structures shows that the practice of Sukuk issuer in 2014 presented that Sukuk issuers are careful of selection which type of Sukuk structure to conducted Sukuk certificate on it. It provided evidence that different of selection of Sukuk structures by Sukuk issuer raised awareness of how type of Sukuk structure contains different features and the issuers should choose the right structure that suit to them investment strategy and omitting that Sukuk concerned as one unit,
emphasising that actual difference among financial performance under Sukuk structures. The report presented that the total *Murabaha* Sukuk issuance in the world has slipped to US$69.7 billion in 2014, compared to US$74.4 billion last year and down from the record US$77.3 billion reached in 2012, according to IFIS data. However, as a percentage of total Sukuk issuance, *Murabaha* use has increased both this year and last. Nevertheless, *Wakala* Sukuk has grown both as a percentage and in real terms. The comparative analysis of Sukuk structures of Sukuk issuance in 2014 shows that the common structures issued, *Murabahah*, *Ijarah*, *Wakala*, *Musharaka*, *Wakala-bel-ISTihmar* and *Mudharba* came top in 2014. *Murabaha* issuance stood at US$69.7 billion, far beyond the second *Ijarah*, with US$21 billion. Sukuk *Wakala* came next US$17.5 billion and *Musharaka* completed the top four with US$6.3 billion. Other most common Sukuk structures in 2014 include Sukuk *Istisna* with US$1.2 billion and *Salam* Sukuk with US$ 1 billion worth of issuance.

*Figure 51: Sukuk structures issuance watch in 2014*

The IFIS report shows that, with the exception of Sukuk *Wakala*, all other structures have slipped in issuance in 2014 in real terms, compared to the last year or the year before. The biggest fall was *Musharaka* with almost a 65% drop compared to 2012, when it stood at US$18.5 billion. At the same time Sukuk *Wakala* issuance more than doubled from US$7.6 billion in 2012 to US$ 17.5 billion in 2014. This implies that Sukuk structure are not equal and each of those structures enjoy with different risk profiles as it shown in the previous studies summarised in the table earlier in table 2. This research attempts to investigate that how these differences have impact and influence financial performance of Sukuk certificate trade and evaluation by better understanding the Sukuk structure risk profiles with empirical evidences.

In the other hand, 2007 Dubai’s Ports Customs and Free Zone Corporation issued the world’s first convertible Sukuk allowing to convert initial Sukuk into common shares of the originator. In 2007 Khazanah National (Malaysia) issued exchangeable Sukuk with an option to exchange them to existing shares of one of the subsidiaries of the originator. These issues attracted high interest both from investors as well as potential issuers of Sukuk as examples of risk reduction alternatives. While financial experts discuss the possibility of further
innovation in Sukuk, such as mandatory exchangeable/convertibles, contingent-convertible Sukuk, reserve convertible Sukuk, etc., most of the scholars have forbidden these kinds of innovations (Abdullah and Ismail, 2008), due to their similarity with derivatives and their perceived excessive uncertainty.

Another on-going discussion among scholars is about permissibility of third party guarantees in some Sukuk issues (Hassan and Soumaré, 2007). Proponents of such guarantees, usually issued by the governments, claim that there is no clear prohibition of such action in any Islamic source. Thus, according to this discussion, as long as the guarantor is financially and legally independent from both contracting parties involved in the Sukuk transaction, the third party can guarantee the entire investment or part of it without obtaining any fees for this operation. Opponents of such a guarantee argue that it can open the possibility for Riba and highlight the Shariah prohibition of any kind of guarantee of the capital (Al-Amine, 2008).

While this chapter has focussed on Sukuk structure risks, the conventional risk classifications discussed in Section 6.5.3 are also of value in identifying, measuring and managing Sukuk risks. Thus, risk management for Sukuk can borrow from the general risk management theory in conventional finance, for example, as discussed by Reilly and Brown (2012). In this regard, Al Sayed (2013) concluded in her paper that conventional risk management, variance for total risk and the Beta coefficient for systematic risk, can be used to measure total risk and systematic risk of Sukuk. In addition, the conventional risk management strategies of diversification and hedging are applicable to the management of Sukuk risk. This is confirming that risk management tools are support the risk analysis reading of Sukuk because that Sukuk in common with other investment instrument in finance industry.

Moreover, the multifactor expected returns models that will discuss later in the methodology chapter is combine the insights and techniques of conventional finance with those derived from the risk analysis of Sukuk structures. Indeed, it is hypothesised that structure risk factors will be highly significant in the proposed expected return regressions of this research analysis.

4.8 Conclusion

A number of schemes for the classification of Sukuk risks have been proposed in the literature. The discussion of Section 4.6 shows that Sukuk are strongly exposed to conventional bond risks, such as credit risk, liquidity risk and foreign exchange risk. Conventional bond risks should be incorporated into any reasonable rating or pricing model for Sukuk.

However, Sukuk are exposed to further risks, in addition to those faced by conventional bonds. A recent development has been the development of risk classifications based on consideration of risk caused by differences in Sukuk structures. It is argued that Sukuk structure risk analysis provide a way of linking Sukuk risks with the fundamental factors causing those risks. Indeed, the different Sukuk structures follow directly from the fundamental ethical principles underlying Islamic finance. Thus, Sukuk structure risk classifications when combined with conventional risk factors are theoretically superior to purely conventional classification schemes, since structure risks are created by the necessity for Sukuk to conform to the Shariah. Sukuk structure risks are essentially Shariah created risks.
The evaluation of the structure risks of the Sukuk structure risk classification scheme proposed in this thesis are summarised in Table 14.

This chapter concludes by looking ahead briefly to the hypothesis development sections of Chapters 5, 7 and 8. As noted in Chapter 1, given the current development of Sukuk markets and the evolving state of Sukuk research, hypotheses on Sukuk can be stated only more tentatively and generally with less precision than is the case in conventional finance. Some researchers in the social sciences prefer the terminology expectations or propositions to hypotheses. The following expectations on the regression model of Chapter 8 are briefly stated here.

1) Firstly, it is expected that conventional bond risk factors will be significant in explaining Sukuk returns. This is because Sukuk are exposed to conventional bond risks, and, importantly, this is well-known to Sukuk market participants. Thus, it is expected that these conventional bond risks will be priced in the Sukuk market.

2) Secondly, it has been argued in Chapter 4 that Sukuk structure risks ought to be priced in the market, in accordance with the risk weightings given in Chapter 4, Table 14. However, the impact of Sukuk structure on Sukuk risk is currently not well-understood. While some researchers have discussed the impact of Sukuk structure on risk, this research development is comparatively recent. Therefore, it is not expected that Sukuk markets are currently pricing Sukuk structure risks efficiently. The expectation is that the theoretically correct signs and magnitudes of the coefficients of the Sukuk structure factors are unlikely to be found in the regression results, i.e. that the regression results for these factors will be mixed.

3) Should the empirical tests show, contrary to expectations, that Sukuk markets are efficient, or near-efficient, at pricing structure risks then this research will have fewer implications, since it would show that the markets are already working quite well. However, the expectation is that the empirical results will show that the markets are currently mispricing risks to a considerable extent.

The next chapter discusses the research methodology in further depth.
CHAPTER 5

METHODOLOGY

5.1 Introduction

Islamic finance is a relatively new subject, and research in Islamic finance brings with it its own special difficulties. These are of two main kinds:

1) There is still disagreement among researchers, scholars, practitioners, governments and regulators on how the basic principles of Islamic finance should be interpreted, applied and implemented in the modern world.

2) Data for empirical research in Islamic finance is extremely limited compared to the data sets available for conventional finance. This is especially the case for research in Sukuk. Consequently, there are few empirical contributions on Sukuk markets.

This chapter discusses research methodology. The discussion starts from a general theoretical perspective, discussing theories in the philosophy of science. The discussion moves from the general to the particular. After looking at research methodology from the general perspective the discussion moves on to apply these ideas to the particular Sukuk research of this thesis.

In this research the deductive method is applied. However, before moving on to the general discussion, problem 1) above can be addressed immediately.

The deductive method is essentially value-free. The first step in applying the deductive method is to start with an important problem, a question, or a puzzle (or a set of connected important problems, questions or puzzles). However, whether or not something counts as an important problem is a value judgement, and the deductive method says nothing about how these value judgements should be made.

In order to address 1) this thesis starts from the value judgement that a financial system based on the ethical principles of Islamic finance is a thing that is good in itself. For example, in the Islamic theory of money it is stated that in order for money to earn a return it ought to be put to work in the real economy, and in the production of goods and services that are not harmful (Haram), but beneficial to individuals and to society as a whole; money should not make a return simply by lying idle and accumulating interest by the mere passing of time. Agreement, or disagreement with this claim of the Islamic theory of money comes down, in the end, to a value judgement.
In making the above value judgement that Islamic finance is a good thing, it is by no means necessary to believe any of the theological claims of Islam. Indeed, there are many researchers and practitioners of Islamic finance, and very many customers of Islamic financial institutions, who are not Muslims but who have made the value judgement that Islamic finance is a better way of doing finance than conventional finance.

Having stated the underlying value system, the answer to 1) is now straightforward. Once it is accepted that the ethical principles of Islamic finance are good, the question of how these principles can best be implemented in the context of modern, global financial markets can be resolved, over time by informed debate, by researchers, educators, scholars, practitioners, governments, regulators, and other stakeholders. This debate is already taking place, the progress of which has been reported in the large and rapidly expanding literature on Islamic finance.

In this ongoing debate considerable progress has been made. In areas of disagreement, progress has been made in understanding exactly what the issues at stake are. In many cases the disagreement has been narrowed down to very specific and precisely defined issues. For example, researchers agree that they disagree over whether or not Bay-al-Salam contracts are Shariah compliant. Furthermore, progress has been made in that there is now broad agreement on many general and specific issues.

The solution to 1) then, is that researchers should carry on debating, just as they have been. The comprehensive literature review of this thesis, and the conclusions on Sukuk structure risk arising from it, are a further contribution to the ongoing debate.

How can this value judgement, that the principles of Islamic finance are a good thing, itself be justified? This is a question for moral philosophy and theology, and it is not attempted to answer it in this thesis.

5.2 The philosophy of science

The following sections discuss the logic and methodology of the deductive method, and how it is applied in the research into Sukuk of this study.

5.2.1 The inductive method

The traditional view of scientific method seeks to explain natural phenomena through observation and experimentation and is a central idea of logical positivism, which asserts that only scientific knowledge is true knowledge. Its roots can be traced back to Francis Bacon (1626) who described the way scientist method should
proceed to search for natural laws. The elements of the scientific method include collection of data through observation and inductive generalisation.

The method of using accumulated observation of particular instances to derive general statement is known as induction. According to the traditional view of scientific method, induction is the criterion that distinguishes science from non-science. Scientific statements based on generalisation from observations provide certain (or highly probable knowledge) knowledge. The growth of science can then be thought as an endless process of adding such certainties to the existing ones. In other words, scientific progress is a process of adding true statements to the pile of true statements that have already been verified.

The steps in the logical positivist approach can be presented as follows:

Step 1: Collect observations, $O_1, O_2, \ldots, O_n$. For example: The first swan observed is white, The second swan observed is white, \ldots, The $n^{th}$ swan observed is white.

Sept 2: From the $n$ observations $O_1, O_2, \ldots, O_n$, use the Principle of Induction to obtain a general statement. For example: All swans are white.

The Principle of Induction does two things. Firstly, it tells us which general statement emerges from the data, e.g. All swans are white. Secondly, it tells us that the statement is probably true (the probability increases with the number of observations), e.g. 3 observations of white swans tells us that the general statement All swans are white has a fairly small probability of being true. 10,000 observations of white swans tells us that the general statement All swans are white has a high probability of being true.

The inductive method of scientific knowledge was challenged by Hume (1777), who demonstrated that the Principle of Induction is not a valid principle of logical inference. For example, from a statement that 10,000 white swans have been observed it does not follow logically that the statement All swans are white is true with a probability of 99%, unless some prior assumption about the probability distribution of the colours of swans is already given (Pagas, 2008).

Hume’s problem, as sometimes the problem of induction is referred to, implies that pure empiricism is not a sufficient basis for science.
5.2.2 Popper’s deductive method

The most sustained attack on the inductive method was given by Karl Popper (Popper, 1959). Popper noted that Step 1 of the inductive method cannot in fact be carried out. Step 1 of the inductive method is to collect observations. But, observations of what? It is not possible to simply take observations unless some purpose for making the observations is already given.

With regards to Step 2, Popper argued that collecting large quantities of data and passively waiting for the truth to emerge from the data by the Principle of Induction does not work, and is not how scientists actually behave.

In addition, Popper, and other historians of science noted that science does not progress by adding further verified truths to the body of existing verified truths. Instead, science progresses by a process of creative destruction. The physics of Einstein is not Newtonian science + Some new truths established by induction. Rather, Newtonian physics was swept away and replaced by Einstein’s theory of general relativity.

Popper’s research methodology is based on the asymmetry between verification and falsification. While even a large number of positive experiments cannot confirm a scientific theory, a single experiment or observation can disprove it. General statements like *All swans are white* are not verifiable, but they are falsifiable. A single observation of a black swan is sufficient to falsify the general statement that all swans are white.

Falsifiability does not mean that something is false; it means that something may be disproved by empirical observations. A theory, therefore, is falsifiable if there is at least one observation statement that contradicts the theory.

When testing theories in order to refute them it is possible for scientists to impose *ad-hoc* hypotheses in order to protect the theory and therefore reject or ignore falsifying evidence. Popper (1959) proposes that we do not design a methodology in order to protect any theory or statement and that we unambiguously to refutation. Theories, therefore, should be rationally criticised (critical rationalism), and only theories that have survived attempts at refutation (have been corroborated) can be included in the body of provisionally accepted theories. Furthermore, we should not abandon theories or statements easily as this may imply that they have not been rigorously tested.
Based on this philosophy of science, falsifiability is the criterion that separates science from non-science. In other words, a hypothesis or theory is scientific only if it is falsifiable. According to Karl Popper (1959), the growth of scientific knowledge can be described by the following formula:

\[ P_1 \rightarrow T S_1, \ldots, T S_k \rightarrow C T \rightarrow P_2 \rightarrow \]

\( P_1 \) is a given problem. \( T S_1, \ldots, T S_k \) are competing trial solutions (theories) which are subject to a rigorous attempts at falsification, the process of critical testing, \( C T \). The resulting situation is \( P_2 \). The theories that survive the process of refutation are not necessarily true but are more applicable to the problem situation \( P_1 \).

According to Popper (1959), the growth of scientific knowledge towards greater problems \( P_2 \) advances through the trial solutions (tentative theories or conjectures) and error elimination (refutation).

Popper’s theory regards science, not as a body of verified truths as in the inductive approach, but as a process of rational criticism.

The methodological approach of this thesis is to adopt Popper’s falsificationist approach, however as a set of principles rather than as a set of strict rules. Before discussing how the deductive approach is applied to research in Islamic finance, two other well-known theories of scientific method will be discussed, Kuhn’s theory of paradigm shifts, and Lakatos’s theory of scientific research programmes.

5.2.3 Kuhn’s paradigm shifts

Kuhn (1962) on the other hand argued that science does not develop through the accumulation of provisionally accepted theories but through periodic revolutions called paradigm shifts. Kuhn’s (1962) theory of science has three and can be described by the following formula:

Pre-paradigm \( \rightarrow \) Normal science \( \rightarrow \) Puzzle solving \( \rightarrow \) Anomaly \( \rightarrow \) Crisis \( \rightarrow \) Revolution \( \rightarrow \) New paradigm \( \rightarrow \)

The first stage, the pre-paradigm phase, exists only once and lacks a paradigm. This phase is characterised by incomplete theories. However, at some point, the members of the scientific community will be drawn to a particular framework and they will decide on terminology and methods of experimentation to increase insight. This is followed by the second phase, normal science, where scientists explore the results and effects of the new central paradigm and attempt to enlarge it through puzzle-solving. Failure of results to act in accordance with a paradigm is not seen as refuting the paradigm but is attributed to mistakes of the researcher. As more anomalous results arise the science reaches the point of crisis at which a new paradigm emerges. This is the third phase, which is termed revolutionary science, where the new paradigm subsumes into a new framework.
the old results along with anomalous results and a new period of normal science begins. Kuhn (1962) therefore portrays science as a process in which scientists continue to hold onto their theories despite the anomalies until there is a period of great conceptual change.

Kuhn’s theory can be viewed as the sociology of science rather than as the logic of science. It is hard to give a rational justification for the paradigm shifts that occur in the revolutionary stage of the scientific process.

5.2.4 Lakatos’s scientific method

Lakatos (1978) tried to solve the problem of choice related to replacement paradigms by combining Kuhn’s and Popper’s ideas in one model. According to Lakatos’s (1978) what we think of as a theory may be a collection of slightly different theories and experimental techniques developed over time. The collection of such successive theories (research programmes) shares common ideas which he called the hard core. The hard core of the particular programme is assumed to be protected from falsification behind some auxiliary hypotheses. Each research programme contains specific methodology rules; the negative heuristic is in place to protect the hard core, whereas the positive heuristic is in place to articulate anomalies and further develop the research programme. The changes in auxiliary hypotheses (problem shifts) can be thought of as progressive, if they are able to both explain apparent refutations and produce new facts, or as degenerate if they are just ad-hoc. If a programme is progressive therefore it is rational for scientists to change the auxiliary hypotheses to protect it. If on the other hand, a programme is degenerate it is in danger of being replaced by a more progressive competitor programme.

Lakatos (1978) therefore claims that instead of rejecting a theory in the light of anomalies as in Popper’s theory it is sometimes more appropriate to retain the research programme as in Kuhn’s theory, retaining the hard core. However, sometimes it is appropriate to abandon the hard core, and move to a new research programme. A problem for Lakatos’s theory is that it is not clear how scientists can make a choice between alternative research programmes on the basis of which is progressive and which is degenerate.

5.2.5 Deductivism in the social sciences

It is noted that all of the above theories are focused on the practises of scientists in the pure sciences, especially in physics. However, a too strict application of these ideas to the social sciences is too inflexible. The methodological approach of this thesis is to adopt Popper’s falsificationist theory, not as a set of strict rules, but rather as a collection of rational guidelines.
5.3 Research methodology in Islamic finance

An extension of the outline of the deductive method given in Chapter 1, Section 1.10 is given below, with illustrations of how it is applied in the Sukuk research of this thesis.

Step 1: The first step in the deductive method is a set of problems that arise from within a particular value framework. In this research the value framework comprises the ethical principles of Islamic finance, and the problems encountered are:

- What are the key risk factors in pricing Sukuk?
- What is the impact of Sukuk structure risk in Sukuk pricing?
- On the basis of the data set available for this study, what is the empirical evidence that the theoretically motivated risk factors identified in this study are actually priced in the market?

Step 2: Hypotheses are proposed which give tentative answers to the problems.

The hypotheses concerning Sukuk are developed from two sources:

a) The extensive review of the existing academic literature on Sukuk.

b) The general background knowledge of the history, development and current practices in the Sukuk markets.

A hypothesis is essentially the same thing as a theory = a model = a conjecture = an explanation = a story. The hypotheses, therefore are essentially expectations of what we expect to find when we look at the data.

The complete set of the hypotheses investigated in this thesis are presented in the hypothesis development sections in Chapter 7 and Chapter 8. However, one of these hypotheses will be briefly discussed here.

From the critical review of the literature in Chapters 2, 3 and 4 it is evident that Sukuk in certain respects are similar to conventional bonds. It is therefore reasonable to conjecture that the risk factors used in explaining conventional bond returns will also be significant in explaining Sukuk returns. For example, it is hypothesised that Sukuk with long maturities are more risky than Sukuk with short maturities. Since high expected returns should be associated with high risk, it is hypothesised that Sukuk with long maturities, after controlling for other factors, should have higher returns than Sukuk with short maturities.
Step 2: The second step in the deductive method is empirically testing the hypotheses. In Popper’s terminology the data will either support the hypothesis (the hypothesis is *corroborated*) or the data will undermine the hypothesis (the hypothesis is *refuted*).

Hypothesis testing in the social sciences is less clear cut than in the exact sciences. In particular, in the study of Sukuk “corroborated” means only that the hypothesis has obtained some degree of empirical support, while “refuted” means only that our confidence in the hypothesis has been weakened to some extent. Popper’s claim that a theory can be refuted, or falsified, by a single observation is clearly inappropriate when applied to the social sciences.

Step 3: The third step in the deductive approach is evaluating the hypotheses in the light of the results of the empirical tests. This leads to further hypothesis development, where new hypothesis are proposed or existing hypotheses revised. It may also lead to further research questions.

In the research hypotheses of this thesis, the results reported in Chapter 7 and Chapter 8 show that some of the hypotheses are corroborated, while others are refuted.

Step 4: Well-corroborated hypotheses may be applied in practice, and will be of value to many stakeholders, including investors, bankers, corporate and sovereign issuers, regulators and governments.

As noted, a strict application of Popper’s deductive method in the social sciences would not be fruitful. If a theory can be rejected by a single observation, as Popper demands, then almost all social science theories would be rejected. In that case scientific progress in the social sciences would be impossible.

However, treating the deductive method as a set of principles, or guidelines, makes it a kind of well-organised common sense approach. This well-organised common sense approach in conventional finance has proved to be very fruitful. Its application within the value framework of Islamic finance can be equally productive.

### 5.4 Data

In the deductive approach data plays a crucial role. Without data Step 2 cannot be carried out at all.

Islamic finance faces a severe problem in that for most of its development adequate data has not been available. For this reason, much of the published research in Islamic finance has focused on theoretical discussions and on interpretations of the principles of Islamic finance.
Nevertheless, researchers have produced valuable case study and survey research, as well as empirical studies making use of such data sets that have been available.

The situation concerning data has gradually improved over time. The construction of Shariah compliant equity and Sukuk indices has resulted in research comparing the risk/expected return performance of conventional and Islamic indices. In Chapter 7, index data is also used for testing certain of the hypotheses on Sukuk risk investigated in this study.

In addition to the index data, this study also uses a proprietary data set provided by Idealratings, Inc. The Idealratings data makes it possible, for the first time, to conduct regression tests on the power of the hypothesised Sukuk risk factors to explain Sukuk returns, similar to the regression tests conducted in conventional finance.

In the deductive method, it is important that the hypotheses are stated in advance of conducting the empirical tests. Sometimes in the social sciences an approach is taken where the ‘hypotheses’ are discussed only after looking at the data. In other words, some data is collected and then, after looking at the data a story is told that fits the facts. Sometimes the impression is given that, since this story fits the facts it must be true. This is not logical. There will be many other stories that also fit the facts.

In reality this approach is a version of the inductive method; data is collected and the truth is supposed somehow to emerge from the data by something resembling the Principle of Induction. However, as noted, the Principle of Induction is not a valid principle of logic.

The above approach can, however be justified within the deductive method. According to the deductive method what is going on here can be explained as follows; some data is collected, and then some hypotheses are obtained by looking at the data. This makes sense from the standpoint of the deductive method. However, the problem is that all the data has been used up in obtaining the hypotheses. A new data set is then required in order to critically test the hypotheses.

The problem here is that in Islamic finance, data is in extremely short supply. This is why it is so important that the hypotheses be formulated before looking at the data. Valuable data should be used in critically testing hypotheses, and not wasted by being used up in formulating the hypotheses.

The data used in this study is discussed further in Chapter 6, and in the data sections of Chapters 7 and 8.

The figure below shows an overview of the research methodology stages:
Figure 52: Research Methodology diagram

Methodology Structure

Population taken from the global Sukuk market

Test Research Hypotheses

Sampling selected

Common Sukuk and conventional bonds indices & Tradable Sukuk

Data Collection

Secondary Data
Annual Report, Sukuk Prospectus (Observation techniques)
Also, Data engines have been used are (Bloomberg, DataStream, IdealRatings, IFIS and Taduwal)

Data Analysis Approach

Statistical Measurement Instruments

Quantitative (Deductive or falsification)

Financial ratios & risk assessment techniques plus statistic toolkit

Set a compression between the global indices of Sukuk Vs conventional bonds

Set a compression among Sukuk structures

Finding & Discussion

General return Based Performance

Maturity Based Performance

Structure Based Performance
5.5 Conclusion

Because of the limited amount of data in Islamic finance, the research method should be chosen that makes the most use of this very scarce resource. This is why the deductive approach has been chose in this research study.

Popper’s falsificationist approach cannot be applied too strictly in the social sciences. However, it is a valuable tool for social science research when considered as a set of principles or guidelines, rather than as a strict set of rules.

After discussing the data in Chapter 6, the deductive method will be applied in the empirical research conducted in Chapters 7 and 8.

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CHAPTER 6:

DATA DESCRIPTION

6.1 Introduction

This chapter describes the data resources used in the empirical research in this thesis. The chapter explains what data are available in the Sukuk research field and explains why there is a limitation of Sukuk data. The main Sukuk data suppliers are presented with examples of academic papers that have been conducted using these data. The data used in the thesis is presented and discussed.

6.2 Sukuk data at a glance

Sukuk are recent entrants into the financial world. Their first appearance was back in the 1990s, with initially slow growth, followed by increasingly rapid expansion till 2009, when Sukuk issuance fell in line with the collapse in conventional financial markets in the aftermath of the 2008 financial crisis. Since then Sukuk markets have recovered, with the current Sukuk growth rate estimated to be around 15-20% annually (Nafirth, 2014). Despite its rapid growth, the Sukuk market is still tiny and illiquid when compared to the conventional bond market. Furthermore, data on the bond market is available going back even so far as the fixed income markets in Genoa and Naples in Italy in the 16th century. Hence, due to its short existence, small size and illiquidity the historical data available on Sukuk trades is negligible when compared to the empirical data available for conventional bonds.

This presents a considerable obstacle to undertaking empirical research on Sukuk.

6.3 The limitations of empirical research on Sukuk

Much of the published research on Sukuk comprises descriptive and qualitative research, and the empirical research on Sukuk is limited. This observation has been found by many researchers, such as Naifara, Hammoudeh and Al-dohaiman (2016), Zulkhibri (2015), Vishwanath and Azmi (2009), Abdel-Khaleq and Richardson (2007) and Tariq and Dar (2007).

Compared to the research on conventional bonds, little research on Sukuk has been published or indexed by major academic publishers (see Table 15 below). Most academic research on Sukuk has been reported in conference and seminar papers. This is in part due to the fact that Sukuk markets are quite new, and conferences and seminars are the appropriate forums for exchanging ideas on new phenomena in academic research.

According to Zulkhibri (2015) research in Islamic finance, specifically on Sukuk, is underdeveloped for several reasons, summarised as follows:

- Limited number of academic institutions where teaching, scholarship and research in Islamic finance is conducted.
- Shortage of quality refereed journals devoted to Islamic finance.
- Lack of global standards and accreditation for Islamic finance courses.
- Absence of available and consistent data
- Ongoing debates on the concept of Sukuk among Shariah scholars.

In addition to these reasons, there is an absence of research drivers for Sukuk research compared with conventional bonds, such as the limited global adoption of Sukuk as an investment instrument by governments, and the shortage of knowledge about Sukuk among investors.

Zulkhibri (2015) categorised the existing literature on Sukuk into three groups:

1. Research on the theoretical principles and nature of Sukuk
2. Discussion on the operational matters related to Sukuk issuance and structure in practice
3. The role of Sukuk in economic development.

The table below presents publications of Sukuk research from 1990 to 2016

*Table 15: Publication of Sukuk research from 1990 to 2016*

<table>
<thead>
<tr>
<th>Database or publisher</th>
<th>Total no. of Journals</th>
<th>No. of Sukuk articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Direct</td>
<td>5177</td>
<td>74</td>
</tr>
<tr>
<td>Scopus Elsevier</td>
<td>5300</td>
<td>74</td>
</tr>
<tr>
<td>Saudi Digital Library</td>
<td>300</td>
<td>316</td>
</tr>
<tr>
<td>Taylor &amp; Francis</td>
<td>168</td>
<td>1</td>
</tr>
<tr>
<td>Wiley-Blackwell</td>
<td>53</td>
<td>4</td>
</tr>
<tr>
<td>Springer</td>
<td>92</td>
<td>0</td>
</tr>
<tr>
<td>Interscience</td>
<td>70</td>
<td>6</td>
</tr>
<tr>
<td>Emerald Insight</td>
<td>84</td>
<td>42</td>
</tr>
<tr>
<td>Google Scholar (Arabic only)</td>
<td>More than 160 million</td>
<td>309</td>
</tr>
</tbody>
</table>

*Source: Zulkhibri (2015) and updated by the Author (2016)*

The table above counts all journals in subjects of economics, finance, accounting, business, and management; it also uses the keywords “Sukuk”, “Islamic Bonds” and “Islamic Securities”. These articles in the main body of the table are only those shown in the English language, and available articles in other languages such as Arabic are not included. However, the last line of the table contains Arabic articles selected from the Google Scholar database to enhance the table above with another aspect of the research position in Sukuk. Of course, searching in different languages will present more details of the conducted research position on Sukuk.
Data on Sukuk have developed in line with the development of the Sukuk market. Currently, only 27 countries in the world are utilising Sukuk in their financial markets according to the IIFM Sukuk report (2015). Hence, data on Sukuk are still underdeveloped compared to its counterpart conventional bonds, which currently penetrate most financial markets around the world. Thus, it is expected that data on Sukuk will improve alongside the continuing expansion of Sukuk markets.

There are a few data providers in Sukuk, as well as in Islamic finance generally. The next section presents the common data suppliers for the global Sukuk markets.

6.4 Data suppliers in Sukuk markets

Researchers in empirical finance usually collect data from reliable data engines, with most researchers using more than one data source when possible. The reason for using more than one data source is to close any gaps in missing data and to cross-check the reliability of the data. Here is a brief description of the commonly used data engines in empirical research papers on Sukuk:

- **Thomson Datastream**: Datastream is a global financial and macroeconomic data platform covering equities, stock market indices, currencies, company fundamentals, fixed income securities and key economic indicators for 175 countries and 60 markets. Some examples of papers that used Thomson Datastream as the data collecting platform for their research are: Haron and Ibrahim (2012), Ahmad and Abd Rahim (2014), and Rahim, Nursilah and Ahmad (2015).

- **IFIS software**: Islamic Finance Information Service (IFIS) is a very comprehensive and user-friendly online Islamic finance information portal with global coverage that tracks world-wide developments in the Islamic financial industry. It is updated frequently to report the latest events in the Islamic finance industry. Recently the IFIS portal incorporated with Global Capital data (Global Capital, 2016). A number of academic papers have selected the IFIS database for their research, such as Ali (2008), Faye, Trika and Kangoye (2013) and Saad, Michael and Brown (2014).

- **IdealRatings**: IdealRatings Inc. is an American company founded in 2006 and headquartered in San Francisco. It is a leading provider of faith-based and responsible investment databases and information, serving top-tier financial institutions in over 25 countries across the globe. IdealRatings screens global equities, REITs, and Sukuk to provide customised solutions for capital markets investment managers. The IdealRatings Islamic financial data includes a Shariah compliant screening and income purification service covering over 40,000 listed equities and virtually the entire Sukuk universe (IdealRatings, 2016). This data is available on the University of Portsmouth campus, and, to the best of the author’s knowledge provides the best currently available data on Islamic equity and Sukuk markets.

- **Bloomberg Terminal**: Bloomberg describes itself as “connecting decision-makers to a dynamic network of information, people and ideas”. Bloomberg quickly and accurately delivers business and financial information, news and insight around the world (Bloomberg, 2016). Bloomberg L.P. is a privately-held
financial software, data, and media company headquartered in Midtown Manhattan, New York City. Bloomberg L.P. provides financial software tools such as an analytics and equity trading platform, data services, and news to financial companies and organisations through the Bloomberg Terminal. Examples of academic papers using Bloomberg Terminal as the main data platform for their research include Samanta and Zadeh (2012), Najeeb, Bacha and Masih (2014) and Klein and Weill (2016).

- **Zawya**: Thomson Reuters Zawya.com, part of Thomson Reuters Middle East, is a leading source of regional news and intelligence, serving more than one million professionals with up-to-date country and industry news as well as essential global coverage from Reuters.

In addition to news, Zawya.com supports business development through research reports, company databases and information on the latest projects from across the MENA region (Zawya, 2016). Sukuk monitoring reports and Sukuk forecast reports are valuable resources for Sukuk researchers. Zawya has been cited in academic and professional reports by Fitriya (2013) and Zulkhibri (2015).

- **Tadawul (تداول)**: On the 19th of March 2007, the Council of Ministers approved the formation of The Saudi Stock Exchange (Tadawul). This was in accordance with Article-20 of the Capital Market Law establishing Tadawul as a joint stock company. Tadawul is the sole entity authorized in the Kingdom of Saudi Arabia to act as both the Securities Exchange (the Exchange) and the Securities Depository Centre (the Centre). It mainly carries out listing and trading in securities, as well as deposit, transfer, clearing, settlement, and registry of ownership of securities traded on the Exchange. The legal status, duties, and responsibilities of the Exchange and Depository Centre are explicitly defined in the Capital Market Law (CML) issued by Royal Decree Number (M/30), dated June 16, 2003. The Exchange is also the official source of all market information (Tadawul, 2016). This data engine is widely used in the literature when research is conducted on the Saudi capital market, such as Polat and Al-khalaf (2014), Hokroh (2013) and Bruce (2012). This research uses Tadawul for enhancing the research data sample with Saudi Arabian Sukuk trades in the capital market.

### 6.5 Data structure

Based on previous studies it can be seen that most of the research in Sukuk has used secondary data. The present study will also focus on secondary data in order to conduct the research analysis. Thus, the first step will be that of data collection with the use of secondary data that relates to the research aims and objectives. According to Saunders, Lewis and Thornhill, (2007) there are some important sources of secondary data, as follows:

- Government studies, reports and archives.
- Any written materials such as textbooks, journals and government publications.

Furthermore, Sukuk issue prospectuses and financial reports; these are collected and analysed as well in order to evaluate the risk profile for these Sukuk types.
In addition, financial research engines will be used to collect updated figures of the market and the indices such as IFIS software, IdealRatings, Bloomberg, Zawya and Tadawul.

However, when using data from secondary sources it is important to show consideration towards certain problems in the secondary sources such as the availability, format, and quality of data. The extent of these problems varies from source to source (Kumar, 2011). In addition, Kumar (2011) discusses certain issues that may arise in the use of secondary data, and which should be addressed when using the data. He summarised these as follows:

- Validity and reliability: The validity of information may vary markedly from source to source. The validity of the data may be evaluated by an examination of previous studies in the research field.

- Personal bias: The use of information from personal diaries, newspapers and magazines may have the problem of personal bias, as these writers are likely to exhibit less rigour and objectivity than one would expect in research reports.

- Availability of data: As always, data availability is the main challenge in the research. It should be available for researchers and readers to extend access to the data, presenting validity and quality.

- Format: Because the secondary data have been built in different formats, it is required to manipulate the data to format required for the research context.

Kumar (2011) explained the two steps in data processing, editing and coding. Editing helps to ensure that the data is clean, i.e. free from inconsistencies and incompleteness. Editing consists of scrutinising the completed research instruments to identify and minimise, as far as possible, errors, incompleteness, misclassification and gaps in the information that was obtained. This is followed by the second step, coding of data, which entails developing a code book, pre-testing it, coding *per se* and verifying the coded data. Moreover, statistics are desirable. It helps to make sense of data, ‘read’ the data, explore relationships and the interdependence between variables, ascertain the magnitude of an existing relationship or interdependence and place confidence in the findings.

It is important to state that Sukuk data is quite limited and that this limitation has an impact on the empirical research that can currently be undertaken. The University of Portsmouth has recently entered into an agreement with one of the leading data providers in Islamic finance, IdealRatings, for the purposes of undertaking joint research and contributing to the development of the Islamic capital markets.

Most previous empirical studies on Sukuk are either case studies, or comparative analyses of the performance of conventional bond indices and Sukuk indices. The reason for this is the limited data available. Some researchers have been able to obtain data for a small number of Sukuk, sufficient to undertake valuable case study research. Data on conventional bond indices and Sukuk indices is obtainable from databases such as Datastream and Bloomberg. Part of the empirical contribution of this thesis is an up-dating and extension of
the ongoing research on comparing the performance of conventional bond and Sukuk indices. This research is presented in Chapter 7.

The empirical research using a sample of the Idealratings data is presented in Chapter 8. The Idealratings services include a Shariah compliant screening and income purification service covering over 40,000 listed equities, and extensive data covering virtually the entire Sukuk universe.

The description of the Sukuk sample data is presented in the table below. The total number of Sukuk is 1806, covering the period from 31st October 2012 to 2nd September 2016.

Table 16: Sukuk data description sample from Sukuk engine of IdealRatings

<table>
<thead>
<tr>
<th>Total Sukuk</th>
<th>1806</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asset class</strong></td>
<td></td>
</tr>
<tr>
<td>Asset Back</td>
<td>Asset Based</td>
</tr>
<tr>
<td>46</td>
<td>1620</td>
</tr>
<tr>
<td><strong>Market type</strong></td>
<td></td>
</tr>
<tr>
<td>International</td>
<td>Domestic</td>
</tr>
<tr>
<td>206</td>
<td>1600</td>
</tr>
<tr>
<td><strong>Issuance size</strong></td>
<td></td>
</tr>
<tr>
<td>&lt;$200m</td>
<td>&gt;$200m</td>
</tr>
<tr>
<td>304</td>
<td>1502</td>
</tr>
<tr>
<td><strong>Shariah structure types</strong></td>
<td></td>
</tr>
<tr>
<td>Asset Based (Ijarah)</td>
<td>Debit Based (Murabaha, Istasna’a and Twaraq)</td>
</tr>
<tr>
<td>258</td>
<td>658</td>
</tr>
<tr>
<td>Agency Based (Wakalah)</td>
<td>Hybrid based (Mix structures)</td>
</tr>
<tr>
<td>57</td>
<td>215</td>
</tr>
</tbody>
</table>

*Source: IdealRatings, 2016*

The majority, over 90% of Sukuk are non-tradable, and in nearly all cases are held by investors to the redemption date. In that case holding period returns can be calculated only for a single time period, from the date of issuance to maturity.

Sukuk can be either fixed or floating, where the coupons on floating rate Sukuk are referenced to a benchmark index such as LIBOR. While the exact interest formulas and historical coupon rates are available for, for example, USD denominated issues, to the best of the researcher’s knowledge this information is not available for, for example, the majority of Malaysian Ringgit denominated issues, from any source, official or un-official. After cleaning the data there is a total of 113 tradable Sukuk, which actually did trade in the secondary market,
and for which market prices and other information necessary for computing total Sukuk market returns exists. This appears to be the most complete data set currently available on Sukuk market returns.

The table and figure below show the data sample description.

Further detailed information on the Idealratings data set is given in Chapter 8, where the results of the regression analysis are presented.

*Table 17: Data sample description*

<table>
<thead>
<tr>
<th>Sukuk status</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sukuk outstanding</td>
<td>118</td>
<td>Matured Sukuk</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sukuk Coupon rate type</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed coupon rate</td>
<td>119</td>
<td>Floating coupon rate</td>
</tr>
</tbody>
</table>

*Figure 53: Data sample description*
6.6 Conclusion

In the current state of development of Sukuk markets, only very limited empirical data is available. Previous empirical research on Sukuk is mainly of two kinds; case study research based on detailed information, but for only a small number of Sukuk, and quantitative research comparing the performance of broad-based conventional bond and Sukuk indices. The data for the case study research has generally been compiled by individual researchers, while the data on conventional bond and Sukuk indices is usually obtained from widely available data sources such as Datastream and Bloomberg. This index data is also used in the present study.

This research also contributes to the empirical literature by using a new source of data, the IdealRatings Sukuk data, to use in a regression analysis of the risk factors hypothesized to be significant in explaining Sukuk market returns. To the best of the author’s knowledge, the data set used in this research is currently the most complete and accurate available.

The comparative research on conventional bond and stock indices is reported in Chapter 7. The risk factor analysis using the Idealratings data is reported in Chapter 8.
CHAPTER 7

A CRITICAL EVALUATION OF THE RISK AND RETURN PERFORMANCE OF SUKUK AGAINST CONVENTIONAL BONDS

7.1 Introduction

The previous chapters presented the research flow and story. This and the following chapter present some of the empirical work of the thesis.

In Chapters 1 and 2 it has been noted that there are both similarities and differences between Sukuk and conventional bonds. The risk-return performance of Sukuk and conventional bonds should be the similar, to the extent that Sukuk and conventional bonds are similar. For example, both Sukuk and conventional bonds are affected by credit risk and liquidity risk. However, the risk profiles of Sukuk and conventional bonds differ in important ways as well. In some ways Sukuk are more risky than conventional bonds. The most important of these Sukuk specific risks is Shariah compliance risk. In other respects, Sukuk are safer than conventional bonds. For example, it is argued that asset backed Sukuk are less risky than conventional bonds.

In this chapter a carefully selected sample of Sukuk and conventional bond indices is chosen and the risk-return performance of the indices is compared, in order to test the hypotheses developed in the following section. This research refines and extends the research on the relative performance of Sukuk and conventional bonds reported in the previous literature.

7.2 Hypothesis development


7.2.1 Similarities between Sukuk and conventional bonds

As noted by Tariq and Dar (2007), Wilson (2008), Alsaeed (2012) and Afshar (2013), while there are significant differences between Sukuk and conventional bonds, there are important similarities as well. The similarities arise for a number of reasons:

- Islamic financial instruments in the modern era have generally been developed by taking existing conventional instruments and adapting them in order to make them compliant with Shariah. Sukuk therefore have many features in common with conventional bonds.
There are a number of reasons why the approach of adapting conventional instruments has been taken.

- In the context of global financial markets Islamic finance has had to develop alongside or within existing conventional legislative and regulatory frameworks. Islamic financial instruments have therefore been designed to conform to these frameworks.

- Conventional finance is well-understood by virtually all participants in the financial markets. Knowledge of Islamic finance is still relatively limited. Even though expertise in Islamic finance has grown rapidly, the knowledge base of Islamic finance has struggled to keep up with the annual double-digit growth in the Islamic financial markets. It is still easier for many issuers, investors, regulators and other market participants to think within the framework of conventional, and this is reflected in the securitisation mechanisms in the Sukuk markets.

- Some Islamic financial products are disguised as conventional finance products. For example, interest is tax deductible in most tax jurisdictions. This can place Islamic financial products at a tax disadvantage compared to conventional products. Sometimes, what is in reality a Shariah compliant Islamic rate of return is disguised as an interest rate in order to obtain tax deductibility.

In view of the strong similarities between Sukuk and conventional bonds identified and discussed in the literature, the following hypothesised:

*H1: The risk-return performance of comparable Sukuk and conventional bond indices is similar.*

In theory, the most important difference between Sukuk and conventional bonds is that the rate of return on Sukuk should not be an interest rate. However, many commentators have observed that Sukuk indices respond to changes in interest rates similarly to conventional bond indices (Abdul Rauf and Ibrahim, 2014). For example, the Federal Open Market Committee (FOMC), which dictates US monetary policy, voted unanimously in December 2015 to raise rates for first time since the 2008 financial crisis. Rates credit crunch. The Federal Funds Rate (FFR) was raised by 0.25 percentage points, from its previous 0pc to 0.25pc range. Prior to the rate rise both Sukuk and conventional bonds were volatile as the market speculated on the possibility of a rate rise, which is understandable from the aspect of conventional bonds but questionable from the aspect of Sukuk. However, such behaviour is in line with H1; coupon rates on Sukuk are typically given in terms of a conventional interest reference rate, exposing Sukuk to interest rate risk in the same way as conventional bonds (Godlewski et. al., 2011, Miller, et al, 2007).

**7.2.2 Differences between Sukuk and conventional bonds**

The research literature has also noted ways in which Sukuk differ from conventional bonds.
The major difference is that Sukuk are exposed to Shariah compliance risk, the risk that an issued Sukuk may subsequently be deemed non-Shariah compliant. This risk is greatly increased because of the under-developed state of Islamic finance legislative and regulatory frameworks, and differences in legal and regulatory regimes in different countries. Thus, Shariah compliance risk exposure makes Sukuk riskier than bonds.

However, there are ways in which Sukuk can be safer than conventional bonds. As discussed in Chapter 4, Sukuk structure should be regarded as a risk factor, since Sukuk with different structures have different risk profiles. For example, asset-backed Sukuk are safe, and indeed safer than most conventional bonds. It has been argued that, in theory, Sukuk should in general be safer than conventional bonds.

Given that the choice of Sukuk structure may off-set Shariah compliance risk, it might seem that the relationship between Sukuk risk and conventional bond risk is difficult to discern. In this respect the following point is important; Sukuk structure is currently not very well understood. Therefore, it is very unlikely that Sukuk structure risk is being correctly priced in the market.

As discussed in Chapters 3 and 4, research into the impact of Sukuk structure on risk is a more recent development, and is not currently widely known. On the other hand, failures of Shariah compliance are highly visible, and market participants are well aware of the risks posed by Shariah non-compliance. It is therefore conjectured that the market perceives Sukuk to be riskier than conventional bonds, and that this perception is reflected in the relative performance of Sukuk and conventional bond indices.

\[ H2: \text{The returns on Sukuk indices are higher than returns on comparable conventional bond indices.} \]

This is because Sukuk, being perceived to be risky investments, are priced by investors to yield a high return as compensation for bearing this risk.

\[ H3: \text{The volatility of returns on Sukuk indices is higher than the volatility of returns on comparable conventional bond indices.} \]

Shariah compliance risk is non-diversifiable. A ruling by Shariah scholars can influence the entire Sukuk market; diversified Sukuk indices are also exposed to this risk.

7.2.2.1 Financial crisis risk

There is an exception to hypothesis \( H3 \), namely:

\[ H4: \text{Sukuk indices fall less than comparable conventional bond indices during a banking crisis.} \]

A fundamental principle of Islamic finance is that financing is tied to the needs of the real economy. Islamic financial institutions and instruments should be less exposed to speculation and over-leverage. Hence it is expected that Sukuk indices should be exposed to less downside risk in a banking crisis.
7.3 Data and methodology

The calculation of conventional bond returns is given as follows:

The month-to-date (MTD) total return ($TR_t$) of a conventional bond on day $t$ is the sum of the MTD interest return and the MTD price return:

$$TR_t = IR_t + PR_t$$

Where:

$IR_t = MTD$ interest return on day $t$.

$PR_t = MTD$ market price return on day $t$.

Price return measures the return due to the change in the market price of the bond. Interest return (or coupon return) includes the return due to the interest earned on that bond.

Sukuk returns are computed using the same formula except that the conventional bond interest rate is replaced by the Sukuk coupon profit rate.

In order to test the hypotheses, the study uses globally based total return indices. The reason for this is that a total return index takes into account the price changes and interest accrual and payments of each index constituent.

In order to compare the performance of Sukuk and conventional bonds, comparable indices must be used. There are no exactly comparable indices, so some considerable judgement is required in making the selection. For example, according to Cakir and Raei (2007), Sukuk are in many aspects similar to conventional Eurobonds. Therefore, it is justified to match FTSE Euro Corporate sub-indices against Sukuk sub-indices, as indicated in Table 18.

New Sukuk indices that can provide better comparisons have recently been introduced to the market. On the 10th October 2016 Nasdaq Dubai and IdealRatings launched a new Sukuk index, the Nasdaq Dubai Ideal Ratings Global Sukuk Index, covering the global Sukuk market with a minimum issue size lower than that of the Dow Jones Sukuk Index; the latter limits coverage to Sukuk issues of US$200 million or greater, compared to the former with a limit of US$100 million or greater. Thus, the Nasdaq Dubai Ideal Ratings Global Sukuk Index has wider coverage than Dow Jones Sukuk Index. However, the base date of the new index is 1st November 2012 compared to Dow Jones Sukuk Index base date of 30 September 2005. Hence the Dow Jones Sukuk Index is used in this study.
Figure 54: Sukuk ownership in the global market

The indices used here are also suggested by those already used in the literature, for example, by Gencay, Selcuk and Whitcher (2002), Abdul Rauf and Ibrahim (2014), and by Zawya, IFIS and Ernst and Young reports (2010-2014).

The indices used in this study are presented in Table 18 and Tale 19. The data was downloaded from Bloomberg.
Table 18: Description of conventional bond and Sukuk indices used in this study

<table>
<thead>
<tr>
<th>Market</th>
<th>Index Name</th>
<th>Type</th>
<th>Description</th>
<th>Base Value</th>
<th>Base date</th>
<th>Currency</th>
<th>Bloomberg Ticker</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Global conventional bond market</td>
<td>J.P. Morgan Global Aggregate Bond Index</td>
<td>Bond</td>
<td>The J.P. Morgan Global Aggregate Bond Index (JPM GABI) is a comprehensive global investment grade benchmark. The JPM GABI series represents a new flagship foundation which ties together established J.P. Morgan indexes and serves as a platform for future index products and tradable offerings. Additionally, the new series provides investors with more benchmark options via a flexible aggregate index.</td>
<td>100</td>
<td>Nov 1988</td>
<td>USD</td>
<td>JGAGGUSD</td>
</tr>
<tr>
<td>2 Global Sukuk Market</td>
<td>Dow Jones Sukuk Total Return</td>
<td>Sukuk</td>
<td>The Dow Jones Sukuk Total Return (ex-Reinvestment) is designed to track the performance of global Islamic fixed income securities, also known as Sukuk. The index measures an investment (excluding reinvestment) in U.S. dollar-denominated, investment-grade Sukuk that have been screened for Shariah compliance</td>
<td>100</td>
<td>30 Sep 2005</td>
<td>USD</td>
<td>DJSUKTXR</td>
</tr>
</tbody>
</table>

Conventional bonds market indexes are commonly used for analysing bonds and managing bond portfolios. They have several significant uses, including acting as performance benchmarks, as a benchmark for investors who want to invest through index funds, and as a means to determine fixed income asset risk/return characteristics and correlations as inputs into the asset allocation decision (Frank and David, 2005).

The use of maturity based indices is widespread. Sub-indices based on maturity are used in this study in order to control for maturity. Maturity is a measure of interest rate risk. Given that both Sukuk and conventional bonds are strongly exposed to interest rate risk, maturity mis-matching could lead to incorrect results. This accounts for the use of sub-indices matched for maturity in this study.

One of the challenges is the limited research conducted on maturity based indices. Among the existing empirical research on the comparison between conventional bond and Sukuk, Abdul Rauf and Ibrahim (2014) investigated the relationship between total return and risk of Sukuk and conventional bonds including maturity risk as a critical factor. They used Dow Jones sub-indices based on maturity. They emphasised the importance of tracking total return performance according to different factors to introduce an appropriate tracking to evaluate the return performance. Table 2 below presents a description of the study’s sample of sub-indices according to maturities of Sukuk and conventional bonds.
Table 19: Description of conventional bonds and Sukuk sub-indices used in the study

<table>
<thead>
<tr>
<th>Market Description</th>
<th>Market</th>
<th>Index Name</th>
<th>Type</th>
<th>Description</th>
<th>Base Value</th>
<th>Sub-indices</th>
<th>Base date</th>
<th>Currency</th>
<th>Bloomberg Ticker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global bonds market</td>
<td>FTSE</td>
<td>Bond</td>
<td>FTSE Euro Corporate Bonds indices include Euro issues from corporate entities. This excludes Government authorities or other public issuers and banks. The index also includes issues from external finance firms of corporate entities, with a minimum rating of BBB-, denominated in Euro. The average life or time to maturity index is derived by the time to maturity and weighted by the nominal amount outstanding.</td>
<td>100</td>
<td>The index has five maturity sub-indices, and four of them are selected to match with Sukuk indexes weight level. Those indices are:</td>
<td>All sub-indices are July 1999</td>
<td>All indices include four credit rating series: AAA, AA, A and BBB</td>
<td>USD</td>
<td>FECM3</td>
</tr>
<tr>
<td>Global Sukuk Market</td>
<td>Dow Jones Sukuk Total Return</td>
<td>Sukuk</td>
<td>The Dow Jones Sukuk Total Return Measures the performance of global Islamic bonds—also known as Sukuk. Its screens for Shariah compliance consistent with those of the Dow Jones Islamic Market (DJIM) Indices. It is composed of 39 Global U.S. dollar-denominated investment-grade bonds that are Shariah-compliant.</td>
<td>100</td>
<td>The index has four maturity sub-indices:</td>
<td></td>
<td>All Securities are rated at least BBB-/Baa3 by S&amp;P, Moody’s, or Fitch</td>
<td>USD</td>
<td>DJSUK3T</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1-3 years</td>
<td>30 Sep 2005</td>
<td>DJSUK5T</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3-5 years</td>
<td>30 Sep 2005</td>
<td>DJSUK7T</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5-7 years</td>
<td>30 April 2010</td>
<td>DJSUK10T</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>and 7-10 years</td>
<td>31 July 2007</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.4 Results

The results of the study are summarised in these tables and graphs. The study obtained the data from the Bloomberg and Dow Jones databases (2016) for the period of 30th September 2005 to 31st May 2016. The recent financial crisis in 2007-2009 is used to test the hypothesis H4 on the performance of Sukuk and conventional bond indices during a banking crisis. Moreover, measuring sub-indices according to maturities calculated also helps to identify the position of the performance of each index. The study used data description tools to measure the central tendency using mean then measured the variability using standard deviation.

Data modelling techniques are used for continuous data measurements: return on price index (ROPI), Pearson correlation and regression analysis model. Regression analysis is used to measure the sensitivity of Sukuk performance in risk and return compared its counterpart conventional bonds.

Table 30: Statistical description for the Sukuk and conventional bonds indices for the pre-crisis period

<table>
<thead>
<tr>
<th>Bloomberg ticker</th>
<th>Type</th>
<th>Total return performance</th>
<th>Risk performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Avg. monthly return</td>
<td>Max.</td>
<td>Min.</td>
</tr>
<tr>
<td>JGAGGUS</td>
<td>Bonds</td>
<td>All Maturities</td>
<td>0.0475</td>
</tr>
<tr>
<td>DJSUKTXR</td>
<td>Sukuk</td>
<td>All Maturities</td>
<td>0.0545</td>
</tr>
<tr>
<td>FECM3</td>
<td>Bonds</td>
<td>1-3 Yrs</td>
<td>-0.0457</td>
</tr>
<tr>
<td>DJSUK3T</td>
<td>Sukuk</td>
<td>1-3 Yrs</td>
<td>0.0496</td>
</tr>
<tr>
<td>FECM5</td>
<td>Bonds</td>
<td>3-5 Yrs</td>
<td>-0.00018</td>
</tr>
<tr>
<td>DJSUK5T</td>
<td>Sukuk</td>
<td>3-5 Yrs</td>
<td>0.058902</td>
</tr>
<tr>
<td>FECM7</td>
<td>Bonds</td>
<td>5-7 Yrs</td>
<td>0.0210</td>
</tr>
<tr>
<td>DJSUK7T*</td>
<td>Sukuk</td>
<td>5-7 Yrs</td>
<td></td>
</tr>
<tr>
<td>FECM10</td>
<td>Bonds</td>
<td>7-10 Yrs</td>
<td>0.02337</td>
</tr>
<tr>
<td>DJSUK10T*</td>
<td>Sukuk</td>
<td>7-10 Yrs</td>
<td></td>
</tr>
</tbody>
</table>

* The index wasn’t launched in this period

Figure 55: Total return of ROPI of Sukuk and conventional bonds indices for the pre-crisis period

**Total return of All Maturities indexes Sukuk Vs Bonds/ Pre-Crisis period**

**Total return of 1-3 Yrs indexes Sukuk Vs Bonds/ Pre-Crisis period**

**Total return of 3-5 Yrs indexes Sukuk Vs Bonds Pre-Crisis period**
Table 31: Statistical description for the Sukuk and conventional bonds indices during the crisis period

<table>
<thead>
<tr>
<th>Bloomberg ticker</th>
<th>Type</th>
<th>Total return performance</th>
<th>Risk performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Avg. monthly return</td>
<td>Max.</td>
</tr>
<tr>
<td>JGAGGUSD</td>
<td>Bonds</td>
<td>All Maturities</td>
<td>0.07927</td>
</tr>
<tr>
<td>DJSUKTXR</td>
<td>Sukuk</td>
<td>All Maturities</td>
<td>0.0324</td>
</tr>
<tr>
<td>FECM3</td>
<td>Bonds</td>
<td>1-3 Yrs</td>
<td>-0.0131</td>
</tr>
<tr>
<td>DJSUK3T</td>
<td>Sukuk</td>
<td>1-3 Yrs</td>
<td>0.0634</td>
</tr>
<tr>
<td>FECM5</td>
<td>Bonds</td>
<td>3-5 Yrs</td>
<td>-0.0083</td>
</tr>
<tr>
<td>DJSUK5T</td>
<td>Sukuk</td>
<td>3-5 Yrs</td>
<td>-0.0111</td>
</tr>
<tr>
<td>FECM7</td>
<td>Bonds</td>
<td>5-7 Yrs</td>
<td>-0.0014</td>
</tr>
<tr>
<td>DJSUK7T*</td>
<td>Sukuk</td>
<td>5-7 Yrs</td>
<td>0.0642</td>
</tr>
<tr>
<td>FECM10</td>
<td>Bonds</td>
<td>7-10 Yrs</td>
<td>-0.0244</td>
</tr>
<tr>
<td>DJSUK10T</td>
<td>Sukuk</td>
<td>7-10 Yrs</td>
<td>0.0189</td>
</tr>
</tbody>
</table>

* The index wasn’t launched in this period

Figure 56: Total returns of ROPI of Sukuk and conventional bonds indices for during -crisis period

**Total return of All Maturities indexes Sukuk Vs Bonds/ During-Crisis period**

**Total return of 1-3 Yrs indexes Sukuk Vs Bonds/ During-Crisis period**

**Total return of 3-5 Yrs indexes Sukuk Vs Bonds/ During-Crisis period**

**Total return of 7-10 Yrs indexes Sukuk Vs Bonds/ During-Crisis period**
Table 32: Statistical description for the Sukuk and conventional bond indices for the post-crisis period

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JAGGUSD</td>
<td>Bonds</td>
<td>All Maturities</td>
<td>0.02437</td>
<td>0.02833</td>
<td>-0.03874</td>
<td>-0.68928</td>
<td>1.00567</td>
<td>0.04397</td>
<td>0.00016</td>
</tr>
<tr>
<td>DJSUKTXR</td>
<td>Sukuk</td>
<td>All Maturities</td>
<td>0.05229</td>
<td>0.018917</td>
<td>-0.021968</td>
<td>-0.707731</td>
<td>0.773569</td>
<td>0.026720</td>
<td>0.000059</td>
</tr>
<tr>
<td>FECM3</td>
<td>Bonds</td>
<td>1-3 Yrs</td>
<td>-0.00153</td>
<td>0.08624</td>
<td>-0.04964</td>
<td>0.52949</td>
<td>0.57173</td>
<td>0.09206</td>
<td>0.00071</td>
</tr>
<tr>
<td>DJSUK3T</td>
<td>Sukuk</td>
<td>1-3 Yrs</td>
<td>0.03540</td>
<td>0.02188</td>
<td>-0.01707</td>
<td>0.08379</td>
<td>3.25516</td>
<td>0.01989</td>
<td>0.00003</td>
</tr>
<tr>
<td>FECM5</td>
<td>Bonds</td>
<td>3-5 Yrs</td>
<td>0.01230</td>
<td>0.05565</td>
<td>-0.02329</td>
<td>1.12893</td>
<td>1.29897</td>
<td>0.05960</td>
<td>0.00030</td>
</tr>
<tr>
<td>DJSUK5T</td>
<td>Sukuk</td>
<td>3-5 Yrs</td>
<td>0.05518</td>
<td>0.01828</td>
<td>-0.01716</td>
<td>-0.57892</td>
<td>0.87322</td>
<td>0.02272</td>
<td>0.00004</td>
</tr>
<tr>
<td>FECM7</td>
<td>Bonds</td>
<td>5-7 Yrs</td>
<td>0.00192</td>
<td>0.03979</td>
<td>-0.01693</td>
<td>1.04630</td>
<td>0.49179</td>
<td>0.04496</td>
<td>0.00017</td>
</tr>
<tr>
<td>DJSUK7T</td>
<td>Sukuk</td>
<td>5-7 Yrs</td>
<td>0.01495</td>
<td>0.04724</td>
<td>-0.19061</td>
<td>-4.85912</td>
<td>32.5302</td>
<td>0.09650</td>
<td>0.00078</td>
</tr>
<tr>
<td>FECM10</td>
<td>Bonds</td>
<td>7-10 Yrs</td>
<td>0.01491</td>
<td>0.04288</td>
<td>-0.01783</td>
<td>1.03089</td>
<td>1.09922</td>
<td>0.04064</td>
<td>0.00014</td>
</tr>
<tr>
<td>DJSUK10T</td>
<td>Sukuk</td>
<td>7-10 Yrs</td>
<td>0.04278</td>
<td>0.03755</td>
<td>-0.04563</td>
<td>-0.33442</td>
<td>1.62933</td>
<td>0.05098</td>
<td>0.00022</td>
</tr>
</tbody>
</table>

Figure 57: Total returns of ROPI of Sukuk and conventional bonds indices for post-crisis period

Total return of All Maturities indexes Sukuk Vs Bonds/ Post-Crisis period

Total return of 1-3 Yrs indexes Sukuk Vs Bonds/ Post-Crisis period

Total return of 3-5 Yrs indexes Sukuk Vs Bonds/ Post-Crisis period

Total return of 7-10 Yrs indexes Sukuk Vs Bonds/ Post-Crisis period

Total return of 5-7 Yrs indexes Sukuk Vs Bonds/ Post-Crisis period
Table 33: Statistical description for the Sukuk and conventional bond indices for the overall period

<table>
<thead>
<tr>
<th>Bloomberg ticker</th>
<th>Type</th>
<th>Total return performance</th>
<th>Risk performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Avg. monthly return</td>
<td>Max.</td>
</tr>
<tr>
<td>JGAGGUSD Bonds</td>
<td>All Maturities</td>
<td>0.04412</td>
<td>0.06561</td>
</tr>
<tr>
<td>DJSUKTXR Sukuk</td>
<td>All Maturities</td>
<td>0.04691</td>
<td>0.09565</td>
</tr>
<tr>
<td>FECM3 Bonds</td>
<td>1-3 Yrs</td>
<td>-0.00996</td>
<td>0.08624</td>
</tr>
<tr>
<td>DJSUK3T Sukuk</td>
<td>1-3 Yrs</td>
<td>0.04494</td>
<td>0.11199</td>
</tr>
<tr>
<td>FECM5 Bonds</td>
<td>3-5 Yrs</td>
<td>0.00504</td>
<td>0.05565</td>
</tr>
<tr>
<td>DJSUK5T Sukuk</td>
<td>3-5 Yrs</td>
<td>0.03698</td>
<td>0.09441</td>
</tr>
<tr>
<td>*FECM7 Bonds</td>
<td>5-7 Yrs</td>
<td>-0.00051</td>
<td>0.03979</td>
</tr>
<tr>
<td>*DJSUK7T Sukuk</td>
<td>5-7 Yrs</td>
<td>0.01495</td>
<td>0.04724</td>
</tr>
<tr>
<td>FECM10 Bonds</td>
<td>7-10 Yrs</td>
<td>0.00058</td>
<td>0.04288</td>
</tr>
<tr>
<td>DJSUK10T Sukuk</td>
<td>7-10 Yrs</td>
<td>0.04863</td>
<td>0.19530</td>
</tr>
</tbody>
</table>

*The comparison weight designed from 30th April 2010 to 30th May 2016 because DJSUK7T launched later than FECM7.

**The comparison weight designed from 30th July 2007 to 30th May 2016 because DJSUK10T launched later than FECM10.

Figure 58: Total returns of ROPI of Sukuk and conventional bonds indices for the overall period

- Total return of All Maturities indexes Sukuk Vs Bonds/ Overall period
- Total return of 1-3 Yrs indexes Sukuk Vs Bonds/ Overall period
- Total return of 3-5 Yrs indexes Sukuk Vs Bonds/ Overall period
- Total return of 5-7 Yrs indexes Sukuk Vs Bonds/ Overall period
- Total return of 7-10 Yrs indexes Sukuk Vs Bonds/ Overall period
Furthermore, the regression analysis shows the relationship between DJ Sukuk total return index and J.P. Morgan Global Aggregate bond index (USD). In Appendix F the graphs and tables present the results.

7.5 Discussion and analysis

The key results, in summary, are as follows. First recall the hypotheses developed in the hypothesis development section, Section 7.2:

H1: The risk-return performance of comparable Sukuk and conventional bond indices is similar.

H2: The returns on Sukuk indices are higher than returns on comparable conventional bond indices.

H3: The volatility of returns on Sukuk indices is higher than the volatility of returns on comparable conventional bond indices.

H4: Sukuk indices fall less than comparable conventional bond indices during a banking crisis.

The results for the entire period 2005-2016 for the aggregate indices, the DJ Sukuk all maturities global index and the J.P. Morgan Global Aggregate conventional bond index, corroborate H1, H2 and H3. However, the results for the maturity based indices for the whole 2005-2016 are more mixed, while the results for the sub-periods are very mixed. A more detailed discussion follows.

The results presented above show the comparison of return and risk performance of Sukuk over conventional bonds in the global market. In terms of average annualised monthly return, the DJ Sukuk all maturities global index outperforms its counterpart over the entire examined period (2005-2016). In terms of volatility, the J.P. Morgan Global Aggregate conventional bond index shows a safer risk performance than the DJ Sukuk global index, as shown in Table 33 and Figure 54 above. These results are supportive of hypotheses H2 and H3, that Sukuk are higher risk, higher expected return securities when compared to conventional bonds.

It can be seen that the average annualised monthly return of the DJ Sukuk all maturities global index is similar to that of the J.P. Morgan Global Aggregate conventional bond index returns overall in the period, where the DJ Sukuk all maturities global index achieved 4.69% and the J.P. Morgan Global Aggregate conventional bond index 4.41%. The volatility figures of 5.558% for the J.P. Morgan Global Aggregate conventional bond index and 7.387% for the DJ Sukuk index show that these indices have similar volatility. Thus, hypothesis H1 that the risk-return profiles of Sukuk and conventional bond indices is corroborated.

These results also exemplify the positive relationship between risk and return that should hold in an efficient market.
These results are in contrast with those of Alsaeed (2012) who found that Sukuk have a better risk profile than bonds, being supported with mandatory underlying assets to reduce risk exposure. However, the study results are similar to those of Afshar (2013), who justified his results in terms of type of underlying Sukuk assets, such as tangible or intangible, existing or described with deferred delivery, usufruct or services. In addition, another justification is that the risk profile is fed by the Shariah influence in the Sukuk market as explained in Chapter 4, and discussed in Section 7.2.

Thus, the results for the overall 2005-2016 period and the aggregate indices corroborate the well-motivated hypotheses $H_1$, $H_2$ and $H_3$, and are in line with the correct theoretical relationship of conventional finance. However, this clear picture dissolves when the mixed results for the maturity based indices and for the sub-periods are considered.

Sukuk recorded lower risk in the pre-crisis period and recording a higher return compared to its counterpart bond index. Meanwhile, the picture is opposite in the bond index. Surprisingly enough, during the crisis period the position swaps between each index. Sukuk became higher risk than conventional bonds and with lower returns than conventional bonds. The results also show the same picture in the post-crisis period. However, the results presented for the overall period are different from sub-periods as the whole period shows that the Sukuk index was riskier than conventional bonds with a higher return compared to the conventional bond index. This is back to the general theory in the finance field. These observations can be attributed to the following reasons:

- **Sukuk pricing issues:** the Sukuk pricing mechanism and process, so far, is still a contentious matter in the Islamic finance industry. According to the literature, there are ongoing debates among experts in the Islamic finance field, such as Al-Amine (2001) and Usmani (2008) on Sukuk pricing methods. The debate concerns two approaches. The first approach is that Sukuk pricing should follow the conventional bond pricing mechanism and involve the interest rate factor; the second is that Sukuk should have its own pricing process according to Sukuk nature and the Shariah securitisation model of Sukuk. In practice, currently, the London Interbank Offered Rate (LIBOR) is the most common benchmark adopted in determining Sukuk returns, but is undesirable under Shariah law because it is an interest-based benchmark. However, the AAOIFI Shariah standard (8) approved interest based indices for benchmarking purposes. As such, the Sukuk pricing process adopts the same pricing mechanism as bonds (Ahmed, Islam and Alabdullah, 2014).

- **The short time period of each sub-period of the research sample:** The sample of research was divided into sub-periods according to the recent financial crisis benchmark. The first issue is that there is no an accurate timeline of when exactly the financial crisis started. The financial crisis began during the summer of 2007 according to the studies cited in Chapter 1. The whole period of the study of 10 years shows a holistic picture compared with a snapshot period based on an estimate of the beginning and ending of the financial crisis. The size of the period plays a critical role in presenting a complete picture of risk and return over the period. Thus, the findings for the sub-time period do not conform with that of the entire time period.
• Shariah risk factor: Shariah risk is a unique risk factor of Sukuk. Therefore, Shariah risk has an impact on the risk performance of the Sukuk index, leading to a higher required rate of return than for conventional bonds. The Sukuk market was hit in 2008 by Usmani’s fatwa when he stated that the majority of existing Sukuk are not in compliance with Shariah principles, leading Sukuk investors to panic. In addition, this was at the time of the global financial crisis (Wilson, 2008). Thus, this double-hit on the Sukuk market may explain the anomalous high risk-low return profile experienced by Sukuk indices during the crisis period.

The regression analysis presents the p-value for each index testing the null hypothesis that the coefficient is equal to zero (no effect). A low p-value (< 0.05) indicates rejection of the null hypothesis. In other words, a predictor that has a low p-value is likely to be meaningful, question because changes in the predictor's value are related to changes in the response variable.

In the output above, it is noticeable that the predictor variables of price movement of the Sukuk index and the conventional bond index are significant because both of their p-values are (0.000). However, the p-values for all other sub-indices of Sukuk compared to sub-indices of conventional bonds are greater than the common alpha level of 0.05, which indicates that this is not statistically significant. Thus, hypothesis of a significant relationship in the price movements between the Sukuk index and the conventional bond index is rejected for sub-periods.

The risk and return matrix below summarises the outputs between Sukuk and conventional bonds as a comprehensive view. This helps to answer the research questions and presents more justification towards the results analysis. Matrix analysis is common in academic research (Meyer, 2000) and follows Tariq and Dar (2007) on presenting risk factors of Sukuk via a matrix approach; the matrix below explains the comparison between Sukuk indices over conventional bond indices based on the output of the research.
Table 34: Risks and return matrix of comparison between outputs of Sukuk index and conventional index

<table>
<thead>
<tr>
<th>Period</th>
<th>Index type</th>
<th>Sukuk</th>
<th>conventional bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Return</td>
<td>Risk</td>
</tr>
<tr>
<td>Pre-crisis</td>
<td>All maturities</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>1-3 Yrs</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>3-5 Yrs</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>*5-7 Yrs</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>*7-10Yrs</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>During crisis</td>
<td>All maturities</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>1-3 Yrs</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>3-5 Yrs</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>*5-7 Yrs</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>7-10Yrs</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Post-crisis</td>
<td>All maturities</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>1-3 Yrs</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>3-5 Yrs</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>5-7 Yrs</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>7-10Yrs</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Whole period</td>
<td>All maturities</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>1-3 Yrs</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>3-5 Yrs</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>5-7 Yrs</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>7-10Yrs</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Average</td>
<td>More higher return</td>
<td>Major risk exposure</td>
<td>Lower return</td>
</tr>
</tbody>
</table>

* The index wasn’t launched in this period

The results for aggregate indices for the entire period support the hypotheses H1, H2 and H3. However, the results for the sub-indices and sub-periods are quite mixed. This is in line with the results of previous studies, where some studies found that Sukuk are less risky than conventional bonds while others found the opposite, such as El Mosaid and Boutti (2014), Saad & Mohamad (2012), Arif and Safri (2012), Godlewski et. al. (2011), Haral (2010); Cheema and Hashmi (2010) and El Mosaid and Boutti (2011), Wilson (2008) and Cakir and Raei (2007). The up-dating and refinements of the previous research presented here tends to confirm the mixed picture on the risk-return relationship of Sukuk compared with conventional bonds.

The discrepancies of the risk and return profiles between Sukuk and conventional bonds can be summarised as follows:

- Real differences between Sukuk and conventional bonds: It can be seen that Sukuk have some risk factors that do not exist for conventional bonds, in particular the Shariah risk factor. The results show that market users...
understand the Shariah risk factor. This indicates that the market is semi-strong efficient towards understanding the Shariah risk factor and understands that there is a real different between Sukuk and conventional bonds.

- The short period of data sample: The general theory of finance states that high-risk instruments are associated with high return. However, the results obtained for some time periods of the study are not in line with this general theory. This may be because the short period of examination for certain time periods, such as the pre-crisis period covering only 2 years, due to the fact that the Sukuk Index, the first global index launched in Sukuk, was founded only in 2005. However, the average for the whole period shows that the risk and return profile overall is within the framework of the general theory that high risk goes together with high return.

- The aftermath of recent financial crisis: There is no accurate data to tell when exactly the recent financial crisis started. There are signs that it began in the summer of 2007 although its main impact was seen in 2008. This crisis hit the Sukuk market and conventional bonds. This implies that the results obtained are to some extent dependent on judgements about the timing of the pre-crisis and post-crisis periods.

7.7 Conclusion

The chapter concludes with several conclusions on the comparative risk and return performance between Sukuk and conventional bonds. The research accepts the first hypothesis $H1$ stating there is no big difference in the risk and return profiles of Sukuk and the counterpart conventional bonds. In contrast, the research rejects the hypothesis $H4$ on the risk and return performance of Sukuk and conventional bond indices during the crisis. Moreover, the relationship of price movements between Sukuk and conventional bonds was statistically proved for aggregate indices, but rejected for sub-indices.

The research contribution of this chapter is summarised in the risk and return matrix, which presents a holistic picture of the risk and return performance of Sukuk compared to conventional bonds. This leads to a better understanding of Sukuk risk securitisation and how it impacts on financial performance.
CHAPTER 8

SUUK STRUCTURE RISK ANALYSIS

8.1 Introduction

Chapter 8 presents the empirical results on the risk factors that are hypothesised to be significant in explaining Sukuk market returns, using the Idealratings Sukuk data introduced in Chapter 6. The story of this chapter is to investigate Sukuk market efficiency in respect of the structure risk factors, while the previous chapter 7 conducted an investigation of Sukuk market efficiency on the Shariah risk factor. Chapter 8 reviews the Sukuk risk factor classifications and then moves on to explain the research hypotheses. The rest of the chapter explains the data and methodology and then discusses the research findings and results.

8.2 Sukuk risk factor classifications

A number of different risk classifications were defined and discussed in Chapters 3 and 4. Of greatest significance for the empirical research of this thesis are:

- Shariah compliance risk
- Legal risk
- Conventional bond risk
- Structure risk

Recall that:

Shariah compliance risk concerns the risk borne by Sukuk investors due the fact that issued Sukuk may subsequently be deemed to be non-compliant, discussed in Chapter 4, Section 4.5.

Conventional bond risks are those risks arising from the fact that Sukuk are, to some extent, similar to conventional bonds, discussed in Chapter 4, Section 4.6.

By legal risk is meant the distinction between asset-backed Sukuk and asset-based Sukuk, discussed in Chapter 3, Section 3.5.

Structure risk concerns the classification of Sukuk into asset-based, equity-based, debt-based and agency-based, as presented in the risk matrix in Chapter 4, Table 14.

8.3 Research hypotheses development

8.3.1 Shariah compliance risk
Shariah compliance risk is of fundamental significance. It is closely related to the legislative and regulatory risks discussed in Chapter 4, Sections 4.6.7 and 4.6.8. Shariah compliance risk is greatly magnified by the fact that the legislative and regulatory frameworks for Sukuk are currently insufficiently developed.

In order to conduct market-based tests of hypotheses about Shariah compliance risk it is necessary to compare the performance of Sukuk and conventional bonds. It is hypothesized that, other things being equal, Sukuk are riskier than conventional bonds, since Sukuk are subject to Shariah compliance risk while conventional bonds are not.

Tests of Shariah compliance risk are reported in Chapter 7. While the results of Chapter 7 are somewhat mixed, some support is obtained for the claim that Sukuk have higher expected return and higher variability of returns than their conventional counterparts.

Shariah compliance risk is not investigated in Chapter 8, since the data set of Chapter 8 is exclusively comprised of Sukuk.

8.3.2 Legal risk

According to the discussion of Chapters 3 and 4, asset-backed Sukuk are safer than asset-based Sukuk. It is therefore hypothesized that asset-backed Sukuk have lower expected returns and lower variability of returns than asset-based Sukuk.

No market-based tests of this hypothesis are possible at the current time. This is because the data set does not contain any asset-backed Sukuk; there are no market prices in the secondary market for asset-backed Sukuk, and no market returns can be calculated.

8.3.3 Conventional bond risk

Sukuk bear many similarities to conventional bonds. These have been discussed extensively in previous chapters. It is therefore hypothesized that the risk-expected return profiles of Sukuk and conventional bonds should be similar, though not the same. This hypothesis was tested in Chapter 7, by comparing the performances of a range of carefully selected Sukuk and conventional bond indices. The results of Chapter 7 support the work of earlier researchers, who have found that the performance of Sukuk and conventional bond indices is quite similar.

Chapter 8 extends the analysis by conducting a regression analysis, where the dependent variable is Sukuk monthly return, and where the independent factors include a number of dummy variables representing conventional bond risk factors. The conventional bond risk factors used are:
It is hypothesised that lower maturity Sukuk have lower returns than longer maturity Sukuk, that floating rate Sukuk have lower returns than fixed rate Sukuk, that A rated Sukuk have lower returns than B rated Sukuk, and that B rated Sukuk have lower returns than unrated Sukuk.

The hypotheses follow directly from the conventional finance theory that expected return is positively related to risk. Since conventional finance theory is well-understood by participants in the Sukuk market, and since the similarities between Sukuk and conventional bonds are also well-understood by market participants, it is reasonable to expect that these conventional bond risk factors should be priced in the market, and related to market returns as hypothesised.

The results of the regressions, overall, support the hypothesis that conventional bond risk factors are positively and statistically significantly related to Sukuk returns.

**8.3.4 Structure risk**

In Chapter 4 it was argued that Sukuk structure is a significant factor in explaining Sukuk risk. According to the Sukuk Structure Risk Matrix of Table 1, Chapter 4, the relationship between Sukuk structure and risk is as follows:

- Equity based – Low risk
- Agency based – Medium risk
- Debt based or Asset – High risk

In addition to the four single structures, there are also Hybrid structures which contain elements of one or more single structures. For example, a Hybrid Sukuk may be a combination of *Murabaha* and *Wakala* contracts, i.e. a Sukuk with an Equity-Agency based structure. In general, the risk profile of complex Hybrid structures varies depending on the particular single structures and the way they are combined. Overall, Hybrid structures tend towards the medium to high risk end of the scale. Thus:

- Hybrid structure – Medium to High risk
It might now seem logical to hypothesise that Sukuk structure risk should be positively related to Sukuk return, in line with the conventional finance theory that high risk should go together with high expected return. However, the risk-expected return relationship of conventional finance presupposes that the market is efficient at pricing risk.

Throughout the thesis, it has been observed that it is only relatively recently that researchers have focused on investigating the connection between Sukuk structure and risk. For example, there is currently no general agreement even on what is the most appropriate risk classification scheme for Sukuk. Sukuk structure risk is therefore not currently well-understood. Hence, it appears to be unlikely that Sukuk structure risks are currently being correctly priced in the market. The expectation therefore, is that the regression results for the Sukuk structure risk factors will be mixed. The particular way in which the results will be mixed cannot be made precise. However, it is expected that the regression results will contain evidence that structure risks are being mispriced in the market.

The results of the regressions do indeed show mixed results for the Sukuk structure risk factors. These mixed results can be interpreted in a number of ways, which will be discussed after the results are presented.

To emphasise the still-developing state of the understanding of Sukuk structure by market practitioners, at the Euromoney London Islamic Finance and Investment Conference of 11th-12th February 2015 in London, a presentation was given on the Sukuk issuance experiences of Aramco, the largest oil producer in Saudi Arabia. Aramco’s first Sukuk issuance took 18 months, the lengthy delays being caused by the fact that the choice of Sukuk structure and its implementation in practice is by means an easy matter. Even after all these efforts, it was subsequently felt that not the most appropriate structure had been chosen. The second, and appropriately structured Sukuk issuance took 6 months.

The Aramco case study indicates that even major players in the Sukuk market are still getting to grips with understanding the risk implications of Sukuk structures. It is unlikely that risks that are not fully understood by major market participants are being correctly priced in the market.

To conclude this section, as far as Sukuk structures are concerned, the categories as explained are: Asset-based, debt based, equity-based, agency based and hybrid structure. According to the IdealRatings database, the most common structure used in the global Sukuk market is debt based and the lowest is agency based. The figure below shows the percentages of each structure exercised in the global Sukuk market.
This chapter uses a multifactor regression analysis to estimate Sukuk securities’ exposure to the risk factors presented in Section 8.2. Multiple regression analysis is a common technique used to assess the relative influence of several independent (predicting) variables when they are used to predict a dependent variable (Foster, Barkus and Yavorsky, 2006).

The regression equation is given as follows:

\[ Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + \ldots + b_{10}X_{10} \]

Where:

\( Y \): is the Sukuk monthly return

\( a \): is the Intercept

\( X_1 \) to \( X_{10} \) are dummy variables taking the value 1 if the Sukuk has the given characteristic and the value 0 if it does not.

\( b_1 \): is the Slope (Beta coefficient) for \( X_1 \)

\( X_1 \): Shariah structure type of Sukuk (Shariah Agency based), first independent variable that is explaining the variance in \( Y \). Thus, \( X_1 \) takes the value 1 if the Sukuk is Agency based and 0 if it is not Agency-based.

\( b_2 \): is the Slope (Beta coefficient) for \( X_2 \)
X2: Shariah structure type of Sukuk (Shariah Hybrid), second independent variable that is explaining the variance in Y. Thus, X2 takes the value 1 if the Sukuk is Hybrid and 0 if it is not Hybrid.

b3: is the Slope (Beta coefficient) for X3

X3: Shariah structure type of Sukuk (Shariah Asset based), third independent variable that is explaining the variance in Y. Thus, X3 takes the value 1 if the Sukuk is Asset based and 0 if it is not Asset based.

X4: Shariah structure type of Sukuk (Shariah Debt based compared), fourth independent variable that is explaining the variance in Y. Thus, X4 takes the value 1 if the Sukuk is Debt based and 0 if it is not Debt based.

b4: is the Slope (Beta coefficient) for X4

X5: Maturity of Sukuk (3-5 years to maturity), fifth independent variable that is explaining the variance in Y. Thus, X5 takes the value 1 if the Sukuk has 3-5 years left to maturity and 0 if it does not have 3-5 years left to maturity.

b5: is the Slope (Beta coefficient) for X5

X6: Maturity of Sukuk (5-7 years to maturity), sixth independent variable that is explaining the variance in Y. Thus, X6 takes the value 1 if the Sukuk has 5-7 years left to maturity and 0 if it does not have 5-7 years left to maturity.

b6: is the Slope (Beta coefficient) for X6

X7: Maturity of Sukuk (7-10+ years to maturity), seventh independent variable that is explaining the variance in Y. Thus, X7 takes the value 1 if the Sukuk has 7-10+ years left to maturity and 0 if it does not have 7-10+ years left to maturity.

b7: is the Slope (Beta coefficient) for X7

X8: Coupon rate (Fixed rate), eighth independent variable that is explaining the variance in Y. Thus, X8 takes the value 1 if the Sukuk has a fixed rate coupon and 0 if it does not have a fixed rate coupon.

b8: is the Slope (Beta coefficient) for X8

X9: Sukuk rating (BBB, BB, B), ninth independent variable that is explaining the variance in Y. Thus, X9 takes the value 1 if the Sukuk is BBB, BB or B rated and 0 if it is not BBB, BB or B rated.

b9: is the Slope (Beta coefficient) for X9

X10: Sukuk unrated, tenth independent variable that is explaining the variance in Y. Thus, X10 takes the value 1 if the Sukuk is unrated and 0 if it is rated.

b10: is the Slope (Beta coefficient) for X10

In addition, R² reflects the proportion of the variance in the values of the dependent variable Y explained by all the independent variables, the Xs in the equation in total.
In a linear regression with dummy variables, one risk factor out of each category of risk factors is not included in the regression. The factors left out in the above regression are: Equity-based (from the Sukuk structure risk category), 0-3 year to maturity (from the time to maturity risk category), floating rate coupon (from the fixed or floating coupon risk category), and AAA or AA or A rated (from the rating risk category).

The omitted factors are the reference group. Note that for each risk category it is the lowest risk factor that is omitted. Indeed:

1. *Shariah* Equity based structure (theoretically the safest Sukuk structure according to the theoretical risk analysis for Sukuk *Shariah* structures in Chapter 4).

2. Short maturity Sukuk with maturity between 0-3 years (the Sukuk with the fewest years to maturity are the safest).

3. Floating coupon rate Sukuk (Sukuk with floating rate coupons have lower interest rate exposure than fixed coupon Sukuk).

4. Sukuk with AAA, AA, or A rating (Highly rated Sukuk are safer than low rated or unrated Sukuk).

Thus, the Slope coefficients, the b1 to b10, measure how much extra return a risky Sukuk earns over and above the return on the safest reference Sukuk, i.e. an Equity-based Sukuk with 0-3 years to maturity with a floating rate coupon that is AAA, AA or A rated.

### 8.5 Statement of hypotheses

Now that the regression model has been presented, the hypotheses of Section 8.3 can be stated more precisely.

Firstly, it is expected that the conventional bond risk factors X5 to X10 should be positively related to returns, i.e. that the Slope coefficients b5 to b10 should be positive:

\[ H1: b5 > 0 \]

\[ H2: b6 > 0 \]

\[ H3: b7 > 0 \]

\[ H4: b8 > 0 \]
\( H5: b9 > 0 \)

\( H6: b10 > 0 \)

Within the Sukuk maturity category, the X5, X6 and X7, shorter maturity Sukuk should be safer than longer maturity Sukuk, i.e. the Slope coefficients for lower maturity Sukuk should be smaller than the Slope coefficients for longer maturity Sukuk. This is because the Slope coefficients measure how much extra return the Sukuk should earn over the reference Sukuk, the safest Sukuk, other risk factors being held equal, if it has a longer maturity. Thus:

\( H7: 0 < b5 < b6 < b7 \)

Within the BBB, BB or B rated Sukuk, and rated Sukuk should be safer than unrated Sukuk. Thus:

\( H8: 0 < b9 < b10 \)

When it comes to the *Shariah* structure risk factors it was argued in Section 8.3 that mixed results are expected, since it is not expected that the market is currently efficient at pricing Sukuk structure risk.

However, in empirical finance ‘mixed results are expected’ is not the standard way of stating a hypothesis. Thus, for the purpose of stating the hypotheses it is assumed that the market is efficient. Thus:

\( H9: b1 > 0 \)

\( H10: b2 > 0 \)

\( H11: b3 > 0 \)

\( H12: b4 > 0 \)

Within the Sukuk structure risk category, the structures have been ranked from safest to riskiest, e.g. X1 (Agency based) is safer than X2 (Hybrid), and both are safer than X3 (Asset based), which has the same risk as X4 (Debt based). Thus, assuming market efficiency:

\( H13: 0 < b1 < b2 < b3 = b4 \)

While market efficiency is implicitly assumed in stating the hypotheses on Sukuk structure, it has been argued in the thesis that the Sukuk market is unlikely to be efficient in pricing Sukuk structure risks. Hence, the author’s expectation is that the hypotheses \( H9, H10, H11, H12 \) and \( H13 \) will, overall, be rejected.
8.6 Data

The data of the research were downloaded from the Idealratings data engine. To the best of the author’s knowledge, it is the best available database covering the Sukuk global market.

The total number of Sukuk on the Idealratings database is 1806 as at 13 August 2016. However, the Idealratings subscription service provides only two years of historical data. Due to the relationship between the University of Portsmouth and IdealRatings, the author obtained access to the data on the Idealratings back data files. The period covered is from 31st October 2012 to 02nd September 2016, 47 months in total.

One limitation of the research is that most Sukuk are issued in private placements, with the majority of investors holding the Sukuk until the redemption date. In some, but not all cases this is caused by the fact that Shariah restrictions on some types of structure, such as debt based structures, do not permit trading in the Sukuk. From the Idealratings database it is seen that debt based Sukuk make up 37% of the global Sukuk market, representing the largest segment of current Sukuk structure types. In other cases, tradable Sukuk are held to maturity by choice. For example, Takaful (Islamic insurance) companies prefer to hold to maturity as part of their asset and liability management.

The Sukuk in the sample are denominated in US dollars. The information required to compute coupon returns for Sukuk denominated in Malaysian ringgit is not available.

One limitation of the data set is the relatively short time series (47 months). This limitation can only be overcome by the passing of time. It appears that sufficiently detailed and complete data on Sukuk have not been systematically collected earlier to make it possible to significantly extend the time series further back in time.

After excluding Sukuk for which prices or other information required to calculate returns is unavailable, the complete data set is as described in the table below.
Table 35: Sukuk data description sample from IdealRatings

<table>
<thead>
<tr>
<th>Total Sukuk</th>
<th>222</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset class</td>
<td></td>
</tr>
<tr>
<td>Asset Back</td>
<td>0</td>
</tr>
<tr>
<td>Asset Based</td>
<td>222</td>
</tr>
<tr>
<td>Sukuk Price</td>
<td></td>
</tr>
<tr>
<td>Sukuk has prices</td>
<td>113</td>
</tr>
<tr>
<td>Sukuk has no prices</td>
<td>109</td>
</tr>
<tr>
<td>Maturity type</td>
<td></td>
</tr>
<tr>
<td>0-3 Yrs</td>
<td>75</td>
</tr>
<tr>
<td>3-5 Yrs</td>
<td>18</td>
</tr>
<tr>
<td>5-7 Yrs</td>
<td>10</td>
</tr>
<tr>
<td>7-10+ Yrs</td>
<td>16</td>
</tr>
<tr>
<td>Coupon rate</td>
<td></td>
</tr>
<tr>
<td>Fixed</td>
<td>153</td>
</tr>
<tr>
<td>Floating</td>
<td>69</td>
</tr>
<tr>
<td>Shariah structure types</td>
<td></td>
</tr>
<tr>
<td>Asset Based (Ijarah)</td>
<td>37</td>
</tr>
<tr>
<td>Debt Based (Murabaha, Istasna’a and Twaraq)</td>
<td>4</td>
</tr>
<tr>
<td>Equity based (Mushararkah and Mudaraba)</td>
<td>16</td>
</tr>
<tr>
<td>Agency Based (Wakalah)</td>
<td>27</td>
</tr>
<tr>
<td>Hybrid based</td>
<td>29</td>
</tr>
</tbody>
</table>

Source: IdealRatings, August 2016

The Sukuk sample consists Sukuk certificates from the global market and the Sukuk issuer’s mixture of business sectors. The figure below shows further descriptive details about the Sukuk issuers of the data sample of Sukuk securities.
8.7 Sukuk monthly return calculation

Monthly returns are computed for the period of November 2012 to September 2016.

The price is computed as the mid-point of the bid and ask price. In cases where end of month prices are not available, the end of month price is computed by linear interpolation, using the ipolate function in SATA software. Using the interpolation approach is commonly used for constructing indices, according to Meijering (2002).

The interpolation formula is applied as follows:

The value $Y$ at $r$ is found by finding the closest points $(r_0, y_0)$ and $(r_1, y_1)$, such that $r_0 < r$ and $r_1 > r$ where $y_0$ and $y_1$ are observed, and calculating as:

$$y = \frac{y_1 - y_0}{r_1 - r_0} + (r - r_0) + y_0$$

If ipolate is specified and if $(x_0, y_0)$ and $(x_1, y_1)$ cannot be found on both sides of $x$, the two closest points on the same side of $x$ are found, and the same formula is applied. If there are multiple observations with the same value for $x_0$, then $y_0$ is taken as the average of the corresponding $y$ values for those observations. $(x_1, y_1)$ is handled in the same way.
In the Sukuk markets under study there is no trading on Sundays. Consequently, Sundays were omitted from the data, and the interpolation used the preceding Saturday price. If no Saturday price existed, the most recent previous price is used.

The monthly Sukuk return consists of the capital return resulting from the monthly price changes together with the coupon payments. Each Sukuk certificate has different dates for issuance and redemption. Dates for the coupon payments are computed by working backwards from the redemption date.

For fixed coupon Sukuk the coupon payment is specified in the Sukuk contract as a fixed percentage of the face value. For floating rate Sukuk the coupon payment is specified in terms of a benchmark index, such as LIBOR.

Given the end of month prices and coupon payments the Sukuk monthly return can then be calculated by the same formula used for conventional bonds.

### 8.8 Presentation and discussion of the regression results

For each of the 47 months, a regression was run on all of the Sukuk in the sample that existed during that month, a total of 47 regressions. For each \( k = 1 \) to 10, the average of the 47 regressions for the Slope coefficient \( b_k \) was obtained. The results are displayed in Table 36.

*Table 36: Descriptive statistics for Sukuk returns*

<table>
<thead>
<tr>
<th>Sukuk return</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shariah Agency Based</td>
<td>-.0165794</td>
<td>.0160068</td>
<td>-.000139804</td>
<td>.0073615776</td>
</tr>
<tr>
<td>Shariah Hybrid Based</td>
<td>-.0161897</td>
<td>.0247517</td>
<td>-.000382925</td>
<td>.0085168962</td>
</tr>
<tr>
<td>Shariah Asset Based</td>
<td>-.0799027</td>
<td>.0224090</td>
<td>-.001479231</td>
<td>.0134315118</td>
</tr>
<tr>
<td>Shariah Debt Based</td>
<td>-.0262888</td>
<td>.0344593</td>
<td>-.00171953</td>
<td>.0076405057</td>
</tr>
<tr>
<td>Maturity 3-5 Yrs</td>
<td>-.0216136</td>
<td>.0341747</td>
<td>.001873511</td>
<td>.0086378262</td>
</tr>
<tr>
<td>Maturity 5-7 Yrs</td>
<td>-.0300833</td>
<td>.0814635</td>
<td>.001526784</td>
<td>.0154090524</td>
</tr>
<tr>
<td>Maturity 7-10+ Yrs</td>
<td>-.0406654</td>
<td>.1136022</td>
<td>.002964195</td>
<td>.0219707025</td>
</tr>
<tr>
<td>Fixed rate</td>
<td>-.0181055</td>
<td>.0278023</td>
<td>.002016312</td>
<td>.0074930279</td>
</tr>
<tr>
<td>Rating BBB, BB or B</td>
<td>-.0132313</td>
<td>.0265944</td>
<td>.001533691</td>
<td>.0065426569</td>
</tr>
<tr>
<td>Unrated</td>
<td>-.0264969</td>
<td>.0236339</td>
<td>.000986664</td>
<td>.0085972719</td>
</tr>
</tbody>
</table>

The important column in Table 36 is the column of mean (average) values. As hypothesised, the averages of all the Slope coefficients for all of the conventional bond risk factors are positive. That is, the mean values for Maturity 3-5, Maturity 5-7, Maturity 7-10+, Fixed rate, Rating BBB, BB or B and Unrated are all positive.
Thus, the results support $H1: b5 > 0$, $H2: b6 > 0$, $H3: b7 > 0$, $H4: b8 > 0$, $H5: b9 > 0$ and $H6: b10 > 0$.

The results for the stronger hypotheses $H7$ and $H8$ are mixed.

$H7: 0 < b5 < b6 < b7$

As can be seen from Table 2, $b5 (= 0.001873511)$ and $b6 (= 0.001526784)$ are both less than $b7 (= 0.002964195)$, as hypothesised (7-10+ Maturity Sukuk tend to have higher returns than both the 3-5 year Maturity Sukuk and the 5-7 year Maturity Sukuk). However, contrary to hypothesis $b6$ is very slightly greater than $b7$, though not statistically significantly so, i.e. the safer 3-5 year Maturity Sukuk tend to have very slightly higher returns than the riskier 5-7 year Maturity Sukuk.

$H8: 0 < b9 < b10$

$H8$ is corroborated by the test, as $b9 (= 0.0065426569)$ is indeed smaller than $b10 (= 0.0085972719)$. Thus, the safer BBB, BB and B rated Sukuk tend to have lower returns than the riskier unrated Sukuk, as stated by $H8$.

Thus, overall the results corroborate the hypotheses on the conventional bond risk factors, namely, that Sukuk markets are efficient at pricing conventional bond risks.

When it comes to the hypotheses on the Sukuk structure risk factors, all of the hypotheses are rejected. $H9: b1 > 0$, $H10: b2 > 0$, $H11: b3 > 0$ and $H12: b4 > 0$ are all rejected, since the signs of the Sukuk structure risk factor Slope coefficients are all negative. Thus, returns on the safest reference Sukuk, the equity based Sukuk, tend to be higher than the returns on Sukuk with theoretically riskier structures.

Also, $H13: 0 < b1 < b2 < b3 = b4$ are rejected, not only because all the Slope coefficients are less than 0, but also because the ordering of the size of the coefficients are not as hypothesised.

For example, $b1 (= -0.000139804)$ the Slope coefficient of the Agency based structure is smaller in absolute value than all the other Shariah structure Slope coefficients, $b2$, $b3$ and $b4$. Returns on the safer Agency based structures tend to be higher than on the relatively riskier Hybrid, Asset based and Debt based structures.

The ordering is correct only for the Hybrid and Debt based structures. $b2 (= -0.000382925)$, the Slope coefficient of the Hybrid structure is higher in absolute value than $b4 (= -0.000171953)$, the Slope coefficient
of the theoretically riskier Debt based structure. Returns on the safer Hybrid structures tend to be lower than returns on the relatively riskier Debt based structures, as market efficiency suggests.

Overall, the results for the hypotheses on Sukuk structure risk factors are mixed, with most of the hypotheses being rejected. Note however, that this is what was expected. The hypotheses are formed under the assumption that the Sukuk market is efficient at pricing Sukuk structure risks. This thesis has argued that the Sukuk market is unlikely to be efficient in this respect. Thus, the expected mixed results are in line with the claim that the still developing Sukuk markets are currently failing to efficiently price Shariah structure risks.

The results corroborate the work of previous researchers who claim that the Sukuk securitisation mechanism is designed to replicate conventional bonds, and thus that there are strong similarities between Sukuk and conventional bonds, as stated by, for example Wilson (2004), Miller et. al, (2007). Tariq (2015) commented that, while Sukuk are meant to be different from conventional bonds in theory, in practice most Sukuk prospectuses are drafted by lawyers copying conventional bond structures. He claimed that in the Sukuk market Sukuk with a value of over US$600 billion have been issued with the aim of creating Islamic securitizations equivalent to conventional bonds.

Other, more recent studies, such as Rebredo and Naifar (2017) have focused on those aspects in which Sukuk differ from conventional bonds, though noting that, due to the fact that Sukuk markets are still under-developed, Sukuk prices are dependent on US conventional bond prices and tend to co-move with them.

In recent years researchers have discussed Sukuk structure as an important distinguishing feature of Sukuk compared to conventional bonds. Recalling the case of the Aramco Sukuk issues discussed previously in Section 8.3.4, the implication is that issuers are coming to realize the fundamental importance of structure risk on Sukuk securitization. Thus, the finding of this study that the Sukuk market is mis-pricing Sukuk structure risks has implications for Sukuk market players, including credit rating agencies, issuers, market regulators and investors. While conventional bond risk factors are currently efficiently priced, this research has found evidence of mis-pricing on those factors that make Sukuk different from conventional bonds. This confirms the finding of Ahmed, Islam and Ariffin (2015) that it is necessary to reconsider the method of structuring Sukuk and in marketing Sukuk as a different class from conventional bonds.
### Table 37: Correlation between Sukuk return and risk factor variables

<table>
<thead>
<tr>
<th></th>
<th>Shariah Asset based</th>
<th>Shariah Debt Based</th>
<th>Shariah Agency Based</th>
<th>Shariah Hybrid Based</th>
<th>Maturity 3.5Yrs</th>
<th>Maturity 5.7Yrs</th>
<th>Maturity 7.10Yrs</th>
<th>Fixed rate</th>
<th>Rating BBB.BB .B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shariah Asset based</strong></td>
<td>Pearson Correlation</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shariah Debt Based</strong></td>
<td>Pearson Correlation</td>
<td>.048</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.750</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shariah Agency Based</strong></td>
<td>Pearson Correlation</td>
<td>.346*</td>
<td>.064</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.017</td>
<td>.668</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shariah Hybrid Based</strong></td>
<td>Pearson Correlation</td>
<td>.313*</td>
<td>.051</td>
<td>.597**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.032</td>
<td>.731</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maturity 3-5 Yrs</strong></td>
<td>Pearson Correlation</td>
<td>-.692**</td>
<td>-.019</td>
<td>-.159</td>
<td>-.524**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.900</td>
<td>.285</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maturity 5-7 Yrs</strong></td>
<td>Pearson Correlation</td>
<td>-.804**</td>
<td>-.016</td>
<td>-.084</td>
<td>-.214</td>
<td>.737**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.916</td>
<td>.573</td>
<td>.148</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maturity 7-10+ Yrs</strong></td>
<td>Pearson Correlation</td>
<td>-.753*</td>
<td>-.003</td>
<td>-.172</td>
<td>-.311</td>
<td>.829**</td>
<td>.835**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.986</td>
<td>.247</td>
<td>.034</td>
<td>.000</td>
<td>.000</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Fixed rate</strong></td>
<td>Pearson Correlation</td>
<td>-.009</td>
<td>.107</td>
<td>-.049</td>
<td>.039</td>
<td>.084</td>
<td>-.056</td>
<td>-.041</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.953</td>
<td>.474</td>
<td>.742</td>
<td>.795</td>
<td>.573</td>
<td>.706</td>
<td>.784</td>
<td></td>
</tr>
<tr>
<td><strong>Rating BBB, BB or B</strong></td>
<td>Pearson Correlation</td>
<td>-.468**</td>
<td>.164</td>
<td>-.249</td>
<td>.163</td>
<td>.064</td>
<td>.401**</td>
<td>.332*</td>
<td>.306*</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.271</td>
<td>.091</td>
<td>.275</td>
<td>.671</td>
<td>.005</td>
<td>.023</td>
<td>.037</td>
</tr>
<tr>
<td><strong>Unrated</strong></td>
<td>Pearson Correlation</td>
<td>-.278</td>
<td>.092</td>
<td>.107</td>
<td>.129</td>
<td>.219</td>
<td>.310*</td>
<td>.146</td>
<td>.709**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.058</td>
<td>.539</td>
<td>.475</td>
<td>.389</td>
<td>.139</td>
<td>.034</td>
<td>.327</td>
<td>.000</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).
It is observable that there is high collinearity between some of the factors. However, these colinearities hold between risk factors in different and unrelated categories. Further, overall the table indicates only a moderate level of multicollinearity and which is not problematic.

Table 38 presents the tests of statistical significance of the key regression results presented in Table 36.

Table 38: One Sample Test for Coefficients beta overall observations of Sukuk Return and Related Independents of risk factors

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>Df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shariah Agency Based</td>
<td>0.133</td>
<td>46</td>
<td>0.447</td>
<td>-.0001398036</td>
<td>-.002301244 to .002021637</td>
</tr>
<tr>
<td>Shariah Hybrid</td>
<td>0.315</td>
<td>46</td>
<td>0.377</td>
<td>-.0003829255</td>
<td>-.002883580 to .002117729</td>
</tr>
<tr>
<td>Shariah Asset Based</td>
<td>0.771</td>
<td>46</td>
<td>0.222</td>
<td>-.0014792313</td>
<td>-.005422871 to .002464408</td>
</tr>
<tr>
<td>Shariah Debt Based</td>
<td>0.158</td>
<td>46</td>
<td>0.438</td>
<td>-.0001719531</td>
<td>-.002415290 to .002071383</td>
</tr>
<tr>
<td>Maturity 3-5 Yrs</td>
<td>1.519</td>
<td>46</td>
<td>0.068</td>
<td>.0018735112</td>
<td>-.000662650 to .004409672</td>
</tr>
<tr>
<td>Maturity 5-7 Yrs</td>
<td>0.694</td>
<td>46</td>
<td>0.246</td>
<td>.0015267840</td>
<td>-.002997483 to .006051051</td>
</tr>
<tr>
<td>Maturity 7-10 Yrs</td>
<td>0.945</td>
<td>46</td>
<td>0.175</td>
<td>.0029641945</td>
<td>-.003486645 to .009415034</td>
</tr>
<tr>
<td>Fixed rate</td>
<td>1.885</td>
<td>46</td>
<td>0.033</td>
<td>.0020163121</td>
<td>-.000183723 to .004216347</td>
</tr>
<tr>
<td>Rating BBB.BB.B</td>
<td>1.642</td>
<td>46</td>
<td>0.054</td>
<td>.0015336912</td>
<td>-.000387305 to .003454687</td>
</tr>
<tr>
<td>Unrated</td>
<td>0.804</td>
<td>46</td>
<td>0.213</td>
<td>.0009866640</td>
<td>-.001537590 to .003510918</td>
</tr>
</tbody>
</table>

Table 39: Average of Regression Statistics for Coefficients beta overall observations of Sukuk Returns and Its Related Independents of risk factors

<table>
<thead>
<tr>
<th></th>
<th>Multiple R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Standard Error</th>
<th>Observations</th>
<th>Intercept</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.50414</td>
<td>0.27364</td>
<td>0.11015</td>
<td>0.01568</td>
<td>58.17021</td>
<td>-0.00053</td>
</tr>
</tbody>
</table>

Regression analysis was used to test hypotheses on the relationship between Sukuk return and risk factor variables. The regression results from the value of R and R square indicate that the risk factor variables in total explain 27% to 50% of the variation in Sukuk return.
As noted, the hypotheses on Shariah Sukuk structure risks were generally rejected. This is in line with the expectation that Sukuk markets are not currently pricing structure risks efficiently. The results on the structure risks are mixed, in the sense that none of the Shariah structure risk factors are statistically significant.

The key column of Table 38 is column 3 giving the 2-tailed p values. The lowest p value is 0.222 for the Asset based structure. Since the hypotheses are that the Slope coefficients are greater than 0, and not merely that the Slope coefficients are different from 0, it can be argued that 1-tailed p values are more appropriate to consider. However, in that case it is still true that none of the Slope coefficients for the Shariah structure risk factors are significant at the 10% level.

The Slope coefficients for the conventional bond risk factors are generally statistically significant. If 1-tailed p values are used all except two of the conventional bond risk factors are significant at the 10% level, the exceptions being 5-7 year Maturity (12.3%) and Unrated (10.65%).

The results on statistical significance further support the claim that the Sukuk markets treat Sukuk similarly to conventional bonds, and are efficient at pricing conventional bond factors that impact on Sukuk risk. These results also support the claim of that Shariah structure risk factors are not currently well-understood and that Sukuk markets are not efficiently pricing these risks.

This study tests the risk and return of Sukuk according to structure risk factors. It is an investigation of the semi-strong efficiency of the Sukuk market (EMH), testing how publicly available on Sukuk structure risks impacts on Sukuk market returns. The hypotheses tested is that high structure risks are associated with high returns. The empirical results show that there is no significant relationship between Sukuk structure risk factors and realised Sukuk returns, however that the theoretical relationship between risk and return does hold for conventional bond risk factors. The Sukuk structure risk factors are summarised in the Sukuk structures risk matrix presented in chapter 4. The positive results on the pricing of conventional bond risk factors support the conclusions of those researchers who stress the similarities between conventional bonds and Sukuk, as in the research by Wilson (2004), Miller et. al. (2007), Tariq (2015) and Reboredo and Naifar (2017). The empirical results indicate that all Sukuk structures types have been treated the same by market users. Market participants have not applied the differences between Sukuk structures in accordance with the research of Sukuk theorists and AAOIFI Sukuk Shariah standard no. (17), which emphasise that Sukuk are different from conventional bonds and that the differences arise from the different Sukuk structures. This indicates that the Sukuk market is not semi-strong efficient in discounting publicly available information on Sukuk structure risks. The efficient markets’ hypothesis (EMH) has been presented as the best description of price movements in securities markets (Clarke, Jandik and Mandelker, 2001). Clarke et al., 2001 state that financial researchers have found empirical
evidence that is overwhelmingly consistent with the semi-strong form of the EMH. The empirical results reported here however, appear to show that the Sukuk market is not semi-strong efficient at incorporating public information on structure risk factors in Sukuk market prices.

On the other hand, it could be argued that the pricing model of Sukuk structure risk is wrong or that it has not been tested correctly. However, the response to that is that the Sukuk structure risk classification is built based on the literature and applied value judgments by the author. These judgements may change when the nature of Shariah classifications of structure types undergoes further investigations and developments by researchers, market participants and Shariah scholars.

The conclusions are qualified by the observation that the data set is small and covers a period of 47 months only. While there are over 1,800 Sukuk issued on the Idealratings database, only around 10% of them trade in the secondary market. Sukuk markets are still thin and illiquid. Further, there is no data going back further than 4 years. Sukuk are a recent development and data on Sukuk has been systematically captured, recorded, stored and structured only recently. Nevertheless, sufficient data is now becoming available that will make possible a considerable expansion in empirical research in Sukuk. The situation will improve as Sukuk markets continue to develop.

The analysis of results interpreting the fourth and fifth research objectives contributes to a better understanding of Sukuk risks. The first and second questions in this study sought to determine which risk factors are relevant to Sukuk pricing. The results indicate that structure risk factors have no power to explain Sukuk market returns. This implies that there is a gap between theory, which implies a positive relationship between Sukuk structure risks and Sukuk realised returns, and practice, which reveals no such relationship. Since information on Sukuk structures is a subset of publicly available information, the main conclusion of the study is that the Sukuk market is not efficient at pricing structure risks, in the sense of the semi-strong form of the Efficient Market Hypothesis. Sukuk market does not take into account the public information provided by Sukuk theorists and Sukuk scholars on structure risk. The results are consistent with those of other studies which suggest that Sukuk pricing evaluation is like the conventional bond pricing evaluation mechanism.

8.9 Conclusion

The findings from this study make several contributions to the current literature. First, Sukuk market do not price Sukuk structure risks correctly. The findings observed in this study mirror those of previous studies that have examined the effect of treating Sukuk as being the same as conventional bonds. This has been explained by the limitations of Sukuk expertise combined with high demand for Sukuk issuances. This pushes Sukuk
underwriters to mimic conventional bonds in Sukuk prospectuses, leading Sukuk traders to use only conventional bond risk measures in making investment decisions on Sukuk. The neglect of Sukuk structure risk factors, which previous studies have demonstrated means that market participants are not taking into account important risk factors in their decision-making. This implies Sukuk practitioners need to consider reviewing the risk analysis of Sukuk to accommodate other risk factors that are applicable to Sukuk, such as structure risk. A better understanding of Sukuk structure risks will also assist in designing securitisation structures that meet the needs of issuers, investors, and other stakeholders who can benefit from the existence of deep, liquid, well-regulated and efficiently priced markets for Islamic financial instruments.

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CHAPTER 9

CONCLUSION

9.1 Introduction

Admittedly, the research journey on Sukuk is ongoing. This research builds on the literature to bridge certain research gaps in the analysis of Sukuk risk. In particular, the research is a critical evaluation and investigation of those risks arising from differences in Sukuk structures. The purpose of this concluding chapter is to review the research aims and research questions, and to discuss the main implications of the research findings. This chapter also includes an overview of the limitations of this research and the primary recommendations for future research.

9.2 Achievement of research aims and questions

The present study was designed to determine the effect of Sukuk structure risk factors on Sukuk returns.

The Islamic financial system has expanded rapidly over recent decades. This expansion has engaged the attention of significant numbers of academic researchers and practitioners, opening the door to the development of new innovative investment instruments to meet the needs of issuers and investors. The Islamic financial system is continually evaluated, keeping academics, practitioners and other stakeholders informed and updated on the developments and progress achieved in Islamic finance. These developments are covered in this study, and key issues concerning Sukuk structures are brought up to date, especially those concerning the impact of Sukuk structure on risk and return.

The theory of Islamic finance, and its features and specifications were given in Chapter 2, introducing the main research issues of interest and distinguishing the research gaps. It has been noted in the literature that conventional bonds are the main competitor to Sukuk. Hence, many previous studies have been conducted examining Sukuk compared with conventional bonds. This study extends this research, in finding how Sukuk are differentiated from their conventional counterparts.

Sukuk are different from conventional bonds from various aspects, including both theoretical and practical issues. In theory, Sukuk are different from conventional bonds in that Sukuk are designed to be based on trade, while conventional bonds are designed to be based on debt. This study confirms that Sukuk are indeed different
from conventional bonds in certain respects. Sukuk are more flexible than conventional bonds, in that there is great scope in Sukuk for innovative structures to meet the needs of issuers and investors.

Saudi Arabia and Malaysia have hosted the biggest applications of Sukuk in their capital markets. Both markets are considered to be hubs of Sukuk investment. The Saudi Arabian market has its own interpretation of Sukuk as a Shariah-compliant financial instrument. This leads to differences in the treatment of Sukuk in the Saudi Arabian capital market compared with Malaysia. The research address these differences in interpretations, and how this impacts on Sukuk securitisation and performance.

One of the most significant findings to emerge from this study is that Sukuk risks can be classified in a number of different ways. It is argued that Sukuk structure risk, a risk that has hitherto not been discussed much in the literature, is one of the main risk factors that should be taken into account when evaluating Sukuk risk. Chapter four presents this discussion, and concludes with the construction of a new Sukuk risk matrix that evaluates the impact of Sukuk structure on risk.

Returning to the questions posed at the beginning of this study, it is now possible to state that theoretically, the key risk factors in pricing Sukuk are the legal structure, Shariah structure, maturity, the coupon (fixed or floating) and the Sukuk rating. It can be seen that, from the standpoint of theory, Sukuk structure should have a significant impact on Sukuk pricing. However, in practice, the empirical investigation of the Sukuk market shows that the Sukuk market is not efficient in pricing Sukuk structure risks. Indeed, Sukuk Shariah structure risks have no power to explain observed Sukuk returns. Multiple regression analysis reveals that there, after controlling for other factors, there is no statistically significant relationship between Sukuk return and Shariah structure type. These results confirm the views of some authors that market participants do not distinguish Sukuk from conventional bonds.

The other major finding of the empirical investigation concerns a comparative analysis of Sukuk indices and conventional bond indices. It is concluded that for broad aggregate indices covering the entire 2005-2016 time period, there is no big difference in the risk and return profile of Sukuk indices and their counterpart conventional bond indices. Furthermore, multiple regression analysis reveals that the relationship of price movements between these broad aggregate Sukuk and conventional bond indices was positive and statistically significant. These results add further support for the claim that the market does not distinguish between Sukuk and conventional bonds.
In contrast, for comparable narrow Sukuk and conventional bond indices, and for sub-periods of the 2005-2016 full period, the results are mixed and difficult to interpret.

The most critical finding to emerge from this study is that, from the theoretical standpoint, Sukuk structure risk should be a critical factor in the pricing of Sukuk securities. The study of Sukuk structure is a comparatively recent development in the research literature, and it has not yet been sufficiently addressed. Because of this, Sukuk issuers and investors are not sufficiently aware of the impact of Sukuk structure on risk. It is therefore not expected that these structure risks are priced in the market and shows that the Sukuk market is not semi-strong efficient. This expectation is confirmed by the empirical results.

9.3 Research contributions

This research provides a range of contributions to the existing knowledge base for Islamic finance in the field of Sukuk. The key contributions are discussed below:

9.3.1 First area of contribution

The systematic review of the literature is a comprehensive and up to date review of this topic, identifying and evaluating more studies than previous reviews. The literature review covers what is currently known about Sukuk, drawing on the contributions of academic researchers and on studies of market practices in the Sukuk market in professional reports. In particular, previous studies on Sukuk risks and Sukuk structure are incorporated into the construction of the Sukuk risk matrix model developed and used in this study.

Moreover, the literature review systematically discusses the similarities and differences between Sukuk as an independent class of investment instrument and its counterpart conventional bonds.

The contribution in this area has been presented in a conference research paper, and a paper published in a peer reviewed academic journal. These are:


9.3.2 The second area of contribution

The empirical research uses a unique proprietary Sukuk data set provided from the back data files underlying the Idealratings subscription service. This data set is used to test hypotheses regarding the pricing of structure risk, and other risks, in the Sukuk market.

The main reason for the lack of empirical research in Sukuk, and in Islamic finance generally, has been the lack of empirical data. The advantage of this research is that it is conducted on the data on Sukuk that most Sukuk practitioners use for their investment decisions. This implies the validity of the data in the Sukuk market. For example, this is the data used by The Nasdaq Dubai index to construct a new Sukuk index, “The Nasdaq Dubai IdealRatings Global Sukuk Index” as illustrated in Chapter 6. According to the best of my knowledge, this study is a pioneer empirical work conducted using data from the Idealratings database.

9.3.3 The third area of contribution

The present study makes noteworthy contributions to Sukuk knowledge by introducing a new critical risk factor in Sukuk, Sukuk legal and Shariah structure type risks, leading to a better understating of Sukuk risk.

This work contributes to our existing knowledge Sukuk pricing and market efficiency by providing empirical evidence based on comparisons of the available Sukuk and bond indices. This approach is updated and refined in this study. In addition, the study investigates Sukuk structure risk as a risk factor. Hypotheses concerning Sukuk structure risk, in combination with several other risk factors, are empirically tested using the uniquely available Idealratings data set referred to above. This research serves as a base for future studies and assists Sukuk professionals in evaluating and pricing Sukuk risks. This study is one of the early detailed academic studies on the evaluation of risks arising from Sukuk structures.

In addition, the contribution of this area has been published in:

9.4 Implications of research findings

This study contributes to the work on the creation of evidence-based risk management techniques in Islamic finance and to the expansion of ethical financial management.

The results on the informational inefficiency of Sukuk markets have significant implications for Sukuk decision makers such as issuers, investors, governments, regulators, scholars and researchers. The Sukuk issuers including governments should enhance structure risk in their Sukuk issuance process and investors should extend the investment analysis to take into account the differences between risk profiles among Sukuk structures. Government bodies require more adoption of Sukuk in the debt markets. Structure risk should help to facilitate this adoption as the main element of differentiating Sukuk from conventional bonds. The results add value to Sukuk regulators to update market standards and Shariah standards to accommodate structure risk. Scholars and researchers are the main pillars of developments of the Sukuk market journey by their contributions and investigations. Structure risk of Sukuk should be considered by scholars and researchers in their research for further development.

Taken together, these results of this research suggest that Sukuk users importantly need to take in account structure risks factor as part of the investment decision process. This is driven by the fact that Sukuk are Shariah compliant instruments, and are influenced by the Shariah parameters underlying Sukuk structures.

9.5 Research reflections, limitations and challenges

Data is the main platform of empirical research. Data is always limited, and in the context of Sukuk are more limited due the limited development of the global Sukuk market. Growth in the market creates more data for research. Although this thesis has the advantage of using a unique data set from the Sukuk market via the IdealRatings Sukuk data engine, which, although the best data set currently available, is still relatively small and covers only a relatively short time period. Despite this, the data is sufficient to critically test a number of core hypotheses on Sukuk structure risk.

9.6 Recommendations and future research

This research has thrown up many questions in need of further investigation. Also, it offers some recommendations that may be found to be usefully applicable in practice. In the view of the researcher, these recommendations may help Islamic financial institutions to give more attention to their practices concerning finance regulation and supervision.
The most important factor that should be considered by experts in the field is filling the gaps of the Sukuk industry in order to be independent of the conventional bond industry. It has been noticeable from this study that Sukuk are dependent on conventional bonds, such as using the same credit agencies, financial techniques, and market scope. In other words, the Sukuk should create its own parameters to show an independence rather than use or copy from the conventional bonds then customise to fit with the *Shariah* guidelines. This might direct the contributions from the scholars, researchers, and Islamic bankers to focus on this target. This information can be used to develop targeted interventions aimed to update Sukuk standards issued by market regulators such as AAOIFI and IFSB, to mitigate the risks arising from *Shariah* non-compliance in Sukuk securitisations.

Another possible area of future research would be to investigate Sukuk pricing models, as it is seen in the study that the Sukuk market does not efficiently price Sukuk risks. More investigation is required on how Sukuk pricing models are different from conventional pricing models. This aspect of research will help to improve Sukuk market efficiency and independence.

An implication of these findings is that Sukuk structure risk should be considered by Sukuk education programmers, whether in higher education programmes or in professional training courses. In fact, the Sukuk industry needs to expand its footprint to accommodate more expertise and educate more market players. Increasing the knowledge base will assist in better Sukuk investment decisions and market practices.

In summary, Sukuk risk analysis is a new line of research distinguishing Sukuk from conventional bonds, as well as helping to avoid failure or default in the market. Sukuk users will protect their investment by knowing the critical risk exposures of Sukuk and how to mitigate those risks via Sukuk structure risk analysis techniques.

### 9.7 Conclusion

In this chapter, the main contributions, limitations, and recommendations for future work of this study are highlighted. It is hoped that this study may contribute to the development of Islamic financial markets, and to the Sukuk market achieving its full potential as a *Shariah* compliant financing instrument.

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(B)


(C)


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(F)


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Arabic:

Appendices

1. Appendix A: Global Estimated Muslim Populations
2. Appendix B: Saudi Arabian Sukuk Market
3. Appendix C: Malaysian Sukuk Market
4. Appendix D: Illustration of Shariah law
5. Appendix E: Summary of recent literature on Sukuk
6. Appendix F: (related to chapter 7): Graphs and tables of regression analysis between Sukuk indices and conventional bonds indices
8. Appendix H: Form UPR16 Research Ethics Review Checklist
9. Appendix I: Comparison between Sukuk, Conventional Bonds and Shares.
Appendix A

Global Estimated Muslim Populations in 2010

Source: Ernst & Young, the Islamic funds & investment Report, 2011
Appendix B:

Saudi Arabian Sukuk Market

Introduction

The aim of this chapter is to give sufficient background to the Saudi Arabian market to support the discussion in the rest of the thesis. Some further background material is contained in the Appendices.

The importance of Saudi Arabia for Sukuk lies in the fact that Saudi Arabia has the largest financial market in the GCC and is becoming the hub of the Islamic finance industry. This is influenced by the flourishing oil trade in Saudi Arabia which makes the country one of the wealthiest in the world.

This chapter gives an overview of the Kingdom of Saudi Arabia, and discusses the Saudi Arabian financial system and capital markets, the role of Islamic finance in Saudi Arabia, the Saudi Arabian Sukuk market, and the relationship between Sukuk market performance and oil market trends within the context of Saudi Arabia. Some recent and current developments and challenges for the Saudi Arabian Sukuk market are discussed.

Overview of the Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia is the largest free market economy in the Middle East and North Africa, holding 25% share of the total Arab GDP. The Kingdom’s geographic location provides easy access to export markets in Europe, Asia and Africa. It has a continuously expanding domestic market, with annual population growth of 3.5%, which is adding to a young and consuming population with strong buying power. The investment environment in the Kingdom reflects traditions of liberal, open market, private enterprise policies and its new Foreign Investment Law allows 100% foreign ownership of projects and real estate. The Kingdom has an impressive record of political and economic stability and has a modern world-class infrastructure.

Saudi Arabia has the biggest oil reserves in the world (25%). The Kingdom is endowed with other natural resources including a wide range of industrial raw materials and minerals such as bauxite, limestone, gypsum, and phosphate and iron ore. There are no restrictions on foreign exchange or repatriation of capital and profits. It has a very stable currency, has no foreign exchange curbs, and companies are allowed 100% repatriation of profits. The Kingdom is among the few countries in the world that allow companies to carry forward losses indefinitely, effectively relieving businesses of the tax burden until they become profitable. The Kingdom does not impose personal income taxes. Labour costs in almost all spheres are low. Additional incentives offered to investors include exemption of export goods from storage fees for 10 days, annual land rent in industrial areas fixed at 2 US cents/square meter, cuts in corporation tax of 30%, 50% cuts in port fees on all exports, and exemption of industrial machinery and equipment from duties.
The Saudi Arabian Financial System

The Kingdom of Saudi Arabia's financial sector posted solid growth in 2011 and 2012 and is now one of the largest in the GCC, with total assets reaching $439.7 billion by the third quarter of 2012. In addition, bank profitability has risen in recent years, reaching $8.23 billion at the end of 2011, up from $6.94 billion at the end of 2010 and $7.14 billion in 2009. The financial industry’s expansion over the past few years is largely the result of strong fundamentals and a proactive government, especially in the wake of the 2008-09 international economic downturns. Since mid-2011, in particular, the banking sector has benefitted from solid non-oil GDP growth and strong spending from both the government and private sectors. Looking ahead, the continued expansion is expected for the sector, with high liquidity levels meaning that many banks are preparing to boost lending further (The report: Saudi Arabia 2013, Oxford Business Group). The growing GDP figure, compressing the economic progress of the country into a single figure, provides evidence too of a society ‘getting its collective act together’ (Growth report, 2008). As the economy grows, society becomes more tightly organized, more interconnected, one in which energies and resources are better deployed, and in which technologies are mastered and applied for the benefit of its members. Figure 1 below shows the historical performance of the Saudi GDP index from 1970 till 2011. It shows that the nominal GDP of the Kingdom has roughly doubled since 2005. In comparison with its neighbouring countries, Saudi Arabia achieved the highest GPD performance within the GCC countries. Also, the table below illustrates the major developments in GCC economies via different economic factors over 2010 and 2011. It is clearly seen that Saudi Arabia has a stronger economy against the GCC countries. This is because Saudi Arabia is the largest crude oil exporter in the world with the oil sector accounting for roughly 80% of budget revenues, 45% of GDP, and 90% of export earnings. On a global scale, the Kingdom is a member of the group of G20 countries.

Figure 1: Gross Domestic Product

Table 1: Major Developments in GCC Economies

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<tr>
<td>Nominal GDP</td>
<td>297.6</td>
<td>366.2</td>
<td>21.9</td>
<td>25.8</td>
<td>452.0</td>
<td>592.5</td>
<td>57.8</td>
<td>67.9</td>
<td>127.3</td>
<td>173.5</td>
<td>124.3</td>
<td>158.0</td>
</tr>
<tr>
<td>Real GDP growth</td>
<td>1.4</td>
<td>3.3</td>
<td>4.5</td>
<td>2.2</td>
<td>5.1</td>
<td>7.1</td>
<td>5.5</td>
<td>5.0</td>
<td>16.7</td>
<td>14.1</td>
<td>3.1</td>
<td>4.8</td>
</tr>
<tr>
<td>(percentage)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Inflation rate</td>
<td>0.9</td>
<td>0.9</td>
<td>2.0</td>
<td>-0.4</td>
<td>5.3</td>
<td>5.0</td>
<td>3.2</td>
<td>4.0</td>
<td>-2.4</td>
<td>1.9</td>
<td>4.0</td>
<td>4.7</td>
</tr>
<tr>
<td>Money Supply*</td>
<td>3.9</td>
<td>1.6</td>
<td>13.0</td>
<td>5.3</td>
<td>5.0</td>
<td>13.3</td>
<td>11.3</td>
<td>12.2</td>
<td>23.2</td>
<td>27.5</td>
<td>3.0</td>
<td>8.5</td>
</tr>
<tr>
<td>Imports (FOB)</td>
<td>161.4</td>
<td>198.5</td>
<td>11.2</td>
<td>12.1</td>
<td>96.7</td>
<td>119.1</td>
<td>17.9</td>
<td>21.3</td>
<td>20.9</td>
<td>22.2</td>
<td>19.1</td>
<td>20.7</td>
</tr>
<tr>
<td>Exports (FOB)</td>
<td>212.3</td>
<td>265.5</td>
<td>13.8</td>
<td>19.9</td>
<td>251.0</td>
<td>364.6</td>
<td>36.6</td>
<td>47.1</td>
<td>72.1</td>
<td>111.4</td>
<td>67.0</td>
<td>95.1</td>
</tr>
<tr>
<td>Current account</td>
<td>11.2</td>
<td>52.3</td>
<td>0.8</td>
<td>3.3</td>
<td>66.8</td>
<td>158.5</td>
<td>5.1</td>
<td>9.6</td>
<td>21.0</td>
<td>51.4</td>
<td>36.8</td>
<td>62.7</td>
</tr>
<tr>
<td>Ratio of current</td>
<td>3.8</td>
<td>14.3</td>
<td>3.5</td>
<td>12.6</td>
<td>14.8</td>
<td>26.8</td>
<td>8.8</td>
<td>14.2</td>
<td>16.5</td>
<td>29.6</td>
<td>29.6</td>
<td>39.7</td>
</tr>
<tr>
<td>account balance to GDP**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government balance (% of GDP)**</td>
<td>0.9</td>
<td>7.4</td>
<td>-5.6</td>
<td>-2.3</td>
<td>5.2</td>
<td>13.1</td>
<td>-2.0</td>
<td>3.7</td>
<td>2.9</td>
<td>7.1</td>
<td>22.4</td>
<td>33.6</td>
</tr>
<tr>
<td>Population (million)</td>
<td>4.7</td>
<td>4.8</td>
<td>1.3</td>
<td>1.4</td>
<td>27.4</td>
<td>28.1</td>
<td>2.8</td>
<td>2.8</td>
<td>1.8</td>
<td>1.8</td>
<td>2.7</td>
<td>2.8</td>
</tr>
</tbody>
</table>


The economy of Saudi Arabia is strong and favourably situated to achieve positive growth. The economic growth rate reflects all other economic activities in the country. According to the 48th Annual Report (2013): “issued by the Saudi Arabian Monetary Agency (SAMA), the growth rate rose from 5.1 percent in 2010 to 7.1 percent in 2011. In fact, the growth has been uneven due to changes in the price of crude oil; still it has been sufficiently robust, with consistent positive growth rates over the past several decades”. The International Monetary Fund issued a world economic outlook report (April, 2013) that stated that the average oil price rose by 31.6 percent in 2011, and increased further by 10.3 percent to US$ 114.7 per barrel in 2012. To shed light on the growth impact, data on GDP at constant prices, including import duties, show that it grew by 7.1 percent to Saudi Riyals 941.8 billion in 2011 from Saudi Riyals 879.8 billion in 2010. All major economic activities grew at varied rates. The financial sector grew by 3.0 percent (SAMA, 2013). This means the economy of Saudi Arabia continues to be based around oil which provides the dominant source of funds through which financial institutions are based (Akhter, 2010). This may be considered as one reason explaining why the financial crisis was less pronounced in Saudi Arabia compared to the western economies. The government’s current account surplus has been strong and consistent, averaging about 20% of GDP, while the capital account deficit declined from 22.4% to 9.4% of GDP from 2006 to 2010. Bank lending to the private sector increased strongly and consistently over this period, reaching a yearly increase of 13.5% in April 2012. The Tadawul All Share Index (TASI) increased from 5,500 in March 2011 to 7,900 in March 2012, continuing
to increase to 8,481.1 in December 2013. The number of factories increased from 3484 in 2004 to 4878 in 2011, with unemployment down from 12% in 2006 to 10.5% in 2012 (Gamble 2012 and Ministry of Economy, 2011).

On the other hand, the essential system which should be followed in Saudi Arabia is the Islamic finance system, because it is classified as an Islamic country. Al-Hassan, Jhamis and Oulidi (2010) investigated why both systems work in the Saudi market (Islamic finance and Conventional finance). Also, they illustrated how similar these systems are. They claimed that because of the massive production and export of oil from Saudi Arabia and the Gulf countries, it can be said the Saudi market shares with neighbouring countries the same economic principles, which means sharing the strengths and vulnerabilities. After all, Islamisation on banking products and services in Saudi Arabia was driven also in some way from a marketing perspective in order to meet the interest of the bank users by adopting what they need. The financial sector in this area is obviously controlled by banks. In other words, financial institutions are found to be fewer than banks and do not compete head to head with banks in this field. Al-Hassan et al. (2010) also argued that the investment system in Saudi Arabia was exposed to vulnerability in some cases, such as the recent financial crisis. According to Woertz (2008), the Saudi Arabian market suffered around a 40% decrease in their indices. However, Gomel and Saidi (2010) indicated that banks benefited from an average increase in the GDP, which was about seven percent from 2003 to 2008. The investment system in Saudi Arabia is well known for having its features shared. Obay and Kashani (2008) described the investment sector and mentioned that the main feature is its work in the narrow domestic market. Another factor is that this system is monitored by highly restricted regulations from the government. Obviously, these regulations affect the operations of the Saudi banks, but at the same time they help reduce involvement in high risk investments.

It has been observed that there are new developments occurring to boost the profitability of these investment companies and banks. One of these developments, discussed by Pock, Croonenberg and Buchta (2007), is that there are some emerging contracts between banks, clearly to strengthen their financial positions on this matter. Specifically, in 2008 Saudi Arabia became a member of the World Trade Organisation which obliges their members to open the local market to foreign investors; they allow foreign banks to share domestic banks and operate in new banks’ brands. However, this sharing policy has its limits and conditions and is not fully open to foreign banks owning open equity. For example, the percentage of the ownership for foreign banks is limited to no more than 40%.

Nevertheless, Ariss, Rezvanian and Mehdian (2007) claimed that the revolution of globalisation puts Saudi financial institutions under pressure to be more productive and actively competitive. Because of this, financial institutions in Saudi Arabia are advised to focus on putting efficiency high on the scale, which obviously concentrates on increasing profitability with decreasing costs.
There are other economic indices measuring the economy of Saudi Arabia such as interest, inflation rates and country public debt. According to a SAMA report (2013): “the interest rate in Saudi Arabia as set by the Saudi Inter-Bank Offered Rate (SIBOR) is affected by two factors. Firstly, as Saudi Arabia is an open economy, there are no restrictions on currency exchange. Secondly, Saudi Arabia has utilised a Riyal/Dollar pegged currency exchange rate scheme since 1986 at US$ 1 = SR3.75 as it plays a decisive role in monetary policy, inflation stability and the balance of payments”. The consequences of such pegging imply that Saudi Arabia’s financial market is highly integrated, although not always, with the US market. Therefore, the concentrations of foreign exchange outflow and US dollar/riyal interest rate differentials (of about 1½ percent) have some affect in shaping the Riyal interest rates (USA International Business Publications, 2005).

The public debt of the country also reflects the economic development in the Kingdom. The outstanding public debt recorded a decline of 18.9% to SR 135.499 million or 6.1% of GDP at the end of the fiscal year 1433/1434 H (2011) compared to a decline of 25.8% and 9.8% of GDP in fiscal year 2010. The total amount borrowed during 2011 stood at SR 5.422 million against SR 15 million in the preceding year. The total amount paid out stood at SR 36.922 million compared to SR 124 million in the previous year (SAMA annual report, 2013).

Table 2: Public Debt index in Saudi Arabia

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Borrowed</th>
<th>Repaid</th>
<th>Outstanding Public Debt at year end</th>
<th>% Change</th>
<th>GDP at current prices</th>
<th>(% ) Ratios of public debt to GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>11,180</td>
<td>109,040</td>
<td>266,762</td>
<td>-26.8</td>
<td>1,442,572</td>
<td>18.5</td>
</tr>
<tr>
<td>2008</td>
<td>298</td>
<td>32,026</td>
<td>225,034</td>
<td>-11.9</td>
<td>1,786,143</td>
<td>13.2</td>
</tr>
<tr>
<td>2009</td>
<td>217</td>
<td>10,143</td>
<td>225,108</td>
<td>-4.2</td>
<td>1,412,596</td>
<td>15.9</td>
</tr>
<tr>
<td>2010</td>
<td>15</td>
<td>58,124</td>
<td>166,999</td>
<td>-25.8</td>
<td>1,709,708</td>
<td>9.8</td>
</tr>
<tr>
<td>2011</td>
<td>5,422</td>
<td>36,922</td>
<td>135,499</td>
<td>-18.9</td>
<td>2,239,073</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Source: Ministry of Finance and Central Department of Statistics and Information, Ministry of Economy and Planning.
Table 3 (a): Selected Economic Indications (1)

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated population (in million)</td>
<td>25.79</td>
<td>26.66</td>
<td>27.56</td>
<td>28.37</td>
</tr>
<tr>
<td>GDP at current prices (billion Riyals)</td>
<td>1,786.1</td>
<td>1,412.6</td>
<td>1,709.7</td>
<td>2,239.1</td>
</tr>
<tr>
<td>GDP at constant prices of 1999 (billion Riyals)</td>
<td>836.1</td>
<td>836.9</td>
<td>879.8</td>
<td>941.8</td>
</tr>
<tr>
<td>Non-oil GDP deflator</td>
<td>119.7</td>
<td>123.7</td>
<td>129.9</td>
<td>136.4</td>
</tr>
<tr>
<td>Inflation rate (consumer prices)</td>
<td>9.9</td>
<td>5.1</td>
<td>5.3</td>
<td>5.0</td>
</tr>
<tr>
<td>Aggregate money supply M3 (billion Riyals)</td>
<td>929.1</td>
<td>1,028.9</td>
<td>1,080.4</td>
<td>1,223.6</td>
</tr>
<tr>
<td>Daily Average for Saudi Oil Production (Million Barel)</td>
<td>9.2</td>
<td>8.2</td>
<td>8.2</td>
<td>9.3</td>
</tr>
<tr>
<td>Average price of Arabian Light oil (US$)*</td>
<td>94.77</td>
<td>61.38</td>
<td>77.75</td>
<td>107.80</td>
</tr>
<tr>
<td>Rial’s real effective exchange rate (2000=100)</td>
<td>97.7</td>
<td>105.7</td>
<td>104.8</td>
<td>102.3</td>
</tr>
<tr>
<td>Ratio of currency in circulation to total money supply</td>
<td>8.9</td>
<td>8.6</td>
<td>8.8</td>
<td>9.8</td>
</tr>
<tr>
<td>Ratio of total deposits to total money supply</td>
<td>91.1</td>
<td>91.4</td>
<td>91.2</td>
<td>90.2</td>
</tr>
<tr>
<td>Net foreign assets of domestic banks (billion Riyals)</td>
<td>41.5</td>
<td>111.2</td>
<td>98.4</td>
<td>133.3</td>
</tr>
<tr>
<td>Interest Rates On Saudi Ryal Deposits % (3 Months)**</td>
<td>3.3</td>
<td>0.9</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Banks capital adequacy ratio (Basel standard 2)</td>
<td>16.0</td>
<td>16.5</td>
<td>17.1</td>
<td>17.4</td>
</tr>
<tr>
<td>Actual government revenues (billion Riyals)</td>
<td>1,101.0</td>
<td>509.8</td>
<td>741.6</td>
<td>1,117.8</td>
</tr>
<tr>
<td>Actual government expenditures (billion Riyals)</td>
<td>520.1</td>
<td>596.4</td>
<td>653.9</td>
<td>826.7</td>
</tr>
<tr>
<td>Budget deficit / surplus (2)</td>
<td>580.9</td>
<td>-86.6</td>
<td>87.7</td>
<td>291.1</td>
</tr>
<tr>
<td>Ratio of budget deficit / surplus to GDP</td>
<td>32.5</td>
<td>-6.1</td>
<td>5.1</td>
<td>13.0</td>
</tr>
<tr>
<td>Exports of goods*** (billion Riyals)</td>
<td>1,154.0</td>
<td>697.3</td>
<td>922.1</td>
<td>1,343.2</td>
</tr>
<tr>
<td>Import of goods CIF (billion Riyals)</td>
<td>431.8</td>
<td>358.3</td>
<td>400.7</td>
<td>493.7</td>
</tr>
<tr>
<td>Ratio of current account surplus to GDP</td>
<td>27.8</td>
<td>5.6</td>
<td>14.6</td>
<td>26.5</td>
</tr>
<tr>
<td>Current account (billion Riyals)</td>
<td>496.2</td>
<td>78.6</td>
<td>250.3</td>
<td>594.2</td>
</tr>
<tr>
<td>Share price index (1985=1000)</td>
<td>4,803.0</td>
<td>6,121.8</td>
<td>6,620.8</td>
<td>6,417.7</td>
</tr>
<tr>
<td>Debt to GDP</td>
<td>13.2</td>
<td>15.9</td>
<td>9.8</td>
<td>6.1</td>
</tr>
</tbody>
</table>

* OPEC’s sources. ** Interbank offered rates. *** Including oil export + other exports (of which re-export + bunker oil).

Source: 48th annual report, SAMA, 2013
The empirical research we perform throughout this thesis discusses the financial risk of the Saudi Arabian Sukuk market. The choice of Saudi Arabia as a case study is for several reasons. First, the Saudi Arabian financial market is the largest market among its rivals in both the Middle East and North African (MENA) area and the Muslim world. Second, the Saudi market contains most of the properties that distinguish an emerging financial market from a developed one including high levels of volatility, market incompleteness, market imperfection and violation of the efficient market hypothesis. Third, on macroeconomic and monetary levels, the country shares common characteristics with some major developing countries such as China. The Kingdom has, recently, been experiencing fast growth rates; it is an export driven economy and it adopts a fixed exchange rate policy. Fourth, it has a major impact on the global economy as it is the world’s largest oil supplier. Last, the Saudi Arabian economy is strongly affected by Islamic principles. Saudi Arabia is known as the most religious country in the world, where people are practicing Islam in daily life. Therefore, any activity or exertion that contradicts Islamic rules would be rejected by the people, or at least by the majority. As far as the financial system is concerned, the influence of Islamic principles is clearly affecting the financial institutions. Thus, a good understanding of the characteristics and financial risks of the Sukuk market will assist in understanding the factors that drive similar emerging financial markets, especially in the GCC region.

Source: 42nd, 43rd, 44th, 45th, annual report, SAMA
The Saudi Arabian Capital Market

The Saudi Arabian stock, bond and Sukuk markets (Arabic: السوق المالية السعودية) operated by the Tadawul company are the only tradable financial securities markets in Saudi Arabia. They are supervised by the Capital Market Authority. The Tadawul All-Share Index (TASI) reached its highest pre-crisis level at 20,634.86 on 25 February 2006. It lists 160 publicly traded companies (as of December 25, 2013), distributed into 15 sectors. Its trading hours are 11AM to 3:30PM, Sunday to Thursday (Tadawul site, 2013).

Historically, the capital market first appeared in Saudi Arabia in the 1930s. At that time the market had not achieved high standards of regulation because it was considered an informal and unorganised market. Most of the projects and corporations at the time were owned primarily by the government or families. Even after the boost in oil prices between 1973 and 1981, which meant that the country needed to set up new projects, the government ignored the need for a capital market to facilitate financial instruments in order to finance these new projects; their solution instead was to borrow money from financial institutions such as the Saudi Industrial Developing Bank (SIDB).

After 1984, Saudi Arabia experienced significant industrial development, which bought awareness of the need to establish new economic schemes. Financial institutions such as SIDB were no longer efficient at financing new projects, and the private sector believed that the government should adopt new methods to help mobilise national savings through capital markets in order to finance the emerging growth. For this reason, stock market trading was regulated by the Ministerial Committee in 1984; afterwards, in 1997, the authorities allowed foreign investors to invest in the stock market through mutual funds in order to increase the depth of the stock market. Recently, in 2015 CMA made the Saudi Stock market a free trade market and foreign investors can access the market directly.

The Capital Market Authority (CMA) is the Saudi Arabian government organisation responsible for regulating the Saudi Arabian capital market. It has financial, legal and administrative independence and reports directly to the Prime Minister. Its responsibilities include setting rules and regulations, making sure they are followed, operating a committee to settle disputes and developing the capital markets in Saudi Arabia. Its role also includes regulating the Saudi bonds and Sukuk markets. The CMA was established by the Capital Market Law, issued by Royal Decree No. M/30 dated 14/5/1425H [2 July, 2004] (CMA site, 2015).

The CMA describes its duties as summarised below:
• Improving and regulating the capital market.
• Enhancing investors’ and the public’s protection from illegal and unfair actions, such as fraud, dishonesty, deception, manipulation and unfair trade.
• Applying practices to guarantee fair, efficient and transparent financial transactions.
• Developing scales to mitigate the risks associated with financial transactions.
• Improving, regulating and supervising the issuance and trading in financial securities.
• Regulating and supervising activities adopted by entities operating under the control of CMA.
• Regulating and supervising disclosures and information related to the financial market and the entities operating under the control of CMA.
• Regulating market operations and public offerings.

The capital market law is mainly designed for restructuring the capital market in the Kingdom by introducing new concepts that may contribute to protecting investors, enhancing confidence in the market, attracting investments and increasing market transparency. The law provides an umbrella and integrated regulatory reference for the market that explains structures, regulations, supervision and operational entities and defines their duties and obligations.

The Saudi Arabian stock market has been growing positively since 2008, as shown by the stock market indicators in the following table.

Table 4: Saudi Arabian Stock Market Indicators

<table>
<thead>
<tr>
<th>Period</th>
<th>Number of Shares Traded (Million SRS)</th>
<th>Turnover Ratio</th>
<th>Value of Shares (Million SRS)</th>
<th>Market Value of Shares (Billion SRS)</th>
<th>Number of Transactions</th>
<th>Number of Companies</th>
<th>P/E Ratio</th>
<th>General Share Price Index* (1990 = 1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>58,727</td>
<td>212</td>
<td>1,962,946</td>
<td>925</td>
<td>52,135,929</td>
<td>127</td>
<td>10</td>
<td>4,883</td>
</tr>
<tr>
<td>2009</td>
<td>56,685</td>
<td>106</td>
<td>1,266,012</td>
<td>1,170</td>
<td>36,458,326</td>
<td>135</td>
<td>10</td>
<td>6,122</td>
</tr>
<tr>
<td>2010</td>
<td>33,255</td>
<td>57</td>
<td>798,184</td>
<td>1,325</td>
<td>19,536,143</td>
<td>145</td>
<td>15</td>
<td>6,621</td>
</tr>
<tr>
<td>2011</td>
<td>48,545</td>
<td>86</td>
<td>1,898,836</td>
<td>1,271</td>
<td>25,546,933</td>
<td>150</td>
<td>12</td>
<td>6,418</td>
</tr>
<tr>
<td>2012</td>
<td>86,066</td>
<td>138</td>
<td>1,829,318</td>
<td>1,400</td>
<td>42,105,048</td>
<td>158</td>
<td>13</td>
<td>6,001</td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan</td>
<td>4,655</td>
<td>9</td>
<td>128,131</td>
<td>1,440</td>
<td>2,790,936</td>
<td>158</td>
<td>13</td>
<td>7,044</td>
</tr>
<tr>
<td>Feb</td>
<td>4,640</td>
<td>8</td>
<td>118,319</td>
<td>1,431</td>
<td>3,201,176</td>
<td>159</td>
<td>13</td>
<td>6,998</td>
</tr>
<tr>
<td>Mar</td>
<td>3,940</td>
<td>8</td>
<td>122,404</td>
<td>1,452</td>
<td>3,176,146</td>
<td>160</td>
<td>13</td>
<td>7,126</td>
</tr>
<tr>
<td>Apr</td>
<td>4,995</td>
<td>10</td>
<td>144,269</td>
<td>1,445</td>
<td>3,725,042</td>
<td>162</td>
<td>13</td>
<td>7,180</td>
</tr>
<tr>
<td>May</td>
<td>4,676</td>
<td>8</td>
<td>116,289</td>
<td>1,493</td>
<td>2,559,081</td>
<td>160</td>
<td>14</td>
<td>7,404</td>
</tr>
<tr>
<td>Jun</td>
<td>5,803</td>
<td>9</td>
<td>131,792</td>
<td>1,497</td>
<td>2,693,852</td>
<td>160</td>
<td>14</td>
<td>7,497</td>
</tr>
<tr>
<td>Jul</td>
<td>4,084</td>
<td>7</td>
<td>106,434</td>
<td>1,564</td>
<td>2,062,084</td>
<td>161</td>
<td>14</td>
<td>7,915</td>
</tr>
<tr>
<td>Aug</td>
<td>3,841</td>
<td>6</td>
<td>93,409</td>
<td>1,543</td>
<td>1,838,344</td>
<td>161</td>
<td>14</td>
<td>7,767</td>
</tr>
<tr>
<td>Sep</td>
<td>4,571</td>
<td>7</td>
<td>114,299</td>
<td>1,586</td>
<td>2,206,515</td>
<td>161</td>
<td>15</td>
<td>7,965</td>
</tr>
<tr>
<td>Oct</td>
<td>3,322</td>
<td>5</td>
<td>83,752</td>
<td>1,620</td>
<td>1,583,184</td>
<td>161</td>
<td>15</td>
<td>8,044</td>
</tr>
<tr>
<td>Nov</td>
<td>3,428</td>
<td>6</td>
<td>94,912</td>
<td>1,697</td>
<td>1,558,375</td>
<td>161</td>
<td>15</td>
<td>8,325</td>
</tr>
</tbody>
</table>


The Saudi Arabian capital market comprises stock, bond and Sukuk trades. On the debt securities side, another debt instrument adopted in the market but restricted to government trades only, is the Treasury Bill. Because the thesis focuses on the debt market in Saudi Arabia, only a quick introduction to the Saudi Treasury Bills trade is given. It is considered a short term debt security. Treasury Bills are used for cash-flow management and are offered only to banks. In 1991, another cornerstone evolution took place in the Saudi capital market where Treasury Bills took the place of Bankers Security Deposit Accounts (BSDAs, i.e. Central Bank Bills)
being offered on a weekly basis for quarterly fixing linked to 3-month SIBOR for maturities of 1, 4, 13, 26, and 52 weeks (SAMA, Annual Report, 2007).

Due to the fact that the Saudi government fiscal situation improved considerably in 2005 and 2006 as oil prices surged, the Saudi government diminished its recourse to a weekly issue of Treasury Bills from SR 2 billion in 2005 to SR 1 billion in 2006. The Saudi GDP strengthened at an unprecedented rate which helped to bring down the public debt from 82 percent in 2003 to 65 percent in 2004, and to 38.9 percent in 2005, and 27.9 percent in 2006 (SAMA Annual Report 2007). Treasury Bills (t-bills) have been an efficient scheme in the liquidity management currently implemented by SAMA.

Islamic Finance in the Saudi Arabian Market

Islamic finance in the Saudi financial market is in direct competition with the Conventional financial system. However, the question remains as to whether the Islamic finance system is able to be a lasting competitor. In other words, is the Islamic finance system developed enough to remain as a fundamental finance system or is it just a bubble that is expected to burst in the near future? One of the key answers to these questions is illustrated by Al-Zamel (2006), who indicated that the principles that Islamic banks in the Saudi market, or even in the whole world, depend on, make this competition even harder. One of the key issues in this case is that one of the banks’ essential sources of income is from instruments based on interest, which forces Islamic banks to find other innovative methods as alternatives to this traditional profitable window. To resolve these issues, Al-Zamel (2006) suggested that Islamic banking needs to be included in the framework as a part of the ultimate Islamic economy which requires more open Islamic markets and involvement in the whole creation of Islamic countries’ GDP. For example, in the case of resolving the problem of interest rates and interest-related issues, Al-Zamel (2006) gave alternatives by creating a financial capital rate instead of interest rate. This rate employs equity and shares as factors to move the rate up or down as an index. In this regard, Wilson (2008) argued that in Saudi Arabia, the GDP should be considered as a benchmark for price based on sovereign Sukuk.

On the other hand, in the debt securities context, currently there are alternative indices which the Islamic finance industry might use, such as the Dow Jones Sukuk Index which is designed to measure the performance of the global Sukuk market launched in 2006. The Islamic Interbank Benchmark Rate (IIBR) was launched on 22 November, 2011 by Thomson Reuters. It is classified as the dominant Islamic Interbank Benchmark Rate. It is designed to provide an objective and dedicated indicator for the average expected return on Shariah-compliant short-term interbank funding (Thomson Reuters site, 2011). It may be noticed that those Sukuk indices addressed Sukuk performance regardless of the type or financial structure, treating it as one unit while omitting Sukuk structure in the performance measurement. This may lead to an inaccurate result on the investment decision of investors. This research attempts to figure out the relationship between Sukuk structure and performance in terms of risk and return. It investigates the idea of Sukuk performance measurements by having different scales of measurement based on Sukuk structure in the global market.
The Islamic finance market size in Saudi Arabia has increased overall. For instance, much of the Islamic investment activity in the GCC has involved Islamic syndicated financing of projects, with, not surprisingly Saudi Arabia the most active market followed by the UAE, as Table 3 shows.

Table 5: Syndicated Islamic Finance in the GCC, 2000-2008

<table>
<thead>
<tr>
<th>Country</th>
<th>No. of deals</th>
<th>Value of deals in US$ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahrain</td>
<td>30</td>
<td>4.222</td>
</tr>
<tr>
<td>Kuwait</td>
<td>15</td>
<td>5.148</td>
</tr>
<tr>
<td>Oman</td>
<td>2</td>
<td>345</td>
</tr>
<tr>
<td>Qatar</td>
<td>24</td>
<td>4.088</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>46</td>
<td>28.537</td>
</tr>
<tr>
<td>UAE</td>
<td>41</td>
<td>15.655</td>
</tr>
</tbody>
</table>

Source: Islamic Finance Information Service, October 2008

This implies that the provisions are clear and there is no problem in drawing up legal contracts consistent with Shariah principles for this type of financing facility (Siddiqi, 1985).

As a consequence Islamic banking in Saudi Arabia has been very profitable, with AlRajhi Bank being by far the most profitable bank in Saudi Arabia with net income exceeding SR6.4 billion in 2007 and SR6.5 billion in 2008. Despite a stock market correction negatively affecting fees and Murabaha repayments, almost SR 99 billion was held in AlRajhi demand deposits in 2008, but a mere SR 17.7 billion held in time deposits on which a return was earned.

Wood’s (2009) study addressed the market size of the Islamic market in Saudi Arabia. He stated that Saudi Arabia is the second most important centre for the Islamic finance fund management market. There were 131 Islamic funds domiciled and managed in Saudi Arabia by late 2009, against 149 in Malaysia. It may be argued that the expansion of the Malaysian market against the Saudi Arabian market is driven by the different Shariah school that they follow and adopt for interpretations of Islamic finance principles. Kettel (2013) commented that the current practice of Islamic banking in Malaysia has been criticised as being insufficiently different from Conventional banking. The focus of this criticism is the application of Shariah to the Bay-Al-Inah contract in creating a number of so-called Islamic financing products. Bay-Al-Inah is a sale contract with immediate repurchase. It takes place when a financial institution sells an asset on credit terms and immediately buys back
the asset, for cash, at a lower price. The classical jurists are in disagreement in assessing the legality of the contract. It was impermissible in other Shariah schools such as the school followed in Saudi Arabia and the Gulf states. This is a critical consideration between the two competitive Islamic finance markets.

The Saudi Arabian Sukuk Market

First, the Saudi Arabian market in government bills and bonds has become much more sophisticated in recent years, partly reflecting the growth of government debt and the consequent efforts to find more methods of funding it. The Saudi Arabian Monetary Agency (SAMA) handles these through its transactions with the commercial banks, and with the repossessions serving as their liquid assets. The average value of repos was SR1.8 billion and reverse repos SR3.2 billion in 2002, compared with averages of SR1.6 and SR1.0 billion respectively in 2000 (Wilson, 2008). Moreover, the aftermath of the 2008 global financial crisis encouraged the market trend towards Sukuk investment, due to the perceived lower risk profile of Islamic finance enjoyed during the crisis. This lead SAMA to establish a secondary market for Sukuk trade. Globally, Saudi Arabia has become a competitor in the Sukuk market with Malaysia and UAE.

Figure 2: Global Sukuk markets by countries

Source: IIRA, Islamic Capital Market, 2012

Figure 3: Global Issuance data by value for 2012 (USD million)
13th June 2009 was the first day of the first trading session in Saudi Arabian bonds and the Sukuk market. The new electronic market provides services such as: listing of Sukuk and bonds, order and transaction execution, clearing and settlement among traders, and price information direct dissemination. The mechanism for trading Sukuk via the market takes place through licensed brokerage firms operating in the exchange and using the same investment portfolio used for trading stocks. The Sukuk and bonds market is meant to create new investment options to Saudi investors to facilitate the investment strategy of portfolio diversification after the collapse of the stock market. In contrast with trading in stocks, the ratio of price change of Sukuk and bonds is unlimited. For example, there is no maximum or minimum limit for the change in prices. The Sukuk and bonds markets follow the Saudi capital law supervised by CMA and operated by Tadawul Company.

The growth of the Sukuk market in Saudi Arabia is dynamic. Fayez (2009) contributed a study of the Sukuk market in Saudi Arabia. He stated that Saudi Arabia offers great potential for the development of financial services by setting up the Sukuk market. He expects the Sukuk market to increase the use of Sukuk in the global market, which is a tremendous opportunity for Saudi Arabia. According to a Zawya report in 2009, one of the factors which would lead to the increasing use of Sukuk would be greater limits on the size of bank loans. Companies in need of finance and investment would be encouraged to use Sukuk if banks do not provide higher valued loans. Latham and Watskin (2010) stated that a sense of urgency to develop diversified sources of income has developed in Saudi Arabia and other Middle Eastern countries. Sukuk are financing a lot of these development activities, especially infrastructure projects, which the Saudi government mainly tends to establish these days. To elaborate, economists believe that the Saudi Arabian economy needs to reduce its dependency on its dwindling oil resources. Recently, this was enhanced with the Kingdom announcement on 23 December 2013 by King Abdullah Ben Abdul Aziz that the government strategy intends to increase the diversification of the economy towards non-oil resources in the country. Thus, the finance ministry announced that the government will issue sovereign Sukuk in 2014 sponsored by the government treasury to finance infrastructure.
projects in the Kingdom, starting with new airports across the country. Regarding the GCC Sukuk markets, Saudi Arabia has become the third player in terms of Sukuk issuance after UAE and Bahrain. Table 4 below shows Sukuk issuance numbers in the GCC countries over the period 2000 to 2008. Because Saudi Arabia started up in Sukuk investment later than other GCC countries, such as UAE and Bahrain this explains the smaller number of issues in the Kingdom. However, the total value of Sukuk issued by Saudi Arabia is bigger than the total value of the Bahrain Sukuk.

Table 6: Sukuk securities issuance in the GCC over the period 2000 to 2008

<table>
<thead>
<tr>
<th>Country</th>
<th>No. of Sukuk issuances</th>
<th>Value in US$ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahrain</td>
<td>89</td>
<td>4.543</td>
</tr>
<tr>
<td>Kuwait</td>
<td>12</td>
<td>2.203</td>
</tr>
<tr>
<td>Qatar</td>
<td>5</td>
<td>1.571</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>15</td>
<td>9.585</td>
</tr>
<tr>
<td>UAE</td>
<td>34</td>
<td>26.823</td>
</tr>
</tbody>
</table>

Source: Islamic Finance Information Service, October 2008

Type of structures and listing of Sukuk

According to Alawwal Capital (recently name Saudi Hollandi Capital) report in Sukuk (2013), the Saudi Arabian Sukuk market has developed different Sukuk structures over the years, with Investment Sukuk (mixed structures) and Mudharabah being the most prominent, each accounting for approximately 30% of Sukuk issued so far. Prior to 2011, Investment Sukuk was the most popular structure among issuers. Recently, issuers have started preferring the Mudharabah based structure. In terms of listing, domestic issuers have preferred private placements rather than public issuances, with roughly a third of issuances listed on Saudi Arabia’s stock exchange, Tadawul. Prior to 2011, there were more public issuances, with 50% of Sukuk being listed. However, since 2011, there have been just four public issuances out of 18 (approximately 20%). With some of the earlier issuances being redeemed early, there are just eight Sukuk currently listed on Tadawul.
Furthermore, the Sukuk market in Saudi Arabia inherited its strength from the solid economic drivers of the Saudi Arabian economy. Sukuk, as a Shariah compliant instrument generates an investment trend geared towards local investors in the Saudi market. In general, the major drivers of demand and supply of Sukuk in Saudi Arabia are the following:
1) Sukuk offered alternative source of funding for issuers.
2) Sukuk are attractive as Shariah compliant investment options.
3) Increasing infrastructure and industrial investments.
4) Banks’ inclination to lend mostly for the short term.

**Saudi Arabian Sukuk Market Analysis**

To date there has been no record of bond trading in the market since it was established in 2009. This opens the wholesale market for Sukuk trading only. The development of corporate Sukuk was conducted only after the establishment of the sovereign Sukuk, with the main corporate Sukuk issuers being Saudi Arabia Basic Industries Corporation (SABIC), Saudi Electricity Company, Aramco Company and Alawwal Bank.

The general view of the Sukuk market is a positive one. The total value of issued Sukuk reached SR38.3bn in 2012. The TASI Sukuk and bonds market index recorded 994.03 points, a decrease from the starting point of 1000 in 2009. The total number of Sukuk listed is eight, three of which were issued by SABIC with a nominal value of SR16 bn. One Sukuk was issued by the Alawwal Bank with a nominal value of SR 725 million, and three were issued by the Saudi Electricity Company with a nominal value of SR19 bn. The Saudi International Petrochemical Company (Sipchem) issued one Sukuk with a nominal value of SR1,800 million, Arabian Aramco Total Services Company contributed by issuing one Sukuk with a nominal value of SR3,750 million and recently the Saudi ORIXL leasing company issued one Sukuk with a nominal value of SR240 million. In 2012, SABIC 2 and Saudi Electricity 1 Sukuk were redeemed and delisted from the Sukuk and bond market on 15 July 2012. Sukuk total traded value declined by 75.3% to SR 446.0 million in 2012 with 20 compared to 49 in 2011, as presented in Table 5 (Annual report 2012, CMA).

**Table 7: Saudi Arabian Sukuk and bond market highlights**

<table>
<thead>
<tr>
<th>Issuer</th>
<th>Sukuk/Bond Name</th>
<th>Issue Date</th>
<th>Type of Debt Instrument</th>
<th>Issue Value (SR Million)</th>
<th>Number of Executed Trades</th>
<th>Trading Value (SR Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SABIC</td>
<td>SABIC 1</td>
<td>17/7/2006</td>
<td>Sukuk</td>
<td>3,000</td>
<td>2</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>SABIC 2</td>
<td>6/8/2007</td>
<td>Sukuk</td>
<td>8,000</td>
<td>11</td>
<td>76.0</td>
</tr>
<tr>
<td></td>
<td>SABIC 3</td>
<td>26/5/2008</td>
<td>Sukuk</td>
<td>5,000</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Saudi Electricity Co. (SEC)</td>
<td>Saudi Electricity 1</td>
<td>23/7/2007</td>
<td>Sukuk</td>
<td>5,000</td>
<td>11</td>
<td>79.0</td>
</tr>
<tr>
<td></td>
<td>Saudi Electricity 2</td>
<td>6/7/2009</td>
<td>Sukuk</td>
<td>7,000</td>
<td>14</td>
<td>74.5</td>
</tr>
<tr>
<td></td>
<td>Saudi Electricity 3</td>
<td>10/5/2010</td>
<td>Sukuk</td>
<td>7,000</td>
<td>3</td>
<td>1,452</td>
</tr>
<tr>
<td>Saudi Hollandi Bank</td>
<td>SHB Sukuk 2</td>
<td>31/12/2009</td>
<td>Sukuk</td>
<td>725</td>
<td>-</td>
<td>3.0</td>
</tr>
<tr>
<td>Saudi International Petrochemical Co.</td>
<td>Sipchem</td>
<td>6/7/2011</td>
<td>Sukuk</td>
<td>1,800</td>
<td>3</td>
<td>121.7</td>
</tr>
<tr>
<td>Arabian Aramco Total Services Co.</td>
<td>SATORP</td>
<td>9/10/2011</td>
<td>Sukuk</td>
<td>3,750</td>
<td>-</td>
<td>2.0</td>
</tr>
<tr>
<td>Saudi ORIX Leasing Company</td>
<td>ORIX</td>
<td>26/12/2012</td>
<td>Sukuk</td>
<td>240</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>41,514.9</strong></td>
<td><strong>49</strong></td>
<td><strong>1,809,3</strong></td>
</tr>
</tbody>
</table>

232
The Sukuk issuance rate has performed positively over the last 8 years, apart from dropping during the aftermath of the 2008 financial crisis.

Figure 6: Total Amount of Sukuk issuance in the Saudi Arabia over the period 2004 to 2012

More of the recent trends and development of the Saudi Arabian Sukuk market in Chapter 7 of this study computation of Sukuk returns and risk measures are presented, in order to provide a comparison between the return and risk profiles of the Saudi Arabian Sukuk market with the global Sukuk market. A main conclusion is that the consistency of positive returns during the period after the recent financial crisis has contributed to the development and growth of the Sukuk industry in Saudi Arabia.

Other studies conducted on the analysis of the Sukuk market in Saudi Arabia include Wilson (2008) and Alsaeed (2012). Wilson (2008) provided an analysis of different Sukuk types from a financial prospective, discussing in particular whether the payment flows are stable in the case of sovereign Sukuk when the returns are based on the gross domestic product rather than fixed interest as is the case in Saudi Arabia and Malaysia. He found that the GDP-based pricing benchmark would have resulted in less payment volatility in the Saudi Arabian sovereign Sukuk but not for the Malaysian. He also noted that use of Special Purpose Vehicles (SPV) is a prerequisite for the successful issuance and management of Sukuk. Alsaeed (2012) contributed with a thesis evaluating the recent trends and the positive expectations of Sukuk issuance in Saudi Arabia. He also analysed corporate Sukuk issuances in the Saudi market over the period 2004 to 2010, by examining the issuance of corporate Sukuk and seeking opinions from market makers as to how this type of financing can be taken forward. He claimed that Sukuk have a better risk profile than bonds, as they are supported with mandatory underlying assets to reduce risk exposure. However, it might also be attributed to differing risk default factors between Sukuk and bonds. The study concluded that the outlook for Sukuk in Saudi Arabia is positive, with Sukuk becoming an important financing instrument complementing bank lending and IPOs.
Key Challenges for the Saudi Arabian Sukuk Market

There are ongoing debates and criticism on current practices in Sukuk markets. Sukuk are still relatively new instruments and further research is required.

Since late 2007 the Sukuk market has been adversely affected by two major events (Weddernurn-Day, 2010). First was the announcement by AAOIFI on the permitted Sukuk structures that adversely affected scholars’ acceptance of certain types of Sukuk. Second, the impact of the 2008 global financial crisis on sovereign Sukuk issuance that contributed to the fall in Sukuk issuance. This means that interpretation of Shariah rules is not yet adequately standardised. This impedes the development of the Sukuk market, as Shariah scholars may interpret the Shariah rules differently, leading to inconsistent views on what is acceptable to investors. In this context, Fayez (2009) mentioned that it is observable that the Saudi Arabian Sukuk market lacks sufficient regulation and legislation. He argues that more regulation is needed, in particular because the current regulation does not enable the efficient setup of special purpose companies dedicated to the issuance of Sukuk and to the special transactions relating to Sukuk.

In addition, Sukuk default is a major concern, which affects the investors’ trust for further investment in the same defaulted instrument. Challenges arise because Sukuk are based on Islamic law, which bans interest and requires a tangible asset to underlie financial transactions.

In Saudi Arabia, Sukuk default recorded a lower rate compared with other Sukuk markets such as the GCC markets. It recorded one case of default in May 2009, Saad Group ‘Golden Belt’ with a value of US$650 million. Saad’s Golden Belt Sukuk are secured by land in Saudi Arabia, valued at about 40% of the Sukuk principal (Robin, FT, 2009). The issue is not clear cut due to confusion arising from the difference between ‘asset-based’ and ‘asset-backed’. This is a critical point in understanding the Sukuk structure concept and it will be discussed further in the following chapter (chapter 4).

The limitation in the number of tradable Sukuk in the Saudi Arabian debt market creates limited trade volume. Despite the total outstanding payouts from Sukuk, it is important to achieve further development in Sukuk issuance and listing in the market.

There are certain reasons for the slow Sukuk market development, including the lack of financial experts who are versed enough in two areas, Shariah requirements and financial skills. Anjum (2008) said that the legal framework of Sukuk needs a careful evaluation and the market needs to be regulated. In addition, inefficient government regulations make brokerage firms unable to engage in the trade of Sukuk. Finally, a major issue facing the Sukuk market is the diversity in the interpretation of Shariah law regarding Sukuk which leads to difficulty in standardisation of the instrument. In this regard, the Shariah interpretation issues on Sukuk play a crucial role because it can contribute to Sukuk default risk (Wilson, 2008).
The absence of domestic rating agencies is another issue facing the market. Saudi Sukuk and bonds markets do not have a local credit rating agency. The major foreign rating agencies have been providing rating services to local companies. The high costs and considerable time required for obtaining initial ratings have discouraged many companies. The rating methodologies of the foreign rating agencies tend to benchmark local companies with their peers in other markets. Sometimes such comparisons lead to unfavourable ratings for the local companies. Issue ratings are a valuable tool for pricing the security in secondary market trading. The establishment of a local rating agency would not only be helpful to the issuers and the investors but would also facilitate the development of an active secondary market.

The credit rating of issuances has become important for financial institutions since the adoption of the Basel III framework for capital adequacy. Credit rating also enables issuers to secure better pricing, increase tenures and attract more investors. The challenge so far is that the majority of domestic issues of Sukuk in Saudi Arabia are not rated. In contrast, the majority of international issuances tend to be rated as for international investors credit rating is a pre-requisite. Credit ratings are important for domestic Sukuk for ascertaining the quality of issues and improving liquidity in the secondary markets.

The Saudi secondary Sukuk and bond market remains shallow and illiquid. After the building of the Sukuk platform in 2009, the total value of Sukuk traded on Tadawul was SAR446 million in 2012. There were only 20 transactions recorded. Just seven Sukuk traded during the year. This low liquidity in the Sukuk market has been a constraint in attracting institutional and retail investors to the Sukuk market.

One of the main challenges facing the Sukuk market is the absence of a comparable benchmark in the form of a yield curve. However, this is undergoing a change. Saudi Arabia issued its first government backed Sukuk in January 2012. The USD$4 billion GACA Sukuk has helped set a benchmark for the pricing of conventional and Islamic bond issues going forward. Sovereign issuances not only provide investors with a much needed pricing benchmark but also act as anchor securities for portfolio management and secondary trading. The Malaysian market, also considered the most liquid, is supported by frequent issuances by the government and its central bank. Such quasi-government-backed issuances will drive demand going forward (Sukuk report, Saudi Hollandi Capital, 2013).

To summarise, those issues may be categorised into six major and inter-connected challenges: the interpretation of the Shariah rules is not adequately standardised; there is an insufficiently developed legal and regulatory framework; the lack of credit ratings for domestic Sukuk; the lack of Sukuk expertise; liquidity risk; the lack of an established benchmark yield curve; and insufficiently developed risk measurement tools within the context of Islamic finance theory. This implies that Sukuk need more research to be a reliable secured investment instrument.
The Saudi Arabian Sukuk Market and Oil Market

Saudi Arabia is the largest oil producer in the world and plays a significant role in stabilising the crude oil market. Through its membership within the Organisation of Petroleum Exporting Countries (OPEC), it has always helped in harmonising demand and supply for oil to ensure that world economic growth rates are sustained to a satisfactory level. Oil was discovered in the Kingdom in 1938 (saudiaramco.com, 2013). Today it is sitting on top of more than a quarter of the world’s proven oil reserves; it has 261 bn barrels of proven oil reserves and up to one trillion of ultimately recoverable oil making the country one of the wealthiest in the world.

It is questionable that there is an association between the oil market and Sukuk market in Saudi Arabia. A lot of research highlights that the financial system in Saudi Arabia is influenced by the oil market, such as Wilson (2009), Akhtar (2010) and Alsaeed (2012).

In the Saudi oil market, “actual oil revenues recorded a rise of 54.3% to SR 1,034 bn in 2011. The share of oil revenues stood at 92.5% of total revenues in 2011, compared to 90.4% in 2012” (SAMA annual report, 2012). Besides, “non-oil revenues rose by 16.9% to SR 83.4 bn in 2011 against a fall of 5.4% in 2012. Their share was 7.5% of total revenues during 2011, compared to 9.6% in 2012” (SAMA annual report, 2012). Figure 4 below shows an overview of Saudi Arabian revenue trends of actual oil and non-oil products.
To shed light on that, the contribution of the oil sector to GDP is positively associated. At 2012 oil prices the contribution to GDP was 58.0% during 2011 against 51.5% in 2012. The oil sector, at 2012 oil prices, registered an increase of 47.7% during 2011 against a growth of 31.7% in 2012. Table 8 and figure 5 below illustrate that contribution.

*Figure 5: Contribution of economic sectors to GDP in 2011*
The contribution from the oil sector it reflected directly in the majority of economic activities in Saudi Arabia including Sukuk market.

“Saudi Arabia had traditionally been considered the sleeping giant of regional debt capital markets, but this has certainly changed in the past eighteen months as we have seen an upsurge in riyal Sukuk issuance,” says Stuart Ure, partner at law firm Clifford Chance in Dubai, 2011” (Oil & Gas News website, 2015).

High oil prices have resulted in large surpluses for Gulf countries and created opportunities for strong economic growth. Thanks to the oil windfall, oil-exporting countries’ cumulative current account surplus increased from 5.4% of GDP in 2002 to 20% in 2006.

The focus of domestic economic policy on the private sector has made the oil-induced economic boom of this period different from the previous ones that the GCC has experienced. Across the GCC, the non-oil sector grew at almost double the rate of the oil sector and, within the non-oil sector the private sector has taken the lead.

Saudi Arabia’s performance is particularly remarkable as the largest economy in the region, representing more than 50% of the GCC, having successfully embarked on a programme of economic diversification and reforms.

Given the size of proposed projects, equity and government budgets alone cannot be the only source of financing for the next phase of the Kingdom’s economic growth and industrialization. Increasingly, reliance will be on debt capital markets for raising funds through Sukuk and other instruments.

During the period 2007-11, over USD200 billion of debt was required across the GCC region to finance infrastructure, petrochemicals and other projects. In the past, syndicated loans have dominated the funding of domestic investment projects.
This is now changing with capital markets gradually increasing in importance and replacing banking as the major source of funding. Thus, Sukuk financing is witnessing strong growth.

After the oil price crisis beginning in late in 2014 Sukuk issuance was affected, slowing its development in Saudi Arabia. The decline in oil prices was recorded from around USD$115 per barrel in June 2014 to an average of USD$80 per barrel in 4thQ 2014 and USD$58 per barrel in 1stQ 2015 (Bloomberg, 2014). The Oil and Gas sector has dominated the Saudi Sukuk market which accounted for 34.3% of total value of Sukuk issued during 2003-2009 (Aljazira Capital report, 2010).

The oil price decline has affected the global economy, including Russia and United States. Overall, lower oil prices are positive for the global economy, especially for advanced economies which are predominantly oil importers. These economies benefit from lower inflation and better consumer sentiment. Nevertheless, economic prospects for oil producing countries remain subdued in the near future, as these economies adjust to lower oil prices and lower export earnings, amongst others. Oil experts and financial professionals have referred that to the oil price war and Saudi Arabia’s role in it. Appendix D presents the story of the recent oil price crisis.

It has observed, after reaching new heights in 2015, global Sukuk issuances for the 1stQ 2015 declined to USD$18.7 billion from USD$24.2 billion in 4thQ 2014. As the global Sukuk market is closely tied to sentiment in the global economic and financial sector and, as most Sukuk issuing countries are among the world’s leading oil producers, the decline in oil prices has been a notable factor affecting the Sukuk market. However, this decline in Sukuk issuances is expected to be temporary as growth drivers for the Sukuk market remain intact, continuing to attract cross-border issuances, issuances from supra-national organisations, sovereign entities and corporate issuers tapping the market for capital expansion and working capital needs. Generally, Sukuk are expected to maintain its status as a viable and competitive source of funding (Global Sukuk report, 2015).

In summary, it can be witnessed that in the long term the Sukuk market in Saudi Arabia may rely on the continuing support of the oil market, with oil revenues continuing to be the main revenue source of the country for a significant period. Diversification of the economy away from oil will provide further opportunities for the growth of the Sukuk market. This may be seen as an interesting study for further empirical research on the relationship between Sukuk and oil indices in Saudi Arabia.

**The Summary**

There are quite a few conclusions that can be drawn from the preceding discussion. First, the Saudi economy is showing a strong economic and financial performance with high growth rates and surpluses in its balance of payments and high profitability in the banking industry. Second, the economy is highly dependent on the oil market. Most of the deficits it had during the slowdown period were caused by drops in oil prices and a decrease in the global demand for oil. Likewise, all surpluses and booms during the Kingdom’s history are due to high
levels of oil prices. Third, the Saudi Arabian financial market is the largest within its area. Fourth, Sukuk is an alternative investment instrument which has created investor interest in the last decades. Many researchers consider Sukuk as a Shariah compliant instrument providing an alternative to the fixed income securities of conventional finance. The performance of Islamic financial institutions and instruments during and after the 2008 financial crisis has provided strong support to the development of the Sukuk industry around the world. Finally, the Saudi Arabian government intends to expand the Sukuk and bond markets using its strong financial position in the global oil market. These conclusions have consequences for the analysis we perform in the thesis, as they indicate the incompleteness and imperfections in the Sukuk market and which should be accounted for. Below more fact information about the Saudi Arabia.
Overview of the Kingdom of Saudi Arabia

- **Official Name:** The Kingdom of Saudi Arabia.

- **Area:** Saudi Arabia occupies four-fifths of the Arabian Peninsula with an area of more than 2,250,000 square kilometers.

- **Phy. Features:** Deserts, Plateaux, Mountains

- **Natural Glimpse**
  Saudi Arabia occupies most of the Arabian Peninsula, and consists of narrow valleys along the coast of the Red Sea (Tuhama plains), followed to the east by mountain ranges extending along the length of the country (the mountains of the Hijaz and Asir, where maximum height exceeds 2000m), followed by deserts and rocky plateaus in the centre (90% of the total space). The largest desert is Alnufood in the north and Arruba Alkhali in the south. In the east, coastal plains stretch wide along the Gulf coast.

- **Population:** 22,678,262

- **Language:** Arabic

- **Religion:** Islam

- **Flag:** Green Banner of Islam, bearing the inscription: "There is no God but God; and Muhammad is his Messenger". The sword was added in 1906, symbolizing the military successes of Islam and of Ibn Saud, founder of the Kingdom of Saudi Arabia

- **Currency:** Saudi Riyal

- **Capital:** Riyadh
o **Head of State:** King Salman bin Abdul Aziz, Custodian of the Two Holy Mosques

o **Highest Court:** Supreme Council of Justice.

o **Administrative Regions:** Riyadh, Makkah, Madinah, Al-Baha, Al-Jouf, Asir, Eastern, Hail, Jizan, Najran, Northern Border, Qasim, Tabouk

o **Location:** The Kingdom of Saudi Arabia is located in the far south-west of Asia. It is bordered by Jordan, and Iraq on the north and northeast, Kuwait, Qatar and the United Arab Emirates on the east, Oman on the southeast, and Yemen on the south. It is also connected to Bahrain by the King Fahd Causeway. The Red Sea lies to its west, and the Persian gulf lies to the northeast

o **Emerging Economy:** Saudi Arabia is fully committed to increasing private sector participation in economic growth. Privatization is a key element of the Kingdom’s economic liberalization and a host of sectors are being opened to the private sector. Telecommunications, electricity, airlines, postal services, railways, port services and water utilities are some of the potential areas for investment.

The Kingdom proposes to invest $200 billion in the oil, gas, electricity and desalination and petrochemical industries. Global oil companies are also considering investing $100 billion over a period of 20 years in the production of natural gas. It is also expected that $6 billion worth of domestic capital will be invested in the tourism sector. Saudi Arabia is a founding member of Convention on Arbitration and is in the process of obtaining World Trade Organisation (WTO) membership. The Kingdom is also a member in numerous other international and regional organizations.

Saudi Arabia’s privatization and economic diversification efforts have gained momentum since the creation of the new Supreme Economic Council (SEC). The purpose behind the creation of the SEC is to speed up economic reforms aimed at opening Saudi markets and ensure stability for investors. The SEC has been officially responsible for the Kingdom’s privatization efforts since early 2001. It plays a supervisory role in the formulation of economic policy, managing the budget and coordinating the implementation of policies between government departments and agencies. The SEC evaluates economic, industrial, agricultural and labour policies to assess their effectiveness and impact on the national economy, diversification of the country’s economic base and the growth of its competitive economic strength.
Economic industries:

- Petrochemicals and Downstream Industries
- Natural gas extraction and distribution
- Water desalination
- Electrical power generation
- Information Technology
- Infrastructure
- Industrial equipment and spare parts
- Mining
- Tourism

Source: Saudi Arabian embassy of United Kingdom, 2015

Pictures from Saudi Arabia

Figure 6: Kingdom of Saudi Arabia location
The Holy Mosque in *Makkah Al-Mukarramah*

The Holy Mosque in *Almadinah Al-Munawarah*
Appendix C:

Malaysian Sukuk Market

Introduction

In Islamic capital finance, Sukuk considered as a hot topic that addressed recently by academics and practitioners. The biggest excises of Sukuk have been accommodated in Malaysia. Malaysian Sukuk Market is the main player and holds the biggest global market share of Sukuk, representing 70% of global Sukuk insurance based in Malaysia. This chapter is link up with pervious chapters by explains the research filed and introducer of the research data place of Sukuk market that will examine later in analysis chapter. Moreover, this chapter explains how Islamic finance emergence in Malaysia and how emergence manner influences on constructing Sukuk market. Also, it is presents the similarities and dissimilarities between Saudi Arabian Sukuk Market and Malaysian Sukuk Market. This chapter concludes by revealing the comparison stage and nature of the environment of the two players of Sukuk market that examines in this research. This chapter is continuing presenting the research filed and introduce of research data place.

Overview of Malaysia

According to the World Bank database (2015) describing Malaysia is a highly open, upper-middle income economy. Malaysia was one of 13 countries identified by the Commission on Growth and Development in its (2008) Growth Report to have recorded average growth of more than 7 percent per year for 25 years or more. Economic growth was inclusive, as Malaysia also succeeded in nearly eradicating poverty: the share of households living below the national poverty line (USD$8.50 per day in 2012) fell from over 50 percent in the 1960s to less than 1.0 percent currently.

From an economy dominated by the production of raw natural resource materials, such as tin and rubber, even as recently as the 1970s, Malaysia today has a diversified economy and has become a leading exporter of electrical appliances, electronic parts and components, palm oil, natural gas and Islamic finance services. After the Asian financial crisis of 1997-1998, Malaysia continued to post solid growth rates, averaging 5.5 percent per year from 2000-2008. Malaysia was hit by the Global Financial Crisis in 2009 but recovered rapidly, posting growth rates averaging 5.7 percent since 2010.

Growth was accompanied by a dramatic reduction in poverty from 49.3 percent in 1970 to 1.0 percent in 2014. However, pockets of poverty remain and income inequality remains high relative to other developed countries: Malaysia’s gini coefficient (the measure ratio of statistical dispersion) of income inequality stood at 0.41 in 2014, compared with 0.31 and 0.33 in the Republic of Korea and Japan (both as of 2010), for example. Real income of the bottom 40 percent of households increased by an average 6.3 percent per year between 2009 and
2012, compared to 5.2 percent for the average household, suggesting the benefits from growth were being shared.

Malaysia’s near-term economic outlook remains overall favorable, despite some risks. The economy has diversified from commodities and the Government has taken steps to broaden the revenue base by introducing a Goods and Services Tax in 2015. Short-term risks include further declines in oil prices and oil related taxes that still account for around 30 percent of public revenues, although this is partially compensated by the removal of fuel subsidies in 2014. Other risks are related to the volatility in capital flows from the normalisation of US monetary policy. The long-term sustainability of this favorable outlook hinges on structural reforms to strengthen medium-term fiscal planning, and to boost capabilities and competition within the economy.

Accelerated implementation of productivity enhancing reforms to increase the quality of human capital and create more competition in the economy will be key for Malaysia to secure a lasting place among the ranks of high income economies. In fact, Malaysia has been working to address these challenges. In 2010, Malaysia launched the New Economic Model (NEM), which aims for the country to reach high income status by 2020 while ensuring that growth is also sustainable and inclusive. The NEM includes a number of reforms to achieve economic growth that is primarily driven by the private sector and moves the Malaysian economy into higher value-added activities in both industry and services.

Malaysia is strategically located at the heart of ASEAN, a region that pulses with a population of over 600 million, total GDP of USD$2.3 trillion, total trade of USD$2.5 trillion and with total FDI of USD$108 billion (World Bank data, 2013). Furthermore, ASEAN and its emerging markets are a gateway between the powerful growth economies of greater Asia, which include China, India, Japan and Korea. The figure below shows the GDP growth movement and prediction.

*Figure 1: Malaysia GDP growth movement and prediction*

![GDP Growth Chart](chart.png)

*Source: World Bank data, 2015*
Islamic Finance in Malaysian Market

Islamic Finance has evolved as a competitive and resilient component of the global financial system. The range of Islamic financial products continues to broaden to meet the diversity and differentiated requirements of businesses and markets. It has been noticeable that Malaysia has marketplace connectivity through each segment of Shariah compliant financial industry with attractive value propositions and opportunities for global institutions, talents, investors, issuers and lastly researchers. Undoubtedly to say that Malaysia is recognised as a leading Islamic financial marketplace that is open to the world by focusing on the following areas: 1) Islamic Capital Market Products and Services Sukuk, Shariah compliant equities and Islamic Fund and Wealth Management. 2) International Islamic Banking. 3) Takaful and re-takaful Products and Services. 4) Professional Ancillary Services in Islamic Finance (Bank Negara, 2015). This leads to say that Islamic finance comprise a community of international and domestic financial institutions dealing with Shariah compliant products and services.

Islamic finance in Malaysia is characterised by a robust regulatory, supervisory, Shariah and legal framework, a deep primary and active secondary Sukuk market, an efficient and transparent price discovery platform, a diverse talent base with global capabilities and an efficient system for multi-currency clearing and settlement.

Historically, Islamic finance in Malaysia began with an Islamic savings institution known as the Pilgrims Management and Fund Board (Lembaga Tabung Haji) in 1969 (Yusoff and Wilson, 2005). As awareness of Shariah compliant finance increased, a step-by-step approach was implemented to develop a comprehensive Islamic financial industry the first full-fledged Islamic bank was established on the back of the Islamic Banking Act 1983. Introduction of Islamic “windows” which allow conventional financial institutions to offer Shariah compliant banking products and services enabled the Islamic banking industry to grow organically. This has spearheaded the creation of a dual-financial system where Islamic finance operates alongside the conventional financial system. The launch of an Islamic interbank money market in 1994 allowed the Islamic banking industry to continue to flourish. Takaful companies were subsequently incorporated under the Takaful Act 1984.

Meanwhile, the Islamic financial industry progressively liberalised over the years, allowing more foreign participation. Notable milestones that mark the internationalisation of Malaysia’s Islamic financial industry include the first Sukuk issuance which was issued by a foreign owned company in 1990, entry of the first foreign Islamic bank from the Middle East in 2005 and establishment of the country’s first Islamic banking subsidiary of a locally incorporated foreign bank in 2008.

The issuance of licences to foreign Islamic financial institutions promoted healthy competition and added to the dynamism of the Islamic financial industry. The market demand was met with highly innovative Shariah compliant products. It has been noticeable that over the years, Malaysia’s Islamic capital market grew deeper and broader as multilateral financial institutions and multinational corporations found Shariah compliant
products such as Sukuk to be an attractive alternative means of raising capital. Progressive liberalisation of the country’s foreign exchange administration rules further buoyed the Sukuk market. Other pioneering innovations that were introduced include the first global sovereign Sukuk in 2002 and the first Islamic real estate trust fund (I-REIT) in 2006. These products received wide acceptance and proved the effectiveness and competitiveness of Islamic finance as a form of financial intermediation. After more than three decades, Malaysia’s Islamic financial industry is now home to a critical mass of international and domestic financial institutions and a diverse range of innovative products and services. Malaysia’s Islamic financial community continues to globalise their business offerings to strengthen economic and financial linkages with other global financial centres. In 2006, the Malaysia’s Islamic finance marketplace (MIFC) initiative was launched to position Malaysia as an international Islamic financial hub. Malaysia is the place to foster Islamic finance business linkages especially within the Asian region, and take advantage of pro-business policies and market incentives.

Furthermore, Malaysia hosts the Islamic Financial Services Board (IFSB) which was described earlier in chapter two. This international prudential standard setting organisation promotes soundness and stability of the global Islamic financial industry by issuing prudential standards and guiding principles. Its international membership base includes regulatory and supervisory authorities, intergovernmental organisations and financial market players. Malaysia continues to contribute to strengthening the soundness of global Islamic finance. Initiatives included participating in a Task Force on Liquidity Management and a Task Force on Islamic Finance and Global Financial Stability. Both of these task forces were established by IFSB and the Islamic Development Bank (IDB). The outcome of these task forces led to the establishment of the International Islamic Liquidity Management Corporation (IILM) to facilitate global cross-border liquidity management; a report with recommendations to strengthen the global financial infrastructure, and the formation of Islamic Financial Stability Forum (IFSF).

In general, the reading of Islamic finance sector in Malaysia provides that it have an environment was realised from a long history of developing Islamic finance, with thought leaders and talents who understand how Shariah and finance work together. It is established and growing business connectivity to the different regions of the world. This global connectivity consists of economic and financial linkages with other global financial centres and the continuing liberalisation of Malaysia’s Islamic financial industry. The figure below presents a summary of Islamic finance marketplace of Malaysia.
In addition, Malaysia enjoyable with the distinction of set up national *Shariah* regulator supervises the Islamic banking sector. As it known that Islamic banking is banking activities, services and products based on *Shariah* principles. In Malaysia market the story is different form other Islamic finance markets. Products and services offered by an Islamic bank in Malaysia must be approved by its national *Shariah* committee. Consisting of scholars that are knowledgeable in modern finance and Islamic principles, the role of a *Shariah* committee encompasses both compliance and advisory functions.

*Source: Malaysia marketplace report, MIFC, 2015*
The Shariah Advisory Council of Bank Negara Malaysia is the apex authority in Malaysia’s Islamic banking industry. This proactive council approves new product structures and deliberates on timely topics and Shariah issues.

There are 16 Islamic banks and 4 International Islamic banks in Malaysia. The Islamic banking assets constitute 24% of Malaysia’s total banking assets as at 1st quarter of 2013, with continual average double-digit growth for the past decade (MIFC, 2015).

A lot of papers such (Rudnyckyj, 2014, Najeeb & Vejzagic, 2013, Yusoff and Wilson, 2005) committed that Malaysia is creates and develop a competitive edge beyond banking operations and products that comply with Shariah growing demand, active government support, consumers’ ability to choose between Shariah compliant and Conventional banking products, as well as efforts made by Conventional banks and Islamic banks to develop their footprints in this arena indicate an increasing global market for Islamic banking. This global industry recorded compounded annual growth rates of 16% from 2006 to 2013.

As an international marketplace for Islamic finance, Malaysia has many innovators and thought leaders in Islamic banking. For example, the first electronic multicurrency commodity trading platform, Bursa ‘Suq Al-Sila’ (BSAS) facilitates financing for Islamic financial institutions and liquidity management. This innovative, one-of-its kind, commodity trading platform, operated by Bursa Malaysia, facilitates cross-border intermediation between institutions across multiple markets. This platform provides a regulated trading framework as well as a Shariah governance model to facilitate uniformity in trade practices and enhance trade volumes. Today 74 members from 10 countries manage their liquidity through Bursa ‘Suq Al-Sila’ (Rudnyckyj, 2014).

Adherence to Shariah is addressed by Malaysia’s Shariah, governance, regulatory and supervisory framework to provide soundness and financial stability, resulting in a high level of investor confidence. This reflects the strengthening the legal framework in Malaysia. Malaysia’s Islamic Financial Services Act 2013 (IFSA) is the culmination of efforts to modernise the laws that govern the conduct and supervision of financial institutions in Malaysia. The new legislation aims to ensure a sound, responsible and progressive Islamic financial system to meet the increasing integration of the Malaysian economy with the region and the world. IFSA 2013 provides the statutory foundation for a Shariah contracts-based regulatory framework in a manner that would facilitate the next level of Islamic banking business, transcending beyond financial intermediation to include real economic sector participation, complete with the consequent regulatory checks and balances, thereby increasing the level of transparency required. The main thrust of IFSA 2013 deals with clarity of regulatory objectives in promoting Shariah compliance and financial stability, which in turn contributes to a high degree of consistency in the regulatory treatment and legal position of Islamic financial transactions.
IFSA 2013 enables greater clarity to be accorded to the obligations and rights of customers under the respective Shariah contracts, which are the key determinants for the unique characteristics of Islamic financial transactions. The Act takes into account the international dimension that Islamic finance will undertake, where specificities unique to the Islamic financial industry, including in terms of control and composition of Islamic financial groups, have been recognised. Recognising the dual financial system in which Islamic finance operates in Malaysia, regulatory parity is ensured for similar areas that are applicable across both Islamic and conventional financial sectors. Collectively, IFSA 2013 and other components of the legal framework provide an additional value proposition in Malaysia’s Islamic finance marketplace in terms of allowing the predictability and enforceability of laws for Islamic financial transactions.

Malaysian Islamic Capital Market

The Islamic Capital Market in Malaysia has grown rapidly and successfully. As compared to other Muslim countries, Malaysia offers a superior infrastructure for and provides on-going government support that provides impetus for the continued growth of the Malaysian Islamic Capital Market. The leadership and support provided by the government through the facilitation of policies and incentives has ensured the successful development of the Islamic Capital Market.

The Malaysian Islamic capital market has experienced phenomenal growth and raised the bar globally for product innovation and financial intermediation (Abdullah, Roudaki and Clark, 2004).

As stated earlier, IFSA 2013 and other legislations acts enables greater environment to capitalise investments in Malaysia under the respective Shariah contracts, refracting the reasons behind the rapid development of capital market in Malaysia. The figure below summarised the market’s development since its emerged in 1990s.
Islamic capital market in Malaysia has a distinctive initiatives building sold and concrete grounding floor to market users. Islamic finance index and Bursa ‘Suq Al-Sila’ are the remarkable initiatives. Here more details and highlights about by Abdullah et al., (2004) Bursa Malaysia (2010) and Securities Commission (2007).

**Islamic Finance Index**

The Islamic Index is an index that tracks the performance of the *Shariah* compliant securities on Bursa Malaysia. The first Islamic equity index was introduced by RHB Unit Trust Management Berhad (a unit trust company that is a subsidiary of RHB Capital Berhad) in May 1996. Subsequently, the Dow Jones Islamic Market Index (DJIM) was launched in February 1999 by Dow Jones and Company, the Kuala Lumpur *Shariah* Index (KLSI) was launched in April 1999 by Bursa Malaysia, and the FSTE Global Islamic Index Series was launched by the FSTE Group in October 1999. The FBM (FTSE Bursa Malaysia) *Shariah* Index replaced the KLSI on 22nd January 2007.

All these indices were launched in order to expand participation of investors who are passionate investing in securities approved in accordance to the Islamic law. These indices allow investors to track and benchmark the performance of *Shariah* compliant securities, and aid investors make better investments decision (Securities Commission, 2007e). The *Shariah* indices measure the performance of Islamic equity, and in April 2006, the
Dow Jones Citigroup Sukuk Index was launched by Dow Jones Indexes and Citigroup Inc. The objectives for the launching of the Sukuk Index are to educate investors about Sukuk, build awareness of the vehicles, improve market transparency and provide a benchmark and a basis for investments and tradable products (Siddiqui, 2008).

**Islamic Financial Market (Bursa Suq Al-Sila’)**

Another milestone project to further strengthen Malaysia’s position as an international Islamic financial hub is the Bursa ‘Suq Al-Sila’, a world first commodity trading platform specifically dedicated to facilitate Islamic liquidity management and financing by Islamic banks (Bursa Malaysia, 2010). One notable features of this market is that it is a fully electronic web-based platform that provides industry players with an avenue to undertake multi-commodity and multi-currency trades from all around the world. In essence it integrates the global Islamic financial and capital markets together with the commodity market.

**Malaysian Sukuk Market**

Demand for an Islamic debt instrument in Malaysia, which accounted for only 7% of total bonds raised in 1999, grew to 25% in 2000 and subsequently to 76% in 2005, primarily due to awareness of alternative funding sources (Ashhari, Chun & Nassir 2009).

Sukuk is one of the most vibrant and significant components in the global Islamic financial industry as it seen earlier in pervious chapters. Sukuk dynamic movement inherited from the development of Malaysian Sukuk Market. The development of Sukuk in Malaysia in the last two decades has transformed the Islamic financial landscape at the national and international levels, and has propelled governments and jurisdictions to accommodate Islamic finance business and transactions by reviewing their existing tax, Shariah, regulatory and legal frameworks. Hence, this leads increasing number of multilateral development institutions, governments, and multinational corporations are using and considering Sukuk as an attractive source of funding. There is also growing acceptance from sophisticated global investors of Sukuk as a viable and competitive asset class. Malaysia represented 59.5% of the global Sukuk outstanding (Bloomberg, 2013), a total value exceeding USD$148 million; and issued 70% of global new Sukuk for the first quarter of 2013 (Bloomberg, 2013), a total of USD$58 million. It is considered to be the most liquid Sukuk market and larger than the country’s corporate Conventional bond market, which is the largest in South-East Asia. Islamic financial institutions have a track record of success in structuring sophisticated and sizeable Sukuk deals that conform to international best practices.

The Malaysian Sukuk market is open to global issuers to tap multicurrency funding. As the top listing destination for Sukuk as at Sept 2013, issuances listed here enjoy high visibility and high demand from global investors. The figure 4 below presents the Sukuk outstanding market share in Malaysia. Tenures for Sukuk in Malaysia span from less than a year to one, two, three, five, seven, ten, fifteen, twenty-five and fifty years.
catering to a diverse investor base. The facilitative environment for Sukuk includes a trading and reporting platform that provides an efficient price-discovery mechanism and a framework with a high level of post-trade transparency. Securities Commission Malaysia has also implemented a market-friendly, efficient approval process for new issuances.

Moreover, in Malaysia, Sukuk are considered financial obligations whereby investors are recognised as creditors and rank equally with Conventional creditors. This provides a level of comfort to investors as they are adequately protected in unforeseen event. The legal and recovery process, guidelines and laws are cohesive and have been market-tested.

“The structuring, approval and issuance process for Sukuk does take longer than a conventional instrument but it is certainly a smooth process whichever route you take. The Malaysian government and regulators are very much in touch with market participants, arrangers and issuers alike; making the nation’s end-to-end debt securities issuance process the envy of many” Said by Raja Arshad Bin Raja (MIFC report, 2015).

Figure 4: Sukuk outstanding in Malaysian market

As it seen in the figure above that Malaysia has a healthy movement trend increasing on Sukuk outstanding. In the other words, Sukuk are the major interest in Malaysia capital market and it is implying how Sukuk superbly penetrating into Malaysian Capital Market.
In terms of size of room of Sukuk issuance Malaysia reached 70% from the global market share in Sukuk issuance, lifting a big gap between Malaysia and other markets to enter the competitive zone. Saudi Arabia catching up and line up behind Malaysia with achieving around 10% of the global Sukuk market share. Furthermore, Sukuk story in Malaysia began earlier in 1990s then increase Sukuk trend flow to reach the global leadership in Sukuk market. It could be summarised this story following the major Sukuk issued in Malaysia by the figure below.
### Figure6: Notable Sukuk Issued in Malaysia

<table>
<thead>
<tr>
<th>Year</th>
<th>1990</th>
<th>2005</th>
<th>2010</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First RM-denominated Sukuk by Shell MDS,</td>
<td>First Islamic Residential Mortgage Backed</td>
<td>Second global sovereign USD Sukuk by the</td>
<td>International Islamic Liquidity Management</td>
</tr>
<tr>
<td></td>
<td>a foreign multinational Company.</td>
<td>Securities by Cagamas MBS.</td>
<td>Government of Malaysia.</td>
<td>Corporation (the IILM)</td>
</tr>
<tr>
<td></td>
<td>RM125 million</td>
<td>5.4x oversubscribed.</td>
<td>USD1.25 billion</td>
<td>Inaugural USD denominated short-term Sukuk.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RM1.8 billion</td>
<td>USD Sukuk by Nomura.</td>
<td>USD490 million</td>
</tr>
<tr>
<td>1996</td>
<td><strong>The Kuala Lumpur</strong> International Airport</td>
<td><strong>First exchangeable USD Sukuk by Khazanah</strong></td>
<td>RM sukuk by Cagamas.</td>
<td>SGD exchangeable Sukuk by Khazanah Nasional.</td>
</tr>
<tr>
<td></td>
<td>Sukuk.</td>
<td>First RM-denominated Sukuk by Cagamas.</td>
<td>2.7x subscription rate.</td>
<td>SGD600 million</td>
</tr>
<tr>
<td></td>
<td>RM2.2 billion</td>
<td>RM60 billion</td>
<td>RM1 billion</td>
<td>USD Emas Sukuk by Sime Darby.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>First global subordinated Sukuk by Maybank.</td>
<td></td>
<td>USD800 million</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7x oversubscribed.</td>
<td>USD300 million</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>USD750 million</td>
<td>First Sukuk by a British multinational company,</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Tesco.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>RM3.5 billion programme</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>First global corporate USD Sukuk by Kumpulan</td>
<td>First RM-denominated Sukuk by</td>
<td>World’s first China Renminbi denominated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Guthrie.</td>
<td>Cagamas.</td>
<td>‘Emas’ sukuk by Khazanah Nasional.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>USD150 million</td>
<td>RM60 billion</td>
<td>RMB500 million (RM246 million)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>First global subordinated Sukuk by Maybank.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>7x oversubscribed.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>USD300 million</td>
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<tr>
<td></td>
<td></td>
<td>First Sukuk by a British multinational company,</td>
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<td></td>
<td></td>
<td>Tesco.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>RM3.5 billion programme</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>First sovereign USD Sukuk by the Government</td>
<td>First RM-denominated Sukuk by Islamic</td>
<td>World’s single largest Sukuk issuance, by PLUS.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>of Malaysia.</td>
<td>Development Bank (IDB).</td>
<td>RM30.6 billion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2x oversubscribed.</td>
<td>RM1 billion programme</td>
<td>Khazanah National issues exchangeable Sukuk that is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>USD600 million</td>
<td></td>
<td>first to be priced at a negative yield and first Malaysian</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>equity-linked deal since 2010.</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>First supranational RM-denominated sukuk by</td>
<td>USD Emas* Sukuk by Petronas.</td>
<td>Noble Group Hong Kong based Sukuk.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>International Finance Corporate, privately owned</td>
<td>6.28x oversubscribed.</td>
<td>RM300 million</td>
<td></td>
</tr>
<tr>
<td></td>
<td>unit of the World Bank.</td>
<td>USD1.5 billion</td>
<td>Golden Assets International Finance Limited Singapore</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RM500 million</td>
<td></td>
<td>based Sukuk programme.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>RM1.5 billion</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Danainfra Malaysia’s first Exchange Traded Bonds and Sukuk (ETBS).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RM300 million</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** MIIFC, 2015
Regulatory Bodies and Regulatory Framework
The development of an Islamic capital market requires an in-depth understanding of the operations of the current capital market and contemporary analyses to fulfil the present day needs of investors, especially Muslims who wish to participate in economic activities in accordance to Shariah principles of Islam (Abdul Rahman, 2007). Therefore, the regulatory bodies play a vital role in the development and operation of the Islamic capital market.

In addition, Malaysia’s financial industry is regulated by four financial and market regulatory authorities; each with a specific role and responsibility:

1) **Bank Negara Malaysia**, the central bank, is a statutory body wholly owned by the Government of Malaysia and responsible for Malaysia’s monetary and financial sector policies. This body also governs the Islamic banking, takaful and re-takaful sectors.

2) **Securities Commission Malaysia** is the regulator for Malaysia’s capital market, both conventional and Islamic finance. It is a self-funding statutory body with investigative and enforcement powers.

3) **Labuan Financial Services Authority (Labuan FSA)** leads and coordinates efforts to regulate and develop Labuan as an international business and financial centre. It also governs Islamic finance activities conducted in Labuan.

4) **Bursa Malaysia** is a fully integrated exchange. In supporting the three financial regulatory authorities of Malaysia, Bursa Malaysia regulates its stakeholders and offers a complete range of exchange-related services including trading, clearing, settlement and depository services.

Furthermore, although that Sukuk considered as a new class of investment instrument that appeared recently, Malaysia treats Sukuk from different approach against other Sukuk market such as Saudi Arabian Sukuk Market the research context interest. The next section presents similarities and dissimilarities between Malaysia and Saudi Arabia in terms of Sukuk industry. Then attempts to screen the gap among both market and draw the comparison frame.

The Summary
This chapter draw the context of Malaysian Sukuk market as the main player in the global base of Sukuk market. This chapter concludes that Malaysian Sukuk market has different mechanism of Sukuk and this enhance the development cycle more than other Sukuk market such as Saudi Arabia. The comparison between both market has been analysed and explained. The next chapter moves from introducing Sukuk market development to other angel of sukuk instrument itself as a new class of investment instrument.

****
Appendix D:

Illustration of Shariah law

<table>
<thead>
<tr>
<th>Definition</th>
<th>Islamic law is covering both civil and criminal justices as well as regulating individual conduct both personal and moral. The custom-based body of law is based on the Qur’an and the religion of Islam. Therefore, it could be said that Muslim states are theocracies, religious texts are Law, the latter distinguished by Islam and Muslims in their application, as Shariah Law.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shariah Law sources</td>
<td>Shariah Law comes from a combination of sources including the Qur’an (the Muslim holy book), the Hadith (sayings and conduct of the prophet Muhammad) and fatwas (the rulings of Islamic scholars).</td>
</tr>
<tr>
<td>What does it cover?</td>
<td>All aspects of a Muslim's life are governed by Shariah. For example, Shariah deals with many topics addressed by secular law, including crime, politics and economics, as well as personal matters such as business trades, hygiene, diet, prayer, and fasting.</td>
</tr>
<tr>
<td>Example topics of Shariah Law</td>
<td>Purification, Prayer, Funeral prayer, Taxes, Fasting, Pilgrimage, Trade, Inheritance, Marriage, Divorce, and Justice In some areas, there are substantial differences in the law between different schools of Fiqh, countries, cultures and schools of thought.</td>
</tr>
</tbody>
</table>

*Sources: Razack, 2007.*
### Appendix E:

#### Summary of recent literature on Sukuk

Summary of common studies on *sukuk*.

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Type of research</th>
<th>Objectives</th>
<th>Methodology</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rohim and Shereeza</td>
<td>Nature of <em>sukuk</em>;</td>
<td>Analyze the thought of Abu Hanifah and Imam Shafi’i on <em>sukuk</em></td>
<td>Descriptive analysis.</td>
<td>The study finds that both schools of thought in essence accepted <em>sukuk</em> as an Islamic financial instrument</td>
</tr>
<tr>
<td>Usmani (2008)</td>
<td>Nature of <em>sukuk</em>;</td>
<td>Analyze the mechanisms <em>sukuk</em> and on the extent which these comply with precepts and principles Islamic jurisprudence.</td>
<td>Descriptive analysis.</td>
<td>The study proposes that <em>sukuk</em> be issued for new commercial and industrial ventures. The returns of enterprises should be returned to <em>sukuk</em> holders regardless of the amount after costs.</td>
</tr>
<tr>
<td>Rosly and Sanusi</td>
<td>Nature of <em>sukuk</em>;</td>
<td>Analyze pertinent issues the creation of Islamic in Malaysia and analyze underlying reasons the rejection of <em>bay’ al-</em> and <em>bay’ al dayn</em>.</td>
<td>Descriptive analysis.</td>
<td>The study finds no significant Shari’ah justification of <em>bay’ al-inah</em>. While the trading of Islamic bonds at a discount using <em>bay’ al-dayn</em> has been found unacceptable by the majority of ulema’ (Jumhur Ulama’) including al-Shafi’i.</td>
</tr>
<tr>
<td>Cakir and Raei (2007)</td>
<td>Nature of <em>sukuk</em>;</td>
<td>Analyze the difference between <em>sukuk</em> and eurobonds for the same issuer. This paper the impact of bonds according to Islamic principles (<em>sukuk</em>), on the cost and risk structure of investment portfolios.</td>
<td>Value-at-risk (VaR) based on delta-normal method and Monte simulation method.</td>
<td>This paper shows that <em>sukuk</em> – contrary to earlier literature – are different types of instruments from conventional bonds, as evidenced by their different price behavior. The analysis employing the delta-normal as well as Monte-Carlo simulation methods implies such gains are present and in certain cases very significant.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Type of research</th>
<th>Objectives</th>
<th>Methodology</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Godlewski, Turk-Ariss,</td>
<td>Nature of <em>sukuk</em>;</td>
<td>Examine whether announcements of <em>sukuk</em> conventional bond issues lead to significant returns for the issuers Malaysian listed bonds and <em>sukuk</em>.</td>
<td>A standard market estimate abnormal around the event date security issue.</td>
<td>The study finds the absence of significant stock market reaction to conventional bond announcements negative reaction to <em>sukuk</em> issues and, as a corollary, a significant difference between stock market reactions to <em>sukuk</em> and conventional bond issues. The results suggest that <em>sukuk</em> instruments are priced significantly differently and that their yields are not Granger-caused by conventional security yields or vice versa. This empirical finding does not support the market’s current practices based on the assumption that <em>sukuk</em> are like normal bonds.</td>
</tr>
<tr>
<td>Weill (2010)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ariff and Safari (2015)</td>
<td>Nature of <em>sukuk</em>;</td>
<td>Examine whether <em>sukuk</em> instruments are conventional bonds as practiced by the market.</td>
<td>Statistical and causality using a large traded data on <em>sukuk</em> and bonds.</td>
<td></td>
</tr>
<tr>
<td>Jobst, Kunzel, Mills,</td>
<td>Operational aspects of Qualitative</td>
<td>Review the current state of the <em>sukuk</em> market, pertinent legal and implications of Shari’ah compliance on the configuration of <em>sukuk</em> issuance, and informs debate about the <em>sukuk</em> issuance by issuers.</td>
<td>Descriptive analysis.</td>
<td>The study suggests that administrative considerations can lead to additional costs while limiting fiscal flexibility. The initial structuring and issuance costs of <em>sukuk</em> are likely to be higher than they are for a standard security. Sovereign issuers’ revenues may need to be ring-fenced, effectively limiting fiscal flexibility. Non-Islamic sovereigns, in particular, would need to consider the necessary organisational changes needed to administer the Shari’ah-compliant structure.</td>
</tr>
<tr>
<td>(2008)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kordvani (2009)</td>
<td>Operational aspects of Qualitative</td>
<td>Examines the key of <em>sukuk</em> within the of the Shi’a <em>fiqh</em> (jurisprudence) and the principles of contract Iran, which is based primarily on the Shariah</td>
<td>Descriptive analysis.</td>
<td>An examination of Shi’a jurisprudence on the contract of <em>ijarah</em> (leasing contract) shows that such an adjustment can be accomplished in Iran. It has been shown how obstacles to the legitimacy of lease-to-purchase agreements have been overturned by relying on a more flexible interpretation of contractual conditions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(continued on next page)
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Type of research</th>
<th>Objectives</th>
<th>Methodology</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rahman (2003)</td>
<td>Operational aspects of Qualitative</td>
<td>Examines contemporary accounting regulatory on Islamic bonds or private debt securities or <em>sukuk</em>. Investments in Islamic bonds (<em>sukuk</em>) rise to a number of accounting and reporting issues.</td>
<td>Descriptive analysis.</td>
<td>The study suggests that a proper development of the Islamic financial market requires a well-regulated Islamic financial instrument that is in accordance with Islamic accounting regulations. It requires a sound accounting and reporting standard for Islamic financial instruments that meet the requirements of Shari’ah and can be practiced.</td>
</tr>
<tr>
<td>Fathurahman and (2013)</td>
<td>Operational aspects of Quantitative</td>
<td>Analyze the ratio yields on <em>sukuk</em> and conventional bonds model calculations yield maturity and portfolio optimization model</td>
<td>Basic statistical tests <em>sukuk</em> and conventional bonds in Indonesia.</td>
<td>The paper concludes that the mean yield to maturity of <em>sukuk</em> is greater than the mean yield of conventional bonds. In term risks, <em>sukuk</em> standard deviation is relatively larger than the standard deviation of conventional bonds.</td>
</tr>
<tr>
<td>Wijnbergen and (2013)</td>
<td>Operational aspects of Quantitative</td>
<td>Examine the resolution process following not the reasons the was triggered and the <em>sukuk</em> (near) defaults Islamic finance</td>
<td>Case studies of four defaults.</td>
<td>These case studies make clear that most of the problems that triggered defaults or blocked smooth resolution of distress afterward arose from ill-defined property rights and conceptual mismatches between relevant jurisdictions and the legal structures chosen. In most cases, the problems can be traced back to clauses and structures that made the <em>sukuk</em> more like conventional bonds.</td>
</tr>
<tr>
<td>Tariq and Dar (2007)</td>
<td>Operational aspects of Qualitative</td>
<td>Assess the <em>sukuk</em> and analyze the various underlying the Islamic sovereign and corporate <em>sukuk</em> structures.</td>
<td>Descriptive analysis.</td>
<td>The study highlights that different Shari’ah perceptions could be a risk, which may affect <em>sukuk</em> pricing. Furthermore, through Shari’ah-compatible</td>
</tr>
<tr>
<td>Researcher(s)</td>
<td>Methodology</td>
<td>Objective</td>
<td>Approach</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
<td>----------</td>
<td>----------</td>
<td></td>
</tr>
<tr>
<td>Shafi, Ariffin, and Salamudin (2013)</td>
<td>Operational aspects of Qualitative Sukuk</td>
<td>Identify strategies to Sukuk risk, propose model with embedded and a mathematical compute returns before conversion</td>
<td>Descriptive analysis. The study suggests the application of Sukuk with embedded options as to mitigate the risk faced by Sukuk holders. Embedded options are a way to mitigate the risk, so the study proposes using a real asset, such as real estate.</td>
<td></td>
</tr>
</tbody>
</table>

(continued on next page)
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Type of research</th>
<th>Objectives</th>
<th>Methodology</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilson (2008)</td>
<td>Operational aspects of Qualitative</td>
<td>Examines the market for usage of sukuk, notably tools for liquidity management. There is an analysis of different structures from a perspective.</td>
<td>Descriptive analysis.</td>
<td>The study proposes sukuk based on participatory structures, with risk sharing by investors, as a way forward. The risk with these proposed structures is of variable returns rather than of default, which may well be more acceptable to informed investors in any case.</td>
</tr>
<tr>
<td>Alam, Hassan, and (2013)</td>
<td>Operational aspects of Quantitative</td>
<td>Examines the impact of sukuk and conventional bonds announcement on shareholder wealth and determinants using 79 and 87 conventional over the period of 2004–2012 in six Islamic financial market.</td>
<td>Event study calculate the abnormal returns of sukuk or conventional bond and a multivariate regression.</td>
<td>The study shows that from a short-run perspective, the effect of announcement of sukuk on firm value is negative, while the effect of announcement of conventional bond is positive for all periods except for the post-crisis period. Therefore, in spite of having a religious motivation to issue sukuk, the negative effect might hinder firms in raising funds for sukuk.</td>
</tr>
<tr>
<td>Ashhari, Chun, and (2009)</td>
<td>Operational aspects of Quantitative</td>
<td>Study the impact of bond and conventional announcement on shareholder wealth for listed on the Bursa (stock market) for the 2001 to 2006.</td>
<td>A standard event study methodology with beta refinement using method.</td>
<td>The study finds that there is a wealth effect on sukuk issues announcement but not for conventional bond announcement. The study further establishes that the size of the bond offering is a significant factor in stock returns for both sukuk and conventional bonds, but the sign for sukuk was negative and contrary to that for conventional bonds.</td>
</tr>
<tr>
<td>Ahmad and Rahim</td>
<td>Operational aspects of Quantitative</td>
<td>Investigate whether the market reacts to the issuance of sukuk structures (ijarah musharakah) in</td>
<td>Event study using cumulative abnormal return on symmetric and events.</td>
<td>The results support the hypothesis of positive market reaction on FTSE KLCI index after ijarah and musharakah issuance in Malaysia. The positive</td>
</tr>
</tbody>
</table>
market reactions can be interpreted in two ways. First, the market can readily distinguish the news. Second, there are confidence effects that shareholders wealth will be increased through the issuance of *ijara* and *musharakah sukuk.*

The study indicates that *sukuk* default in Malaysia may not pose a significant threat to the local capital market. However, it does have an impact on the overall reputation of Malaysia as the hub for global Islamic finance.

*(continued on next page)*
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Type of research</th>
<th>Objectives</th>
<th>Methodology</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibrahim and Minai</td>
<td>Sukuk and economic development</td>
<td>Examine the wealth Islamic debt issuance determinants.</td>
<td>Event study analysis cross-sectional</td>
<td>The study finds that investors reacted positively to the announcement of Islamic debt issues, while they are indifferent to the announcement of conventional issues.</td>
</tr>
<tr>
<td>Danila and Malangkucecwara</td>
<td>Sukuk and economic development</td>
<td>Examine factors that retail sukuk investment individual investors.</td>
<td>Descriptive analysis</td>
<td>The study supports the important role of Muslim governments in financing the budget through domestic sukuk issuance, but not to be exposed to exchange rate risks related to sukuk denominated in nondomestic currency. The result also suggests that the rate of return (mudarabah deposit) and foreign exchange rate have an impact on sukuk price.</td>
</tr>
<tr>
<td>Ahmad, Daud, and (2012)</td>
<td>Sukuk and Economic Development;</td>
<td>Examine influences on sukuk in Malaysia based on aggregate level data</td>
<td>Vector autoregressive (VAR)</td>
<td>The findings indicate that the causality runs from sukuk to GDP. In the short-horizon, sukuk is driven by its own dynamics. The study argues that since sukuk issuance Granger-causes GDP, policy makers should introduce policies to modernize the functional aspects of Islamic capital market.</td>
</tr>
<tr>
<td>Said and Grassa (2013)</td>
<td>Sukuk and economic development;</td>
<td>Investigate the influence the macroeconomic the construction of a structure of sukuk in the most sukuk issuers’ namely: Saudi Arabia, Kuwait, UAE, Bahrain, Qatar, Indonesia, Brunei, Pakistan, and Gambia.</td>
<td>Multivariate regression</td>
<td>The results show that macroeconomic factors—GDP per capita, Muslim population, economic size and trade openness as well as regulatory quality—have a positive impact on the development of sukuk market. However, since the amount of sukuk issued has declined considerably in recent</td>
</tr>
</tbody>
</table>
years, the financial crisis has affected negatively the development of sukuk market. Sukuk investment using *ijarah* principle is found to be a better investment alternative than *musharakah mutanaqisah* principle, regardless of the number of years of the sukuk, as long as it is a long-term tenure. However, for short-term tenure, the latter is preferred based on the amount of profits generated

*Source: Zulkhibri (2015) and updated by the author (2016)*

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**AbduJalil & Abdulrahman (2012)**

**Nature of sukuk; Quantitative**

Comparison of the profits obtained by using *ijarah* and *Musharakah Mutanaqisah* principles with long-term.

Event study methodology used to calculate profit. This calculation model is based on *ijarah* and *musharakah mutanaqisah* principles. Formulas are derived from *ijarah* and *musharakah* and *mutanaqisah* principles used in sukuk.
Appendix F:
(Related to chapter 7): Graphs and tables of regression analysis between Sukuk indices and conventional bonds indices

Figure 1: All maturities indices of Sukuk and Conventional bonds graph

Figure 2: All maturities indices of Sukuk and Conventional bonds Histogram relationship
Table 1 Correlations test of Sukuk index over conventional bond index

<table>
<thead>
<tr>
<th>Correlations</th>
<th>DJSUKTXR</th>
<th>JGAGGUSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DJSUKTXR</td>
<td>1.000</td>
<td>.310</td>
</tr>
<tr>
<td>JGAGGUSD</td>
<td>.310</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DJSUKTXR</td>
<td>.</td>
<td>.000</td>
</tr>
<tr>
<td>JGAGGUSD</td>
<td>.000</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DJSUKTXR</td>
<td>127</td>
<td>127</td>
</tr>
<tr>
<td>JGAGGUSD</td>
<td>127</td>
<td>127</td>
</tr>
</tbody>
</table>

Table 2 Summary output of Regression Statistics Test of Sukuk index and conventional bond index for overall period

<table>
<thead>
<tr>
<th>Model Summary(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), JGAGGUSD

b. Dependent Variable: DJSUKTXR

<table>
<thead>
<tr>
<th>ANOVA(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Regression</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

a. Dependent Variable: DJSUKTXR

b. Predictors: (Constant), JGAGGUSD
Coefficientsa

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>95.0% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper Bound</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>.002</td>
<td>.002</td>
<td>1.292</td>
<td>.199</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.199</td>
<td></td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.006</td>
<td></td>
<td>.006</td>
</tr>
<tr>
<td>2</td>
<td>JGAGGUSD</td>
<td>.412</td>
<td>.113</td>
<td>.310</td>
<td>3.642</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.000</td>
<td></td>
<td>.188</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.635</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: DJSUKTXR

On the other side, sub-indices based on maturity factor shows different regression analysis results as presents below

*Figure 3: Overall period of 1-3 years sub-indices of Sukuk and Conventional bonds graph*
Figure 4: overall period of 1-3 years sub-indices of Sukuk and Conventional bonds Histogram relationship

Table 3: Correlations test of overall period of 1-3 years sub-indices Sukuk over conventional bond.

<table>
<thead>
<tr>
<th>Correlations</th>
<th>DJSukuk1.3Yrs</th>
<th>FECM3.1.3Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DJSukuk1.3Yrs</td>
<td>1.000</td>
<td>-.038</td>
</tr>
<tr>
<td>FECM3.1.3Yrs</td>
<td>-.038</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DJSukuk1.3Yrs</td>
<td>.</td>
<td>.333</td>
</tr>
<tr>
<td>FECM3.1.3Yrs</td>
<td>.333</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>128</td>
<td>128</td>
</tr>
</tbody>
</table>

Table 8 Summary output of Regression Statistics Test of overall period of 1-3 years sub-indices Sukuk and conventional bond

<table>
<thead>
<tr>
<th>Model Summary^b</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>R</td>
<td>R Square</td>
</tr>
<tr>
<td>1</td>
<td>.038^a</td>
<td>.001</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), FECM3.1.3Yrs
b. Dependent Variable: DJSukuk1.3Yrs
ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.000</td>
<td>1</td>
<td>.000</td>
<td>.186</td>
<td>.667&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>1 Residual</td>
<td>.035</td>
<td>126</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.035</td>
<td>127</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: DJSukuk1.3Yrs
b. Predictors: (Constant), FECM3.1.3Yrs

Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.004</td>
<td>.001</td>
<td>.011</td>
<td>.012</td>
</tr>
<tr>
<td>1 FECM3.1.3Yrs</td>
<td>-.025</td>
<td>.057</td>
<td>-.038</td>
<td>-.432</td>
</tr>
</tbody>
</table>

a. Dependent Variable: DJSukuk1.3Yrs

*Figure 5: Overall period of 3-5 years sub-indices of Sukuk and Conventional bonds graph*
Figure 6: overall period of 3-5 years sub-indices of Sukuk and Conventional bonds Histogram relationship

Table 9: Correlations test of overall period of 3-5 years sub-indices Sukuk over conventional bond.

<table>
<thead>
<tr>
<th></th>
<th>Sukuk3.5Yrs</th>
<th>FECM5.3.5Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>Sukuk3.5Yrs</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>FECM5.3.5Yrs</td>
<td>-.065</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>Sukuk3.5Yrs</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>FECM5.3.5Yrs</td>
<td>.233</td>
</tr>
<tr>
<td>N</td>
<td>Sukuk3.5Yrs</td>
<td>128</td>
</tr>
<tr>
<td></td>
<td>FECM5.3.5Yrs</td>
<td>128</td>
</tr>
</tbody>
</table>
**Table 10 Summary output of Regression Statistics Test of overall period of 3-5 years sub-indices Sukuk and conventional bond**

**Model Summary**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.065*</td>
<td>.004</td>
<td>-.004</td>
<td>.01979</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), FECM5.3.5Yrs  
b. Dependent Variable: Sukuk3.5Yrs

**ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.000</td>
<td>1</td>
<td>.000</td>
<td>.535</td>
<td>.466b</td>
</tr>
<tr>
<td>1</td>
<td>.049</td>
<td>126</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>.050</td>
<td>127</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.050</td>
<td>127</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Sukuk3.5Yrs  
b. Predictors: (Constant), FECM5.3.5Yrs

**Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.003</td>
<td>.002</td>
<td></td>
<td>.077</td>
</tr>
<tr>
<td>FECM5.3.5Yrs</td>
<td>-.082</td>
<td>.112</td>
<td>-.065</td>
<td>-.732</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Sukuk3.5Yrs
Figure 7: Overall period of 5-7 years sub-indices of Sukuk and Conventional bonds graph

Figure 8: overall period of 5-7 years sub-indices of Sukuk and Conventional bonds Histogram relationship
Table 11: Correlations test of overall period of 5-7 years sub-indices Sukuk over conventional bond.

Correlations

<table>
<thead>
<tr>
<th></th>
<th>Sukuk5.7Yrs</th>
<th>FECM5.5.7Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sukuk5.7Yrs</td>
<td>1.000</td>
<td>.059</td>
</tr>
<tr>
<td>FECM5.5.7Yrs</td>
<td>.059</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sukuk5.7Yrs</td>
<td>.312</td>
<td>.312</td>
</tr>
<tr>
<td>FECM5.5.7Yrs</td>
<td>.312</td>
<td>.312</td>
</tr>
<tr>
<td>N</td>
<td>71</td>
<td>71</td>
</tr>
</tbody>
</table>

Table 12 Summary output of Regression Statistics Test of overall period of 5-7 years sub-indices Sukuk and conventional bond

Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.059*</td>
<td>.004</td>
<td>-.011</td>
<td>.02801</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), FECM5.5.7Yrs
b. Dependent Variable: Sukuk5.7Yrs

ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.000</td>
<td>1</td>
<td>.000</td>
<td>.244</td>
<td>.623b</td>
</tr>
<tr>
<td>1</td>
<td>Residual</td>
<td>69</td>
<td>.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.054</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Sukuk5.7Yrs
b. Predictors: (Constant), FECM5.5.7Yrs

tCoefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.001</td>
<td>.003</td>
<td></td>
<td>.388</td>
</tr>
<tr>
<td>1</td>
<td>FECM5.5.7Yrs</td>
<td>.130</td>
<td>.263</td>
<td>.059</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Sukuk5.7Yrs
Figure 9: Overall period of 7-10 years sub-indices of Sukuk and Conventional bonds graph

Figure 10: Overall period of 7-10 years sub-indices of Sukuk and Conventional bonds Histogram relationship
Table 1: Correlations test of overall period of 7-10 years sub-indices Sukuk over conventional bond.

<table>
<thead>
<tr>
<th>Pearson Correlation</th>
<th>Sukuk7.10Yrs</th>
<th>FECM10.7.10Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sukuk7.10Yrs</td>
<td>1.000</td>
<td>-.045</td>
</tr>
<tr>
<td>FECM10.7.10Yrs</td>
<td>-.045</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 14 Summary output of Regression Statistics Test of overall period of 7-10 years sub-indices Sukuk and conventional bond

<table>
<thead>
<tr>
<th>Model Summaryb</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>.045a</td>
<td>.002</td>
<td>-.008</td>
<td>.04602</td>
</tr>
</tbody>
</table>

\[a\] Predictors: (Constant), FECM10.7.10Yrs

\[b\] Dependent Variable: Sukuk7.10Yrs

ANOVAa

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.000</td>
<td>1</td>
<td>.000</td>
<td>.208</td>
<td>.649b</td>
</tr>
<tr>
<td>Residual</td>
<td>.220</td>
<td>104</td>
<td>.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.221</td>
<td>105</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[a\] Dependent Variable: Sukuk7.10Yrs

b. Predictors: (Constant), FECM10.7.10Yrs

Coefficiensa

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.004</td>
<td>.004</td>
<td>.908</td>
<td>.366</td>
</tr>
<tr>
<td>FECM10.7.10Yrs</td>
<td>-.191</td>
<td>.419</td>
<td>-.456</td>
<td>.649</td>
</tr>
</tbody>
</table>

\[a\] Dependent Variable: Sukuk7.10Yrs

***
Appendix G:

(Related to chapter 7): Case study of the Saudi Arabian market

The main body of the chapter 7 was concerned the comparison of the risk and return profiles of global Sukuk and conventional bond indices. It is of interest to examine Sukuk performance in a domestic context, by a case study conducted on the Saudi Arabian Sukuk market, comparing the Sukuk local market performance with the global Sukuk index performance.

Formulas for fair value and duration

To do so, similar to the practice for conventional bonds, Sukuk values are directly related to cash flows and these cash flows are discounted at the yield rate (YR) to find the fair value and duration of Sukuk. The periodical payment received is the cash flow. The period payment for each year is computed by multiplying the face value of the Sukuk by the coupon rate (CR). At maturity, the holder will get back his money invested earlier along with the final periodic payment. The principal amount returned is known as the redemption value.

The formula is: \[ C = FV \times CR \], where:

- \( C \) = Cash Flow (interest)
- \( FV \) = Face Value
- \( CR \) = Coupon Rate.

It is questionable whether those techniques applicable to conventional bonds can be applied to Sukuk. Helmi, Munisamy and Ramasamy (2011) justified that the techniques are applicable to both because, whether it is Sukuk or conventional bonds, both have a yield rate. It is only in coupon rates that the difference exists. The coupon rate is based on time for interest, but for Sukuk it is profit based. As the yield rate measures the rate of return, it is the common parameter for evaluating both Sukuk and conventional bonds.

Interests or profits accrue in all years till maturity and in the final year the redemption value is also received. Therefore the cash flows are: \( C_1, C_2, \ldots, C_n + RV \), where:

- \( RV \) = Redemption Value,
- \( k \) = Life of the bond.

The above cash flows are to be discounted at YR and added to get the fair value of the Sukuk.

\[
\eta = \frac{C_1}{(1+Y)} + \frac{C_2}{(1+Y)^2} + \ldots + \frac{C_n}{(1+Y)^n} + \frac{RV}{(C1+Y)^n}
\]
\[ \eta = \sum_{k=1}^{n} \frac{CRK}{(1+Y)^k} + \frac{RV}{(1+Y)^n} \]

\[ \eta = \text{Total discounted cash flow or fair value of the bond} \]

The total present value of the cash flows is the fair value in the secondary market. The present values (discounted cash flows) of cash flows are to be multiplied by the time (years) and multiplied for computing duration.

\[ \xi = \frac{C_1 \times t_1}{(1+y)} + \frac{C_2 \times t_2}{(1+y)^2} + \ldots + \frac{(C_n + RV) \times t_n}{(1+y)^n} \]

\[ t = 1, \ldots, n \]

\[ \xi = \text{Total of discounted value and time} \]

\[ \xi = \sum_{k=1}^{n} \frac{C_k \times t_k + RV \times t_n}{(1+y)^k} \]

Now duration can be computed with the above two totals of cash flow.

\[ D = \frac{\xi}{\eta} \]

\[ D = \text{Duration (weighted average life of the bond)} \]

Duration gives the slope of the price yield curve but not the expected drop in the value of Sukuk. To calculate the loss or gain modified duration is calculated, as follows:

\[ MD = \frac{D}{(1+y)} \]

\[ MD = \text{Modified duration} \]

Any change in the Sukuk value is proportional to modified duration. This parameter is the direct measure, which quantifies the value fall or value increase when YR changes. The value loss or value gain can be easily calculated with the help of modified duration as stated below. In accordance with conservative accounting principles, the future losses are to be accounted for while prospective profits are ignored. Hence modified duration is always quoted with a minus.

\[ \frac{dp}{p} = -MD \times dy \]

Where:

\[ Dp = \text{change in value of the bond} \]

\[ MD = \text{Modified duration} \]

\[ Dy = \text{Change in YR} \]

In addition, statistical calculations such as mean, median and standard deviation will be used. These statistical measurements will enhance the measuring of the financial ratios.
Results and discussion of Saudi Arabian Sukuk market

Saudi Arabian Sukuk market is one of the core market of the Sukuk industry. It has developed rapidly over the last 8 years, where the Sukuk secondary market officially opened in 2009, operated by the Saudi Arabian Capital Market Authority.

Demand for Sukuk has flourished in the Saudi market. Saudi Arabia, the first hub for Sukuk in the GCC, had already smashed records in 2012 with its international and domestic Sukuk issuances, as mentioned in previous studies such as Wilson (2008). The strength of the Saudi market is derived from the Saudi obligator of Sukuk issuance. The positive economic environment in the Kingdom in 2012 led to successful repayment of three Saudi Sukuk issues: Saudi Basic Industries Corporation (SABIC) repaid its SR8bn Sukuk ahead of maturity; Dar Al-Arkan repaid its $1bn benchmark Sukuk and Saudi Binladin Group repaid a SR1 billion Sukuk. The most frequent type of Sukuk exercised in the Saudi market is Sukuk Mudarabah. This is an equity-based model which is considered to have a lower risk profile than other types of Sukuk. For example, credit risk is considered higher in debt-based models such as Sukuk Ijarah than equity-based models such as Sukuk Mudarabah. These findings further support the idea of Sukuk structures risk matrix presented in Chapter 4.

The results show that YRs reveal the true profitability of a financial asset like bonds, whether Islamic or conventional. The duration provides information on the sensitivity of the financial assets as financials lose value when YR goes up. If the sensitivity is known, the expected loss could be hedged easily. The descriptive statistics of the Dow Jones Global Sukuk index and the Saudi Arabian Sukuk index are given in the table below.

Table 1: Descriptive Statistics of the Dow Jones Global Sukuk index and the Saudi Arabian Sukuk index

<table>
<thead>
<tr>
<th>Index</th>
<th>Average Coupon</th>
<th>YTM</th>
<th>Duration</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DJ Global Sukuk</td>
<td>4.1</td>
<td>2.24</td>
<td>4.1</td>
<td>3.9</td>
<td>0.915</td>
</tr>
<tr>
<td>Saudi Arabian Sukuk</td>
<td>2.1</td>
<td>5</td>
<td>6.44</td>
<td>2.1</td>
<td>0.994</td>
</tr>
</tbody>
</table>

The Saudi index has a higher YTM and longer duration; the average Sukuk in the Saudi market has a maturity redemption between 5-7 years. This is in line with the theoretical risk and return relationship of conventional finance. Both indices represent a positive return and reflect the profitability of Sukuk as an investment instrument.
The table below provides the calculation of the probability of the difference in YR between the Dow Jones Global Sukuk market and the Saudi Arabian Sukuk market being equal to 0. The YR P-value is 0.79; it is significant at the 10% level of significance. It implies that there are differences in YRs between the global market and the Saudi market.

Table 2: Calculation of P-value for the Dow Jones Global Sukuk index and the Saudi Arabia Sukuk index

<table>
<thead>
<tr>
<th>P-value</th>
<th>t Stat</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield</td>
<td>0.79</td>
<td>0.2695</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.38</td>
</tr>
</tbody>
</table>

***
**Appendix I:**

**Comparison between Sukuk, Conventional Bonds and Shares**

Based on the literature, this is a summary of the top five differences between those three asset instruments presented as follows:

<table>
<thead>
<tr>
<th>No.</th>
<th>Sukuk</th>
<th>Conventional Bonds</th>
<th>Shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Indicate ownership of an asset</td>
<td>Indicate a debt obligation</td>
<td>Indicate ownership of an asset</td>
</tr>
<tr>
<td>2</td>
<td>Shariah compliant</td>
<td>Non-Shariah compliant</td>
<td>It is compliant to Shariah according to the status of the stock</td>
</tr>
<tr>
<td>3</td>
<td>Return generation mechanism relies on the underlying asset</td>
<td>Return generation mechanism relies on the credit rating</td>
<td>Return generation mechanism relies on the company profit generation</td>
</tr>
<tr>
<td>4</td>
<td>The Sukuk certificate life is not linked to the life of the Sukuk issuer and ends at the redemption date</td>
<td>The conventional bond certificate life is not linked to the life of the Sukuk issuer and it ends at the redemption date</td>
<td>The share’s life and validity is linked to the life of the company issuer and does not have a redemption date if the company issuer continues as a legal entity</td>
</tr>
<tr>
<td>5</td>
<td>At financial liquidation, Sukuk holders re paid in line with the rights determined by the legal status and structure of the Sukuk</td>
<td>At financial liquidation, conventional bond holders are paid in line with their ranking with other creditors</td>
<td>At financial liquidation, share holders receive the residue after all other financial obligations have been paid in full</td>
</tr>
</tbody>
</table>