



LUND UNIVERSITY
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Understanding Islamic Finance

Comparative Analysis on Advantages and Disadvantages between *Sukuk* and Bonds

By

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Abstract

Islamic finance has been growing tremendously for the past years. On the other hand, the understanding of it, is still limited compared to the conventional finance. Claims that Islamic finance is more resistant to crisis compared to the conventional finance is analysed in this thesis through the comparison between *Sukuk* and bond financing. There are two aims of this thesis. The first aim is to study the advantages and disadvantages between *Sukuk* and conventional bonds. The second is to explore specific advantages and disadvantages of *Sukuk* during certain market conditions, such as financial crisis of 2008.

This thesis found that even when *Sukuk* and conventional bonds have fundamental differences, they are exposed to the same risk and therefore have the same reaction to the market's sentiments. Specifically during the financial crisis of 2008, other factors affected the performance of *Sukuk* price, such as the potential default of a prominent company and the fall of oil price.

Keywords: Islamic finance, *Sukuk*, bonds, financial crisis of 2008, comparative analysis.

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1 Introduction

This chapter describes the background and inspiration behind the topic, and further elaboration of the purpose. This chapter ends with study limitations and an outline of the research structure.

1.1 Background

Decades after Islamic finance gained a foothold outside the realm of discourse, this new system is still less familiar for the people from the western world. It has been more than 30 years since the establishment of the first modern Islamic bank on 1975 in Dubai, and more than 20 years since the first issuance of an Islamic financial instrument called *Sukuk* in Malaysia. The Islamic financial industry is growing rapidly as many countries adopt it, either as the sole system or concurrently with the conventional financial system. More countries, including non-Islamic countries, have begun developing a market for Islamic finance. Even though countries with the Islamic financial system across Middle East, North Africa, to Southeast Asia are competing to get more international fund flowing in, the amount of Islamic-based financing is considerably minor compared to the conventional-based financing.

Islamic finance, or sometimes described as Islamic economics, is a financial system that adheres to the concepts of the religion of Islam, its scriptures and traditions (Kuran, 1997; Visser, 2009). However, Islamic finance can also apply, to a limited degree, within a non-Islamic legal system (Visser, 2009). Islamic finance has several characteristics that are different from conventional finance. The most significant distinction is the absence of interest within the realm of Islamic finance and its focus on justice in terms of distribution of wealth (Visser, 2009; Hassan & Kayed, 2010).

The concept of Islamic finance was brought into the discussion during the last financial crisis of 2008. Some researchers claimed that Islamic finance can be the alternative from conventional finance as it was believed to possibly prevent financial crisis to re-occur or at least reduce the impact (Hassan & Kayed, 2010; Adel, 2010). For the last ten years, the world has witnessed several financial crises or sudden devaluation of financial assets. Some of those crises have broad implications to other sectors, like U.S subprime mortgage crisis and Eurozone debt crisis. During the US subprime mortgage crisis, what seemed to be a bubble in the property market developed into a major financial issue that caused companies to resort to harsh measure to save their businesses, often leading to unemployment. Hassan & Kayed (2010) argued that almost all the underlying sources of the crisis, such as excessive risk, can be prevented under the Islamic law (or also called *Sharia* law). According to Adel, "excessive and imprudent lending by banks over a long period" (2010,p. 315) is the root cause of almost every financial crisis. Adel (2010) argues that the risk-sharing concept under the Islamic finance will reduce the severity of the crisis, as it will make the investor more prudent.

In 2011, total *Sharia*-compliant assets reached over USD 1 trillion, posting a year-on-year double digit growth (Oakley, 2011). In 2013, Islamic banks had total assets of USD 1.7 trillion, indicating an annual growth rate of 17.6% for the past four years (Ernst & Young, 2014).

One of the primary financial instruments in Islamic finance is *Sukuk* or Islamic bonds. Similar to the bond, *Sukuk* expands the firm's financing base from the traditional bank loans. Instead of applying interest to the holders like conventional bonds, the issuer will offer profit-sharing scheme based on the *Sharia* law to attract buyers. The investment gained from the issuance of *Sukuk* is used in limited number of areas, mainly real estate and private equity. Mcmillen (2008) argues that this limitation of sectors is primarily because the issuers target the Middle Eastern investors as the buyer, while those investors have the expertise in the real estate and private equity industry. The limitation of areas are also made to minimise issue of non-compliance with the *Sharia* law (McMillen, 2008). The global outstanding value of *Sukuk* in the secondary market is reaching USD 286.41 billion during the first half of 2014, a growth of 16.8% year-on-year and 5% growth quarter-on-quarter (Rasameel Structured Finance, 2014). An eminent *Sukuk* issuance was the GBP 200 million *Sukuk* by the British Government on the second quarter of 2014, following a high demand that recorded an oversubscription of almost 12 times (Rasameel Structured Finance, 2014).

1.1.1. Financial Crisis of 2008

A financial crisis is a broad term describing disruptions in the financial markets that can be associated with insolvencies, falling asset prices and disturbance on the real economy (Hassan & Kayed, 2010; Eichengreen & Portes, 1987; Claessens & Kose, 2013). It is an unpredictable situation where investors and financial institutions lose a considerable amount of their investment (Hassan & Kayed, 2010). Another characteristic is that there is a disturbance in the supply of external financing in the system, large changes in credit volume and the emergence of massive support by the government (Claessens & Kose, 2013). In an international financial crisis, the disruptions spread outside the borders and disturbs the market's ability to allocate capital (Eichengreen & Portes, 1987).

A crash in the economy is usually began with a sharp increase in assets price that is called bubbles (Claessens & Kose, 2013). This increase is immense and cannot be explained based on the fundamentals of the economics. It is attributed to collective mispricing from the rational behaviour of the investor, microeconomic distortion and even from the irrationality of the investors.

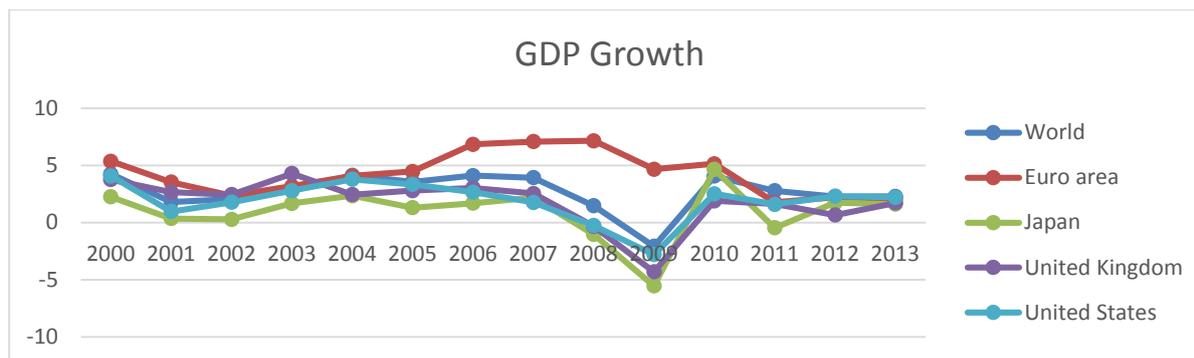


Figure 1 GDP Growth (%) (World Bank, 2015)

A substantial increase in credit is a common occurrence before the financial crises. The accumulation of leverage through credit expansion, that in turn creates higher risk, goes parallel with the surge in assets prices that pave the way to the crisis (Claessens & Kose, 2013). This upsurge in credit is triggered by a lot of factors including policies and capital flows.

Gorton and Metrick (2012) suggest that the financial crisis of 2008 began to appear in the first half of 2009. They argue that the crisis is a result of the builds up of problems and failures from the subprime market. The subprime problems itself, they argue, came from a credit boom, a drastic increase on home prices (figure 2) and global discrepancies in foreign trade. Bernanke (2010) suggests making a distinction between the trigger and vulnerabilities related to this crisis. The chance of losses on a subprime mortgage, which in turn causes a run in the market, is considered as a trigger. A "run" is when investors withdraw funds, from banks and investments because it is easier than to spend times to analyse in detail about the safety of the investment (Bernanke, 2010). Even though the causes of the decline of home prices are still questionable, apparently it was enough to scare investors to withdraw their funds. Losses in the subprime are not sufficient to cause a crisis, therefore it needs to be amplified to generate a crisis (Bernanke, 2010). The enormous increase in international financial flows is possible to augment credit booms (Claessens & Kose, 2013). As many financial markets worldwide are easily affected by international situations, asset bubbles and its effects can also easily spread across the border (figure 1).

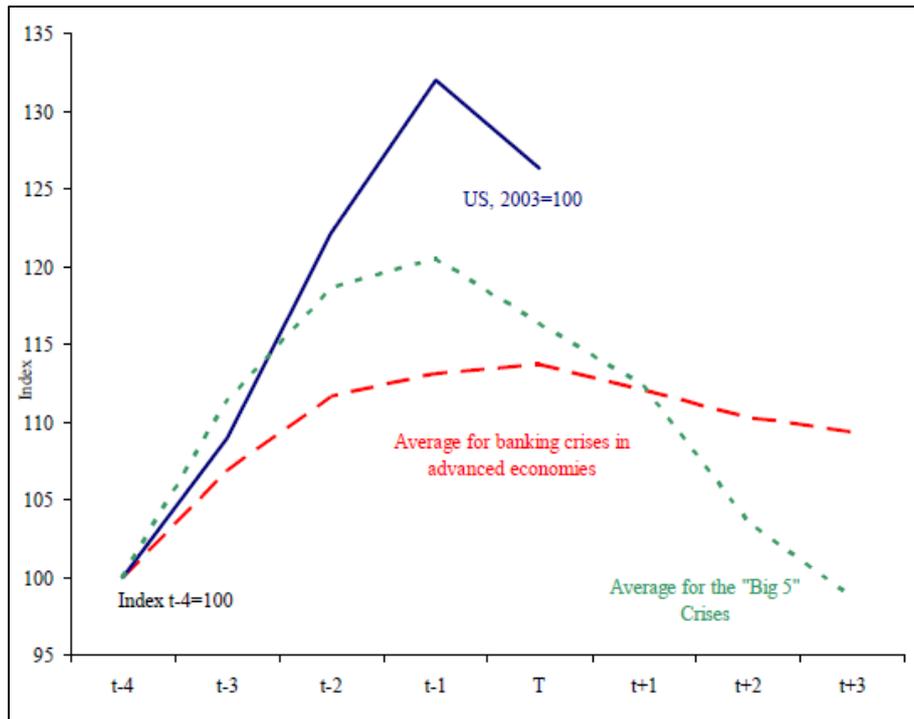


Figure 2 Real Housing Prices (Reinhart & Rogoff, 2008)



Figure 3 Real Interest Rates (World Bank, 2015)

The problems of the last crisis come from the financial sector, but some argue that the source is on the current practice in the financial system. Crotty (2009) argues that the regulation was so lax, and it was accompanied by rapid innovation in the financial system, that it always ended in a crisis. Securitization, or converting illiquid assets into liquid securities, has become easier that it created a substantial increase in the securitized mortgage. Around 60% of the U.S outstanding mortgage debt is traded, and on 2006 the total securitized mortgage loans were reaching USD 3.6 trillion (Keys & Benjamin, 2010).

1.2 Research Question

With the occurrence of the financial crisis and the current trend of the rapid development of *Sukuk* in the financial system worldwide, it is really interesting to study more about the sector.

Therefore, this thesis examines the differences between *Sukuk* and the conventional bond. The guiding research questions are:

- What are the advantages and disadvantages between *Sukuk* and conventional bond?
- Are there specific advantages and disadvantages in certain market conditions, especially during the financial crisis of 2008?

1.3 Research Purpose

Because the Islamic finance industry has been around for more than 20 years, one can assume that there are established research and academic resources for this industry. From the author's literature review through the internet search using general search engines, the results for Islamic finance specifically *Sukuk* are numerous. Particularly using the Google and Google Scholar search engine without restricted categories, such as finance or business, the results of *Sukuk* and bonds keywords are thousands. On the other hand, the result using academic databases are extremely limited. Academic databases available at Lund University bring the numbers down using specified categories to screen the results further. Using LUBsearch, Web of Science and Scopus databases the user can search within a limited set of categories to further find the most relevant articles needed.

Search terms	Google	Google Scholar	LUBsearch	Web of Science	Scopus ¹
Bonds	Approximately 164 million	Approximately 3,250,000	723 ²	5,454 ³	26,036
<i>Sukuk</i>	Approximately 678,000	Approximately 4,940	2313	14 ⁴	52
Bonds, <i>Sukuk</i>	Approximately 433,000	Approximately 2,460	1610	9	19
Bonds, <i>Sukuk</i> , Financial crisis	Approximately 136,000	Approximately 1,820	29	5	2

Table 1 Search engine results on topics, per 1st of May 2015

As can be seen from the above, the results from the databases related to the keywords Bonds and *Sukuk* are high, except within the Web of Science and Scopus database. If the keywords

¹ Within the Social Sciences & Humanities categories.

² Within the subjects of Investments, Finance, Economics, Business, and Management.

³ Within the Business Finance, Economics, Business, Management, and Operations Research Management Science categories.

⁴ Within the Economics, Business, Business Finance, Social Sciences Interdisciplinary and Management categories.

are added with 'financial crisis,' the results are further reduced even as low as two within the Scopus database.

Within the research results above, finding a key benefit between *Sukuk* and bond is quite hard. One of the researches that dealt with this topic was studying the difference between *Sukuk* and conventional bonds through the perspective of the stock market investor in the Malaysian stock exchange. Godlewski, Turk-Ariss & Weill (2013) found that investors react negatively to the firm's announcement of *Sukuk* issuance, while towards the bonds issuance the market has a neutral reaction.

A deep search using academic databases yielded low turnout that implies that researchers rely on narrow pieces of literature when conducting a study on this subject. The limited amount of related articles amplified the need for more research in this area, especially the reliability of *Sukuk* throughout a specific market conditions, particularly during the financial crisis of 2008.

The main goal of this research is giving the reader an understanding of differences between *Sukuk* and conventional bond. This research is also studying the advantages and disadvantages between *Sukuk* and conventional bond, including the explanation of the development of *Sukuk*, how it works, and its relevant regulations on international setting. To explore the statement that Islamic finance particularly *Sukuk* is more resistant to the crisis, the timeframe of the study will be during 2008 to 2012.

1.4 Structure

To examine the research questions, this thesis is divided into six chapters. It starts off with a brief introduction to the topic, progressing afterwards with the methodology in conducting this study. To familiarize the readers with the utilized concepts, the history of Islamic finance, *Sukuk* and conventional bonds will be explained next. Analysis and discussions of the research questions will follow in the subsequent chapter, before finishing the thesis with a conclusion.

Chapter 1 illuminates the background of problems for this thesis. The financial crisis is explained, especially during the 2008 crisis as it was the last crisis with an enormous impact worldwide. Research questions, problems and purposes are also presented in this chapter, showing as to why the study is needed in practice and academia.

Chapter 2 explains the methodology employed and analysis used in the thesis.

Chapter 3 briefly explains about the characteristic of bonds as the background of the study. To give a foundation for the funding decision, the time value of money which forms as one of the fundamental of investment decision elements will be presented briefly before explaining further about the risk associated with the bond investment.

In the chapter 4, the description about the history of Islamic finance and the main reason of its presence is explained before further elaboration specifically on *Sukuk*. The conventional finance specifically bond is also explained.

Chapter 5 uses the data to assess the advantages and disadvantages of Sukuk over conventional bonds. The general differences between Sukuk and conventional bonds are presented before moving into the financial crisis of 2008. Each impact of the major event during the financial crisis on both Sukuk and conventional bonds is analysed afterwards.

Lastly, chapter 6 provides a summary of the analysis and concluding remarks.

Chapter 2: Methodology

This chapter outlines the choice of analytical method that is used to connect data and theory to reach a conclusion, including the choices of data. .

2.1 Analytical Approach

In deciding a suitable approach for this thesis, both quantitative and qualitative approaches are considered. According to Thomas (2013), quantitative research refers to research that is using numbers while qualitative research refers to study that is using mostly words. When research is using numbers to explain the research question, for example using mathematical formulas and statistical calculations, it falls within the category of the quantitative research. On the other hand, research that is done by describing the observed object is considered as a qualitative research. Bryman (2008) further discusses the basic differences between the two data collection approaches. According to Bryman (2008), a qualitative method provides a perspective from the eyes of the participants while in quantitative method is according to the researcher. Another difference is that quantitative approach is presenting a static picture of the research focus, while the qualitative approach is showing a change or process. Lastly, the qualitative approach uses rich data and deep information while quantitative approach tends to use hard data & trustworthy facts.

This thesis is written using a qualitative research study. As such, the comparison is derived from the text and practice emerged. The use of the quantitative method in this thesis is considered at first, but soon abandoned due to time constraint and the availability of the data. Despite this, this study is not excluding numbers and figures as those are also used to support the analysis.

After gathering the data, the next process is rationalizing the provided information using suitable concepts and theories. Finding the connection between theory, practice and empirical evidence is a crucial starting point for any research. There are two approaches to the rationalizing process, which are deductive and inductive method of reasoning. According to Bryman (2012), deductive reasoning is based on what the researcher knows within a particular domain, and then deduce a hypothesis that must be subjected to empirical finding. Meanwhile, an inductive reasoning is when the researcher infers the implication of research finding for the theory (Bryman, 2012). This thesis is built from the practical experience combined with theoretical understanding of the writer on the subject of conventional finance. Therefore, this study can be safely classified as using the deductive approach.

The theoretical part of this thesis starts with a review of some understanding related to the research questions: the history of Islamic finance, types and characteristics of *Sukuk*, and description of bonds. After that, the information will be compared with the help of a comparative model based on the theories that being used to reach an understanding. Following the initial comparison the analysis will move to explaining the impact of events during the

financial crisis of 2008 to the *Sukuk* and bonds. Finally, the comparison results will be analysed to reach a conclusion.

2.2 Choice of Theoretical Concepts

A research needs to be based around a theory or create one. As discussed by Thomas (2013), a theory can either be a tool or a product of research. In this thesis, the theories will be used as a tool to help building a comparison model needed for the analysis.

Conventional bond and *Sukuk* have various types that distinct from one another, most notably based on the underlying asset. Therefore, the first characteristic that is used as the unit of comparison is the underlying asset of conventional bond and *Sukuk*. The underlying asset of each type of securities then will be analysed to see the impact on the instrument, firms, and investors during the financial crisis.

This research will use relevant theories to the common underlying practice of conventional bond. The conventional bond will be used as the point of reference as it is the default financial instruments in the western system used by firms to raise money.

An important factor before people making an investment decision in a conventional bond is the risk. One of the risks in the context of a conventional bond is about firm's creditworthiness: its probability of default (Ross, Westerfield & Jaffe, 2012). Therefore at first the risk-related characteristics of the conventional bond and *Sukuk* will be explored before any comparison is conducted. Other types of risk, either present solely on conventional bond or *Sukuk*, will be discussed such as interest rate, asset loss, and asset price decline. Figure 4 below illustrates how the risks influence the performance of *Sukuk* and conventional bonds.

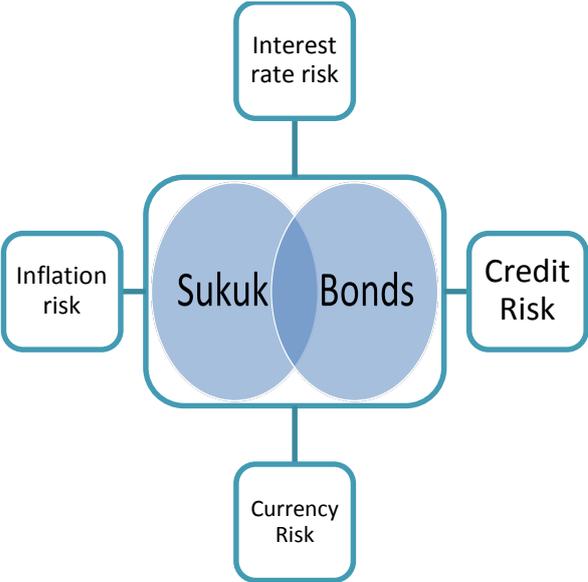


Figure 4 Comparison Model

2.3 Choice of Data

This research will use course books, widely-cited scholarly publications, guidelines, and rules from the internationally-recognized Islamic financial authorities and national financial authorities. Therefore, the empirical data is publications related to the topics of conventional bonds and *Sukuk*. Accounting and Auditing Organization for Islamic Financial Institutions, (AAOIFI) is one of the international financial organizations that will be used as the primary source since comprises of 200 members from 40 countries including central banks and Islamic financial institutions. Guidelines and publications from Islamic countries that have a significant market for *Sukuk* will also be used as the source for the data.

The process of collecting the information for the comparison will be conducted in several continuous processes. Firstly, the documents and data from prominent researches the financial authorities will be compiled, especially those related to *Sukuk* and conventional bond. While reading the documents, notes related to the characteristic of *Sukuk* and conventional bonds, such as risks, will be taken in separate transcripts accordingly. After all the documents have been thoroughly studied, notes will be gathered and arranged according to the respective instrument characteristic and comparison model.

Chapter 3 Theory

This chapter briefly explains about the characteristic of bonds as the background of the study. To give a foundation for the funding decision, the time value of money which forms as one of the basic of investment decision elements will be presented briefly before explaining further about the risk associated with the bond investment.

3.1. Yield, Coupon, and Maturity

Firms need to have an adequate amount of money to increase their shareholder's value. Firms can either raise equity by selling stocks or increase their debt by borrowing. When facing the decision to borrow money, firms traditionally have two options, either borrow from the bank or issuing debt securities called notes, debentures or bonds. Debt securities are initially referred to secured debt, where certain assets are secured for repayment of the debt (Ross, Westerfield & Jaffe, 2012). With all the definitions that were mentioned, it is not uncommon to refer to all kind of debt securities as bonds.

Ross, et al. (2012) and Thau (2010) explains that bonds are financial instruments that are issued by promise that the issuer will pay the principal amount when the debt is due and to pay periodic interest payments in the form of coupon yields. The scheduled time when a bond is due is called the maturity date. For example, the company XYZ is issuing a 10-year, USD 1000 bond with 5% coupon paid semi-annually. This means the lender, or bonds holder, will get USD 25 twice a year. At the maturity date, or in this example after ten years, the buyer will receive the coupon yields plus the principal amount of USD 1000. Not all bonds offers fixed interest. There are bonds with floating-rate, whose interest are set following the specified benchmark (Thau, 2010).

Bonds are issued with a face value, or often referred as the par value, and an offer price. For example, if a bond is offered at face value of USD 1,000 and offer price of 99.112, it means that the price of the bond is 99.112% of USD 1,000 which is USD 991.12. As soon as a bond is issued, it will start trading on the secondary market and can either be traded above par (at a premium) or below par (at a discount). For example an investor purchase three bonds separately, one at par (USD 1,000), one at a discount (USD 980), and the other at a premium (USD 1,050). These three bonds will generate the same interest, i.e. USD 50 semiannual coupon. By dividing the coupon with the price of the bonds, the investor can get the **current yield** of the bonds (Thau, 2010). So the first bond have a current yield of 5%, the second bond's yield is 5.10% and the third bond's yield is 4.76%.

On the secondary market, interest rates change as time passes. However, as the cash flows from a bond will not change, therefore the price of the bond will swing (Ross, et al., 2012). During the decline of the interest rates, for instance, the present value of the bond's outstanding cash flows will rise, and the price of the bond will also rise. In contrary, when the interest rates rise, the price of the bond will drop. To determine the value of a bond at a particular time, one needs to know the number of the remaining period until maturity, the face value, the coupon and the market interest rate, or **yield to maturity** (Ross, et al. 2012). With all this information, an

investor can calculate the present value of the remaining cash flow of a bond to know the estimates of bond's current market value.

3.2. Risk

Time value of money is the backbone of any investment decision, either for a firm, fund manager or investor. People are willing to get one dollar worth of money today rather than receiving the same amount of money in the future (Tuckman & Serrat, 2011). This is also one of the reasons for a firm's investment decision to borrow: when they borrow one dollar today believing they can make more than one dollar in the future. From another perspective, when someone is lending money he/she expect to gain a return exceeding the other alternatives that he or she can do with that cash. This concept is called **opportunity cost**. In bonds, this is also the reason longer maturity bonds have bigger coupon compared with the shorter maturity. The investor wants to have more return not just because of the opportunity cost, but various other risks such as interest rate risk and credit risk.

The existence of risk implies that the investor will demand a higher return compared to risk-free investment, for example, Treasury bonds issued by the U.S Government (Ross, et al., 2012). When the U.S. Government issues a Treasury bond, they can offer a lower yield compared to other investment. Furthermore, bonds with low risk can provide a yield that is lower than riskier bonds. This is why the risk is an important concept to discuss when studying bonds.

3.2.1. Interest Rate Risk

The prices of bonds are changing, particularly related to two factors: fluctuation in the interest rates and changes in credit quality. As previously explained, interest rates have a direct impact on the yield of bonds, managing interest rate risk is the central focus in bond portfolios management (Thau, 2010). This is understandable since investors who buy bonds do not want to lose their money when the price goes down. **Interest rate risk**, which also termed as market risk, is the “propensity bonds have of fluctuating in price as a result of changes in interest rates” (Thau, 2010, pp.25). The interest rate risk is calculated by how much the price of a bond move when interest rates changes (Tuckman & Serrat, 2011). Because of this importance, interest rate risk is usually used within the fixed-income market.

Assume that we bought a 20-year Treasury bond with USD 1000 par value and 4% coupon. Suppose that the interest rate is rising to 8%, how can we find a buyer for our bond when we want to sell it, yielding 4%, when another investor can buy a new Treasury bond yielding 8%? The solution is by lowering the price so that the cash flow that the bond generates equals 8%. The price of the bond would be USD 500 and that means losing USD 500 if we sell the bond. Alternatively, the investor may hold the bond until the maturity date and receive the original promised cash flow, i.e. the 4 percent coupon and face value payment.

Even with the presence of the interest rate risk, investors still buy long-term bonds for various reasons. Thau (2010) suggested that the investors mainly consider long-term bonds provide the highest income. Thau also believed that long-term bonds allow the investor to “lock” attractive interest rate with the assumption that the investor is going to hold the bond until maturity.

Another reason is to take advantage when there is an indication that the interest rates are going to decline so that the investor is buying a bond with the maximum capital gain.

3.2.2. Inflation Risk

In order to understand inflation risk, we need to understand about real rates and nominal rates of inflation. Assume that one-year interest rate is 10 percent, and anyone who is depositing USD 50 in a bank today will have USD 55 in the next year. Suppose that a kebab cost USD 10 today, therefore USD 50 can get five kebabs today. Now if the inflation is 5%, the price of kebab next year will rise to be USD 10.5. If we are depositing USD 50 today, we can get 5.24 kebabs next year or more than just five kebabs. This is indicating a 4.6 percent increase in purchasing power. With this example, 10 percent is the nominal rate of interest while 4.7 percent is the real rate of interest. The real rate of an investment is, therefore, the percentage change in buying power (Ross, et al., 2012).

Now suppose that we buy a 20-year Treasury bond, issued by the U.S. government, with a 10 percent coupon and par value of USD 1,000. This means that the bondholder will receive annual coupon payments of USD 100 for the next 20 years and the principal amount of USD 1,000 at the maturity date. Using simple interest calculation, the bondholder will receive a total coupon income of USD 2,000 and a principal amount of USD 1,000. In the end, the bondholder will therefore end up with USD 3,000. Because the U.S government is seen impossible to goes bankrupt (Ross, et al. 2012), the bondholder is practically guaranteed to receive all the payments. This can be assumed as a riskless bond, but also depends on the type of risk. If there is no inflation and the price of kebab will be still at USD 10, 20 years later the bondholder will be able to buy 300 kebabs. In the case where there is an annual inflation of 5%, the future price of kebab for the next 20 years will be USD 26.53, which means the bondholder will only be able to buy 113.07 kebabs or much less than in the world without inflation. This is called as **inflation risk**, when the investor will receive an increase in the investment but at the same time receiving a reduction in buying power because of the uncertainty in the inflation rates (Ross, et al., 2012).

By analysing the previous example using nominal and real rates, the nominal payment received by the bondholder is USD 3,000. With the assumption of 5 percent of inflation rate, the real value of the investment is $USD\ 3,000 / (1.05)^{20} = 1,130.67$. According to Ross, et al., (2012) real value measures the purchasing power of the cash received. If the inflation is low, the buying power at the end is still increasing, however if the inflation is high, there is a possibility that the buying power at the end will decrease even if the investment will generate income. Inflation can therefore substantially reduce the real gain of the payments, which can be considered a notably serious concern during a high and fluctuating inflation.

3.2.3. Credit Risk

As previously mentioned, one of the risks in the context of a bond is firm's creditworthiness: its probability of default (Ross, et al. 2012). When a firm, or even a country, cannot pay the promised coupon, the cash flow from the bonds payment will not be received by the bondholders. Suppose that a firm issued bonds worth USD 500 million with 8 percent coupon for ten years. There is a risk that the firm will encounter financial difficulties during the period

and fail to deliver the promised coupon. This might result in a reorganisation or even liquidation of the firm. Such reorganisation or liquidation may cause the bondholders fail to receive not only the 8 percent coupon, but also the principal money of USD 500 million (Tuckman & Serrat, 2011).

All securities issued by the U.S. government are considered risk-free because a default by the U.S. government is thought to be impossible (Thau, 2010). On the other hand, corporate bonds are distinguished by credit risk that makes the demanded return is higher compared to safer investment such as government bonds. For example, if the U.S. Treasury bonds offer 10-years bonds a 3.50 percent coupon, the corporation might sell the same maturity bonds with coupon as much as 7.50 percent (Tuckman & Serrat, 2011). The higher coupon rate for corporate bonds is to compensate for the default risk and also part of a risk premium for bearing the default risk.

Analysing the probability of a firm to default is not an easy task and normally investors do not perform the analysis by themselves. The analysis of default risk is normally done by agencies to give ratings to specific bonds, from the riskiest to the safest. Three global leading rating agencies are Moody's, S&P and Fitch (Thau, 2010; Ross, et al., 2012). Moody's and S&P calculate the rating by the likelihood of a firm to default and the protection that the bondholders have during the default (Ross, et al., 2012). Bond ratings concern only with the credit risk and not interest-rate risk. Consequently, the price of a high-quality bond can still fluctuate.

Credit Quality Ratings and What They Mean

Moody's	Standard & Poor's	Fitch	
Aaa	AAA	AAA	Gilt edged. If everything that can go wrong, goes wrong, they can still service debt.
Aa	AA	AA	Very high quality by all standards.
A	A	A	Investment grade; good quality.
Baa	BBB	BBB	Lowest investment grade rating; satisfactory; but needs to be monitored.
Ba	BB	BB	Somewhat speculative; low grade.
B	B	B	Very speculative.
Caa	CCC	CCC	Even more speculative. Substantial risk.
Ca	CC	CC	Wildly speculative. May be in default.
C	C	C	In default. Junk.

Figure 5 Credit Quality Ratings (Thau, 2010,p.33)

Bond ratings are separated by investment-grade rating and low-grade rating with a high probability of default or junk bond. The information for the ratings is compiled from the company and other sources. The highest rating is AAA and the lowest is C. If the rating of a bond is downgraded, or the credit rating is lowered, the price of the bond will decrease. In contrary, if the rating of a bond is upgraded, the price will also increase. However, there is a

chance that the price of a bond will move if there is an indication that the rating of a bond will change (Thau, 2010).

3.2.4. Currency Risk

The current technology gives more access for both firms and investors to foreign markets across the world, including foreign bond markets. However, international bond raise an additional risk that is unique to it, namely currency risk. Suppose that we are now in Europe using Euro and buying a US Dollar-denominated Treasury bond. Assume that there is no inflation, but Euro has appreciated against US Dollar. Even if our investment in the bond will generate returns, there is a chance that the depreciation of the US Dollar is greater than the return on the investment.

Exposure to the international currency does not create currency risk as foreign exchange (or usually abbreviated as FX) is expected to fluctuate from time to time. However, if the currency fluctuation is not as anticipated, it will create a probability that domestic buying power will decrease. Currency risk is, therefore, a statistical number that measures how much domestic purchasing power will differ from what was anticipated (Adler & Dumas, 1984).

To counter this risk, investors and firms resort to hedging strategy. Hedges are “the amounts of the foreign-currency financial transactions” (Adler & Dumas, 1984.p.42) needed to make future domestic buying power unaffected by the variations in the foreign exchange rate. Thau (2010) also note that many bonds offer hedging to reduce this currency risk. Investors will, therefore, need to understand the hedges that are offered by the bond and the reason of the investment.

Chapter 4 Data

The origins of Islamic finance will be explained to give a clear context of the system's emergence. Afterward, Sukuk will be explained in details including the different types of it. To end with, conventional finance specifically bonds will be explained in this chapter.

4.1 The Origins of Islamic Finance

Muslims are people who are very proud of their tradition and philosophy, bolstered by the holy book of Islam, Quran, itself (3:110) that tells them that they are "the best of people evolved for mankind." The idea of Islamic finance came as a means to put Islamic principles of economics into everyday life. This is because Muslims cannot compartmentalize their actions into religious and secular dimension, as Islam regulate not only the spiritual matter of its followers, but also everyday behaviour (Algaud & Lewis, 2007; Najjar, 2005), the exact opposite of the concept of separation of church and state advocated by the western countries. On the other hand according to Visser (2009), Muslims are divided among to which extent the traditions, which is deeply rooted in the early century of Islam, applies to modern world that has profoundly changed. Efforts to create a distinct new system based on the Quran can also be perceived as the way Muslims try to strengthen their own identity against the western financial system or even the socialist one. From the twentieth century until more recently in the twenty-first century there is growing concerns among Arab intelligentsia to protect their unique character against western globalization, in which many of them perceive it as a cultural conquest (Najjar, 2005; Kuran, 1995). Interestingly, there is another perspective which argues that because the ultimate target is about political and cultural, instead of purely economic, the practice of Islamic finance does not necessarily needs to be coherent and realistic (Kuran, 1995).

Within the Islamic philosophy exists a considerable number of schools of thoughts besides the commonly portrayed Sunni-Shia division. Warde (2000) points out that these differences are attributed to numerous factors such as historical background and geopolitical element. When studying the history of Islam and Islamic finance, the Arab world is usually the focus of study. However, the Arab region is not the only home for a handful of the Muslim population. In 2010 the estimated Muslim population in the Middle-East and North Africa are around 321 million people, or only 19.9 percent of total estimated global Muslim population, while in the Asia-Pacific the Muslim population is over one million people (Grim & Karim, 2011). In the Middle East, Islam was spread along with the conquest of Muslim rulers, while in the South Asia and South East Asia the Islamisation was through peaceful trade contact with the Middle Eastern traders (Warde, 2000). These differences in the means of Islamisation, argue Warde (2010), contribute to the many different faces of how Islam and Islamic finance are understood and practiced.

A prominent intellectual who came up with the idea of an Islamic financial system is Pakistani Sayyid Abul Ala Maududi. As early as 1930s, Maududi advocated Islamic principles as the basis of economic practices. Still as part to distinguish Islamic philosophy to the western system, Maududi wrote that "Islam has a code of life of its own ... which is superior to anything that

western civilization could offer." (Slomp, 2003, cited in Visser, 2009) As an editor of various Islamic journals, Maududi strongly advocated that Islamic principles to be observed by the state to its citizen. Interestingly, Maududi opposed Muhammad Ali Jinnah in his plan to separate from India to create an Islamic country because Maududi felt that Islam represents universal values thus inappropriate to act as a foundation of a country (Visser, 2009).

The Islamic financial system itself that Maududi tried to create is apparently not a new system, as it has been applied before. During Islamic Golden Age, there has been an early capitalism system that slightly resembles free markets (Kettel, 2011). This economic system, which slightly resembles a mix between mercantilism and capitalism, was used in the Caliphate during 8th to 12th centuries. Concepts similar to conventional banking are widely utilized in this early Islamic finance, such as bills of exchange, limited partnerships (*Mudaraba*), capital accumulation (*nama al-mal*), cheques, and trust (*waqf*).

The claim that Islam regulates all spheres of life is visible through the code of conducts in business and commerce. The fundamental principles of commerce are laid in four root transactions as sales (*bay*), hire (*ijara*), gift (*hiba*), and loan (*ariyah*) (Algaud & Lewis, 2007). These four basic tenets are elaborated into various transactions such as pledge, deposit, guarantee, charity organizations, and partnerships. Many of these concepts were advanced and adopted by medieval Europe during the 13th century (Kettel, 2011). However, there are strict rules that form the backbone of all Islamic transactions that is noticeably different from conventional practice and must be adhered to other financial sectors such as investment. These rules are:

1. Interest (*riba*) is prohibited;
2. Muslims are only allowed to do business and investment in legal and permitted (*halal*) activities;
3. Social charity (*zakat*) must be paid;
4. The need for an Islamic authority to ensure that all activities are in accordance with the *Sharia* law.

4.1.1. The Sources of Islamic Law

As the name implies, Islamic financial system strictly follows the Islamic law, or *Sharia*. In practices, there are various sources that form the basis for the *Sharia* law. Etymologically, the word *Sharia* means 'the way to the source of life', however the meaning now evolves to the legal system and code of conduct derived from the Quran and original traditions (*hadith*) (Algaud & Lewis, 2007). Quran validity derived from Muslims' belief that it is words of God manifested to the Prophet Muhammad through the angel Gabriel (*Jibril*), therefore it is above any other earthly laws. After the Quran, deeds and sayings of Muhammad (*sunna*) that are recorded on the *hadith* (traditions) are held high as the reference (Algaud & Lewis, 2007).

Besides the primary sources of Quran and *hadith*, there are other sources deemed necessary to form the basis of *Sharia* law since using Quran and *hadith* only leaves room for different interpretations. *Hadith* contains many detailed accounts of business practices. However, a lot of today practices branded as Islamic finance have yet to exist during the early Islam, even

though many Islamic economists claim that the practices reflect the eternal teaching of Islam (Kuran, 1997). Many schools of laws (*madhhib*) present in the Sunni Islam teaching, such as Hanafi, Maliki, Shafii, and Hanbali. Among these schools, the most common secondary source of *Sharia* laws are the consensus (*ijma*) and analogy (*qiyas*) (Visser, 2009).

Type of Source	Islamic Finance	Conventional Finance
Source with the highest authority	Quran Sunna, Hadith	International authorities, for instance IMF and the Basel Committee on Banking Supervision
Secondary Sources	Consensus (<i>Ijma</i>) Analogy (<i>Qiyas</i>) Individual interpretation (<i>Ijtihad</i>) Expert private interpretation (<i>Ray</i>)	Country-specified financial authorities, for example the Financial Services Authority in the U.K
Other principles	Juristic preference (<i>Istihsan</i>) Public interest (<i>istislah</i>) Custom (<i>Urf</i>) Necessity (<i>Darura</i>)	

Table 2 Sources of Islamic Law (adapted from Visser, 2009, p. 11; Reinhart & Rogoff, 2009)

4.1.2. Modern Islamic Finance

The widely-accepted form of Islamic finance is the abolishment of interest, and interest-free banking is of very recent origin (Kettel, 2011). Profit-sharing (*mudaraba*) constitute the basis of the Islamic financial system. Many financial instruments are created based on this principle, even though their legality varies from schools of thoughts. This is because many of the financial instruments still represent some sort of *gharar* (risk related to uncertainty) and *masyir* (gambling or speculation) (Visser, 2009).

The first profit-sharing bank was introduced in Egypt in 1963 until 1967, but without the use of Islamic identity because at that time Islamic fundamentalism and the ruling regime were not in good terms (Kettel, 2011). This project was done in the city of Mit Ghamr, and on 1987 the project became part of Nasr Social Bank which now still in the business. An institution in the Islamic finance began to be introduced in the 70s when the Islamic Development Bank, an inter-governmental agency, established in 1975 and the International Economic Conference was held on 1977 in London.

Presently, Islamic finance ranges to almost all aspect of finance from banking, leasing, *Sukuk*, equity markets, investment funds, insurance (*takaful*) to microfinance. However, assets on *Sukuk* and banking represent around 95 percent of total Islamic finance assets (IMF, 2015).

Sukuk are financial securities that comply with *Sharia* law and backed by tangible assets (Hakim, 2007; Godlewski, Turk-Ariss & Weill, 2013). In this sense, *Sukuk* is identical to asset-backed securities with an exception that the backing asset cannot comprise merely on debt. The structure of *Sukuk* differs and this affects their classification into money or capital markets.

4.1.3. *Sukuk*

Sukuk is a financial instrument that shares characteristics with bond and stock, and issued to finance trade or the production of tangible assets (Hakim, 2007; Godlewski, Turk-Ariss & Weill, 2013). Similar to the bond, *Sukuk* have a maturity date and the holder will receive a regular income over the period and a final payment at the maturity date. *Sukuk* is also asset-based, rather than asset-backed, with the underlying asset has to comply with the *Sharia* law (Visser, 2009; Godlewski, et al. 2013; Ahmad & Radzi, 2011). *Sukuk* eligibility is determined by a third party that assess the ownership of the asset, service, or project. *Sharia* scholars, the Islamic finance counterpart of an auditor, play a major part in the *Sukuk* issuance as they have the fundamental role of ensuring *Sharia*-compliance of the *Sukuk* (Godlewski, Turk & Weil, 2014).

While conventional bonds price is determined only by the creditworthiness of the issuer, *Sukuk* price is determined by the creditworthiness of the issuer and the value of the asset. Even though *Sukuk* is also similar to stock in the sense that they represent ownership and no guarantee of a fixed return, but stock have no maturity date. *Sukuk* also has to relate to a specific asset, project or service.

According to Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), *Sukuk* is defined as certificates of equal value representing undivided shares in ownership of tangible assets, usufruct and services (AAOIFI in Wahida & Radzi, 2011). There are three requirements for a *Sukuk* to be considered in compliance with the *Sharia* law (Godlewski et al. 2013). First, the certificates must represent ownership in tangible assets, usufruct or services from revenue-generating firms. Two, payments to the investor come from after-tax profits. Third, the value repaid at maturity date should follow the current market price of the underlying asset and not the original invested amount.

Sukuk not only attracts Middle Eastern investors, but also investor from non-Muslim countries. *Sukuk* is also an attractive financial instrument for the western investor to tap the Middle Eastern funds. The German state of Saxony-Anhalt issued *Sukuk* in 2004, and the World Bank followed by issuing *Sukuk* in 2005 (Visser, 2009).

Sukuk comes in many different forms, as financiers are not restricted to create their own variations (Visser, 2009). However, fundamentally the parties within *Sukuk* issuance are the firm (the obligor or originator), the Special Purpose Vehicle (SPV), and the investors that buy the *Sukuk* (Tariq & Dar, 2007). According to Tariq & Dar (2007) SPV is a bankruptcy-remote entity, separate from the originator, which issues *Sukuk* certificate.

Some existing *Sukuk* structures are *Murabaha* (cost-plus sales), *Salam* (pre-payment of an asset for future delivery), *Ijara* (rental/lease agreement), *Istisna* (build-to-own property), *Mudaraba* and *Musharaka* (partnerships) (Godlewski, et al. 2010). The most common type of *Sukuk* are *Ijara*, as it is popular, and *Musharaka*, as it is perceived as a more traditional forms of business financing (Wilson, 2008).

Ijara Sukuk. This type of *Sukuk* acts as a certificate of ownership of a leased asset and the claims of the cash flow generated by the asset (Aziz & Gintzburger, 2009; Visser, 2009). The *Ijara Sukuk* is the top Islamic financial products because of its features that are acceptable across jurisdictions (Aziz & Gintzburger, 2009). There are two types of this *Sukuk*, the sale-leaseback model and the headlease-sublease model (Visser, 2009). In the sale-leaseback model, first of all, the borrower creates an SPV that will issue *Sukuk*. The SPV will buy the asset from the firm, issue the *Sukuk*, and then lease the asset back to the firm. In the headlease model, the owner of the asset headlease it to the issuer and rent it back.

One example of the sale-leaseback model is visible in Malaysia, where the government created Global *Sukuk* Inc. as the SPV. This SPV buys real estate from the government agencies and then lease it back to the government. The SPV issues the *Sukuk* and hand over the collected money to the government. This makes the *Sukuk* a floating rate trust certificates. The rent paid by the government to the SPV match the payments payable on the certificates, and the SPV distributes them to the *Sukuk* holders in proportion to their ownership amount (Visser, 2009; Godlewski, et al. 2013). On the expiration date, the real estate is sold back to the government at the face value of the *Sukuk*, so the price movement of the asset has no impact to the *Sukuk*. However on 2008, AAOIFI stated that it is not permissible to re-purchase the asset for its nominal value. In typical sale-leaseback model if the asset has a market value, *Sukuk* holder will realise a capital gain or loss. Conversely, if the asset is a public good with no market, it has an embedded put option in which the firm buys back the asset at face value (Godlewski et al. 2013). *Ijara Sukuk* can be traded on the secondary market with negotiated prices (Visser, 2009).

Musharaka Sukuk. In this type of *Sukuk*, the borrower firm (originator) set up a joint venture with the SPV (Visser, 2009; Godlewski et al. 2013). The firm will provide some percentage of the funds or a pool of assets, and the rest will be financed by the SPV through *Sukuk* issuance. These parties agreed to a predetermined profit and loss-sharing ratio. The parties will also appoint an agent to manage the asset that will receive a fixed agency fee and variable incentive fee. At the maturity date, the firm will have bought back all of the partnership shares at pre-agreed price and intervals. This type of *Sukuk* is attractive because it can be used to finance real estate and other infrastructure, and also can be traded in the availability of a secondary market (Visser, 2009; Godlewski et al. 2013).

4.2. Conventional Finance

Firms need to have an adequate amount of money for capital expenditures, working capital and other uses with the ultimate aim is to increase their shareholder's value (Ross, Westerfield & Jaffe, 2012). The source of financing can be generated from internal cash flow, which is the operations of a firm. Another source of financing that are available to firms are either by acquiring equity through the selling of stocks or by increasing debt through borrowing.

4.2.1. Stock

Stock represent an equity ownership of a firm and commonly have two types, which are common stock and preferred stock. The term preferred means that the stockholders have a preference over common stock over the payment of the dividends and asset allocation during a liquidation event (Ross, et al. 2012). Preferred stock has no rights for voting, unlike the common stock.

Common stock differs from preferred stock in terms of the right to vote. The shareholders elect directors who subsequently hire the management to carry the firm's operational activity. Hence, shareholders drive the company through the ability to elect the directors (Ross, et al. 2012). Common stockholders also have the opportunity of a dividend payment, in which the directors will decide the amount.

4.2.2 Conventional Bonds

When facing the decision to borrow money, firms traditionally have two options, either borrow from the bank or issuing debt securities called notes, debentures or bonds. Debt securities are initially referred to secured debt, where certain assets are pledged as security for repayment of the debt (Ross, et al. 2012). Nevertheless, it is not uncommon to refer to all kind of debt securities as bond.

As the name implies, debt is something that must eventually be paid. In the concept of bond the bondholders will obtain two type of cash flows. The first cash flow that is received by the bondholders are periodic payments in the form of a coupon. The second cash flow, and it will be received at the maturity date, is the final payment that is the original borrowed amount.

The risks and benefits related to equity ownership and debt ownership are different. The basic characteristic of equity is that it represents an ownership and is a residual claim (Ross, et al. 2012). This means that shareholders are less prioritized than bondholders. For example during a bankruptcy process, the bondholders will be prioritized to receive proceeding from the sales of firm's asset while the shareholders will get the rest, if any. On the other hand, this also means that even though there is a risk for a shareholder to lose everything if the company goes bankrupt, there is also no upper limit for the potential gain from equity.

Bonds are not always have a fixed-rate interest. Bonds can be sold with a fixed-rate, floating rates or even with no rate at all (a zero-coupon bond). A floating-rate bond have an adjustable coupon payment (Ross, et al. 2012). The rates are usually tied to a benchmark such as the Treasury bill. The price of the bond will adjust each time the benchmark change, usually with a lag.

In a zero-coupon bond, the bondholders do not obtain cash flows like a regular bond. As a replacement, the zero-coupon bonds are sold at a deep discount from par. The price of the bond will gradually move to par, and eventually matures at par (Thau, 2010). The final price of a zero-coupon bond is calculated to mimic all the cash flow that would have been received if the bond generates an interest.

The debt securities are tradable, and both borrowers and lenders meet in the fixed-income markets to trade these securities. Bonds have a different degree of liquidity because many are not regularly traded (Ross, et al. 2012). Therefore, bonds often have liquidity premium that affect the rate of return of bonds.

Feature	Conventional Finance		Islamic Finance
	Equity	Debt	
Income	Dividends	Interest	Profit-sharing
Tax status	Dividends are taxed as personal income	Interest is taxed as personal income. Interest is a business expense, and corporations can deduct interest when computing their corporate tax liability.	Varies
Control	Common stock usually has voting rights	Control is exercised with loan agreement	Varies
Default	Firms cannot be forced into bankruptcy for nonpayment of dividends	Unpaid debt is a liability of the firm. Non-payment results in bankruptcy	Investor shares equal risk as the firm

Table 3 Features of Conventional Finance and Islamic Finance (adapted from Ross, Westerfield & Jaffe, 2012; Visser, 2009; Hakim, 2007)

Chapter 5 Analysis and Discussion

This chapter starts with the explanation of each type of risk related to Sukuk and conventional bonds. The chapter then moves to the description of the events during the financial crisis of 2008 and its effect on both Sukuk and conventional bonds

5.1 Differences between *Sukuk* and Bonds

A general approach to comparing *Sukuk* and bonds is fundamental to provide guidelines for firms and investor in understanding the instruments and their choices of the available options. Credit risk is presented first as the investors have the possibility to lose not only the periodical cash flows but also the principal amount. The interest risk and inflation risk are investigated afterward as it influences many aspects of the bonds, including price and yields. The currency risk is analysed last as it will not affect investors that strictly invest in the domestic market, but only affect investors with international exposure.

5.1.1. Credit Risk

During the financial crisis, *Sukuk* are not unsusceptible to default either. There are numerous defaults on *Sukuk* that was reported, ranging from companies in the U.S., United Arab Emirates, to Malaysia. One default that received major attention, both because of the value and the parties involved, is a potential default of Dubai-based Nakheel.

Normally when a company cannot pay the promised cash flow to the bondholders (a default), the bondholders will receive a claim on the firm's assets and cash flow. The bond's terms will determine what is on the line for the bondholders as well as their priority during the claims (Office of Investor Education and Advocacy, 2013). A secured bond for example clearly states specific collateral, such as property, that act as security for the bonds. If the company goes bankrupt, the bondholders have a legal right to the specified collateral. Another type is senior unsecured and junior unsecured bonds. As the name implies, the bonds are not directly tied to a specific assets, but to the general claims of the company. If the business goes bankrupt, the holder of senior unsecured bonds will have higher priority to the company's asset and cash flow than the holder of junior unsecured bonds. (Office of Investor Education and Advocacy, 2013).

The originator of Nakheel *Sukuk* is Nakheel Holdings 1 which was a subsidiary of a public sector company Dubai World (Wijnberger & Zaheer, 2013). Hence, the rating agencies gave the *Sukuk* status as a sovereign bond since it was issued by a public sector company. This status is strengthened by the high ratings given to the *Sukuk* by Moody's (A1) and Standard & Poor's (A+) (Wijnberger & Zaheer, 2013). This *Sukuk* structure is based on *Ijara manfaa* in which bondholders buy the leasehold interest of the primary assets without transferring the title of the assets to them. This means the *Sukuk* holders only had claims to the stream of income generated by the assets but not on the assets themselves. When the company was nearing payment of the *Sukuk* on December 2009, Dubai World announced that it seek the creditors to have a standstill agreement (Salah, 2010). This news brought shock as it was assumed that the Dubai government would not let their company goes into default, even when the *Sukuk* has a disclaimer that refute

such guarantee. The problem further exaggerated when it was found that the local law is inadequate to handle such a potentially complex bankruptcy proceeding. There was no clear indication between all the creditors, either conventional creditors or *Sharia*-compliant, of who had superior claims of the Nakheel's assets (Salah, 2010). The default is averted at the last moment with a bailout from the government of Emirate of Abu Dhabi (Salah, 2010; Wijnberger & Zaheer, 2013).

Unlike the Nakheel *Sukuk*, the other *Sukuk* are not fortunate enough to receive a bailout from the government. East Cameron Partners, for instance, was the first U.S. company that defaulted on its *Sukuk*, however the *Sukuk* holders rights on the company's assets are secured through a developed legal system of the U.S. (Wijnberger & Zaheer, 2013).

Based on the above explanation, conventional bonds provides more assurance to the investors as the regulations about the certificates are extensive and has already established. Unlike the conventional bonds, *Sukuk* is still young and there are still less case that can be used as a reference by the authorities. With the possibilities for the firms to produce their own type of *Sukuk* structures, the government has will have to work more in realigning regulations of *Sukuk* with the regulations of existing financial instruments.

5.1.2 Interest Rate Risk and Inflation Risk

The interest rate is one of the factors that affect bonds' price movement. If the interest rate goes up, the yield for bonds will have to adjust to being higher than the interest rate. Because of the inverse relationship between yield and price, when the bonds yield goes up the price will go down.

Speculation and excessive risk are prohibited in the Islamic Finance, nonetheless the trading of *Sukuk* is still possible. Visser (2009) points out that *Sukuk* Ijara and Istisna can be traded. However, there are different views of the tradeability of Murabaha *Sukuk*. The Islamic scholar In Malaysia allows Murabaha *Sukuk* to be traded, but this practice is forbidden in the Middle East (Visser, 2009). Not only on Murabaha *Sukuk*, there is almost no secondary trading in the GCC region for the investors tend to hold this instrument until maturity (Godlewsky, et al. 2010).

Figure 6 shows that the *Sukuk* price are fluctuating which means that the market of *Sukuk* is existing. During the half of 2008 until early 2009 when the U.S. Treasury rate dropped (figure 7), the *Sukuk* index was also seen to decrease. This shows that in some degree, *Sukuk* price is also affected by the treasury rate just like the conventional bonds.

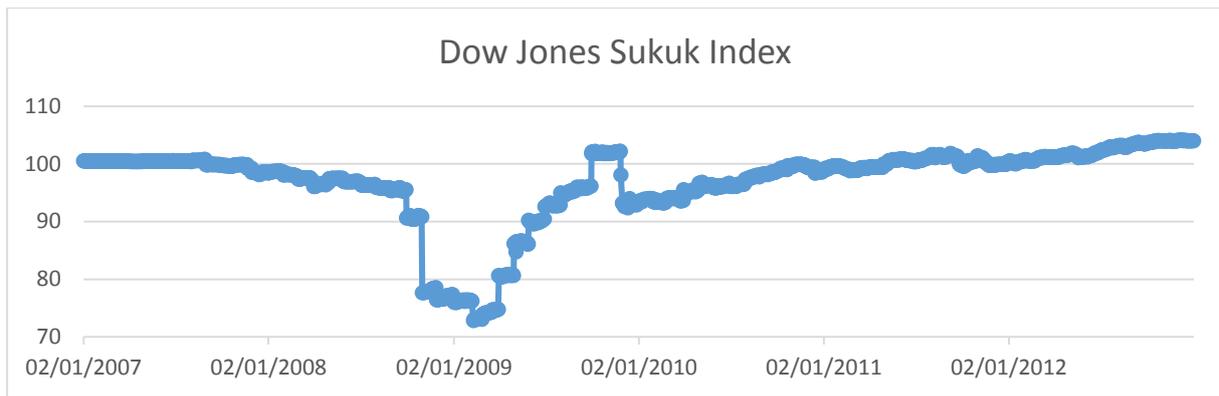


Figure 6 Dow Jones Sukuk Index⁵ (Bloomberg L.P., 2015)

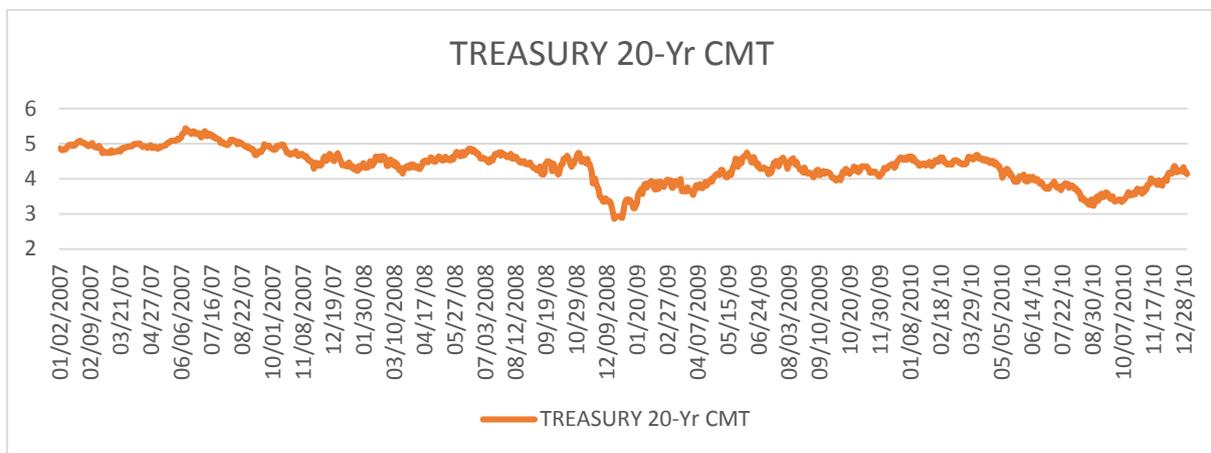


Figure 7 Interest Rate of U.S Treasury 20-Years Constant Maturity Rate (U.S. Department of the Treasury, 2015)

A rise in inflation will cause the nominal rate to also to rise to compensate the real rate of interest, and this is known as the Fisher effect (Ross, et al. 2012). Figure 8 shows that the world's inflation during 2008 surged from around five percent in the previous year to around nine percent. While not as high as the world's inflation, the inflation in the U.S rose 99 basis points from 2.85 percent in 2007 to 3.84 percent in 2008.

With the inflation rise, the yield of *Sukuk* and bond therefore has to move in a similar manner to keep the purchasing power intact. Figure 6, figure 8 and figure 9 shows that during 2008 when world's inflation skyrocketed, the price of bonds and *Sukuk* was falling. This displays that the yield of bonds and *Sukuk* rose to preserve the real rate of interest of the bondholders.

The above explanation provides an understanding that *Sukuk* are also affected by the same forces as conventional bonds. From the perspective of the firms, fluctuation of the interest rate and inflation will have an impact to the coupon for the bonds offered, and in turn affecting firm's borrowing cost. As opposed to conventional bonds, *Sukuk* are based on a profit-sharing

⁵ This index measures the performance of global Islamic bonds. It composed of Global U.S. dollar-denominated investment-grade bonds that are Shari'ah-compliant. Base value: 100 as of September 30, 2005. (S&P Dow Jones Indices LLC. 2012b)

scheme, this means that the firms will not have an increased cost of borrowing. The *Sukuk* investors on the other hand are still affected from the price fluctuations. Assumed that the investors are not holding the certificates until maturity, there is a possibility that they will lose the face value of the *Sukuk* when selling it on the secondary market.

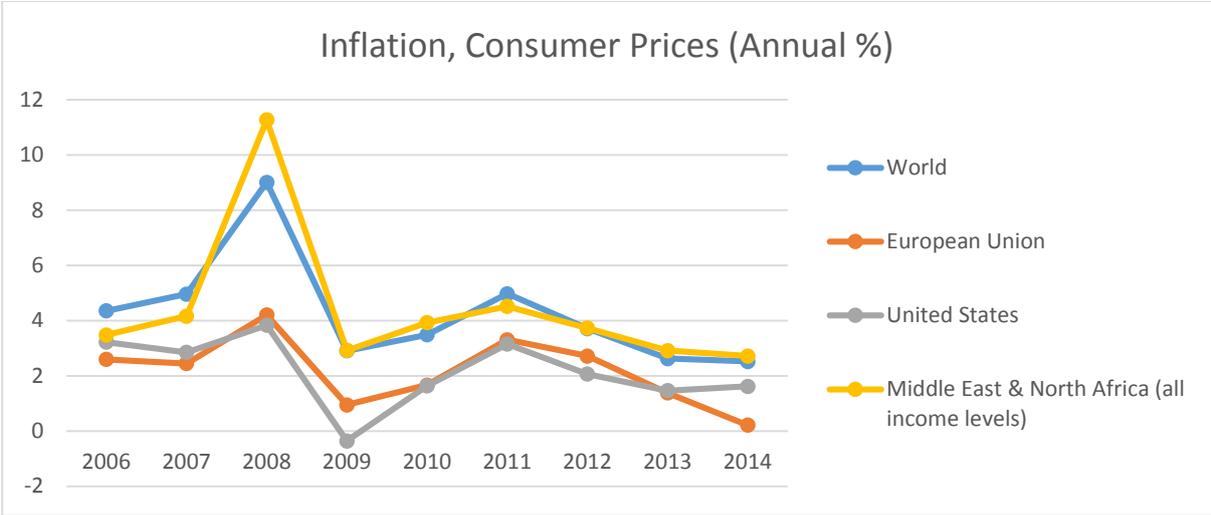


Figure 8 Inflation, consumer prices (annual %) (World Bank, 2015)



Figure 9 Dow Jones Equal Weight U.S. Issued Corporate Bond Index⁶ (DJindices.com, 2015)

⁶ This index represent the market performance, on a total-return basis, of investment-grade bonds issued by leading U.S. companies. Base value: 100 as of December 31, 1996. (S&P Dow Jones Indices LLC. 2012a)

5.1.4. Currency Risk

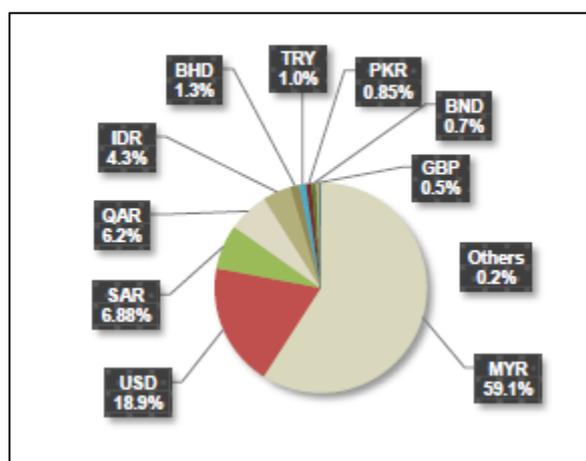


Figure 10 Sukuk Issuance by Currency (1H14)(Rasameel, 2014)

Sukuk was issued worldwide aside from the local currency of the issuer, also in foreign exchange to tap the global funds. Figure 10 shows that during the first half of 2014, USD-denominated *Sukuk* issuance accounted for almost 19 percent of global *Sukuk* issuance. As Malaysia is one of the major *Sukuk* issuers, either at the corporate level or sovereign level, the amount of *Sukuk*-issuance in Malaysian ringgit is not surprising.

In April and May 2015 two of *Sukuk* issuers powerhouse, Malaysia and Indonesia, issued a USD-denominated sovereign *Sukuk*. In mid-April, the Malaysian government issued a USD 1.5 billion dual-tranche *Sukuk* that was split into USD 1 billion 10-year tranche and USD 500 million 30-year maturity (Wong, 2015a). The government of Indonesia follows suit in the 22nd of May by issuing USD 2 billion *Sukuk*, world's largest ever single-tranche *Sukuk* (Wong, 2015b; Ministry of Finance, 2015). The Indonesian *Sukuk* garnered considerable demands proven with oversubscription of 3.4 times and was traded above par in the early trade (Ministry of Finance, 2015; Wong, 2015b). Both sovereign *Sukuk* attracted international funds from a diverse geographic location, with 41 percent of the Indonesian *Sukuk* investors are from the Middle East, 21 percent from the U.S., 16 percent from Europe, 12 percent from Asia (ex-Indonesia) and only ten percent from domestic investors (Ministry of Finance, 2015). For the Malaysian 10-year *Sukuk*, Asian investors (ex-Malaysia) was recorded to have bought 22 percent of the *Sukuk*, Middle East 25 percent, U.S. ten percent and Europe 16 percent (Wong, 2015a).

The above example shows that both the investors and issuers of *Sukuk* are exposed to the international currency fluctuation. Figure 11 shows that the dollar is in an uptrend against the Malaysian Ringgit. That means the domestic buyers of *Sukuk* will have higher purchasing power because for each one dollar they can get more ringgit. Unlike conventional finance, risk management in Islamic finance, such as currency hedging, is under scrutiny for its possibility to violate the *Sharia* compliance (Ahmad & Halim, 2014; Visser, 2009). Nonetheless, there is still a possibility to hedge the currency risk as the market for derivatives currently exists in numerous Islamic countries, such as Malaysia and Turkey (Visser, 2009).



Figure 11 Malaysian Ringgit per 1 U.S. Dollar (Bloomberg, 2015)

Type of Risk	Bond	<i>Sukuk</i>
Credit Risk	Bondholders are exposed to the risk of bankruptcy.	<i>Sukuk</i> holders are exposed to the risk of bankruptcy but with clear ownership of the specific asset.
Interest Rates	Fluctuation in the interest rates affects price and yield of the bonds, in turn affect the return of the bondholders.	Fluctuation in the interest rates affects price and yield of the bonds, in turn affect the return of the <i>Sukuk</i> holders.
Inflation	Inflation affects the buying power of the bondholders that influence the required return.	Inflation affects the buying power of the <i>Sukuk</i> holders that influence the required return.
Currency	Currency fluctuation affects the return of international bond holders.	Currency fluctuation affects the return of international <i>Sukuk</i> holders.

Table 4 Differences between *Sukuk* and Conventional bonds

5.2 Characteristic of *Sukuk* and Bonds during the Financial Crisis of 2008

5.2.1. 2007: Massive Downgrade of Mortgage-backed securities

Both *Sukuk* price and Bonds price are affected by these events. Figure 6 and figure 9 show that during 2007 until early 2008, both prices of *Sukuk* and bonds was on a downward trend. However on the second half of 2007, bond prices were seen going upward for a brief moment, unlike *Sukuk* prices, before continuing its free fall to 85.68 on October 2008.

The dropping price of the bond can be associated with the increasing risk on the market. As numerous companies worldwide filed for bankruptcy, the investors seek a higher return to compensate the risk, which made the price fall. The investors became less passionate on riskier assets that in turn pushed up the cost of borrowing (Cordahi, 2007). Investment firms began reducing positions in their mortgage units from July when increased delinquencies on home loans to borrowers with poor credit histories caused a deterioration in the price of mortgage-related bonds (Onaran, 2008). A large number of planned bonds issuance, including Islamic bonds, from the Middle East, was also delayed because of the emergence of the crisis (Cordahi, 2007).

5.2.2. January-July 2008: The Largest Single-Year Drop In US Home Sales In A Quarter Of A Century.

During the end of January, the analysts stated that that the US home sales was plummeting. Following the news, the *Sukuk* price was seen unchanged, still on the downward trend. The bond price, however, gained a brief upward momentum to 103.50 until early February before declining further. There was no fundamental reason that can cause the sudden increase of bonds price if we look on figure 1, figure 2 and figure 3. As the house sales plummeted, the house price also plunged. The GDP growth in the U.S., Japan, U.K. and the World were decreasing, and the real interest rates were reduced to spur growth. As there was no fundamental factor that can support the bonds price's upward movement, therefore it is likely a move based solely on technical reason.

Mortgage losses and writedowns⁷ was causing many companies to go into financial difficulties. Total losses are more than 34,000 jobs for the previous nine months and assets valued almost USD 200 billion (Onaran, 2008; Cahill & Burton, 2008). The investment industry especially was hit the hardest, since the banks now require higher liquidity (collateral) to support outstanding loans, even when the loans is backed fully by the U.S. government (Cahill & Burton, 2008). At least six hedge funds totaling more than USD 5.4 billion was forced to liquidate since the February because the lenders raised borrowing rates tenfold with new claims for extra collateral (Cahill & Burton, 2008). But this was just a continuing trend because investment companies had started reducing their invested capital in the mortgage since July the previous year, when rising trends of house lending to the troubled borrowers led to a decline in the price of bonds related to the loans (Onaran, 2008). As a result on May until July 2008, two prominent

⁷ A reduction in the book value of an asset.

names on the U.S. financial market was in deep trouble. Bear Sterns was acquired by JP Morgan while IndyMac filed for bankruptcy.

5.2.3. September-December 2008: TARP, First *Sukuk* Default, and U.K. Bailout

In just a week, the financial world was shocked by the numerous negative news. Lehman Brothers filed for bankruptcy on 15 September, UK's largest mortgage lenders HBOS was acquired by Lloyds TSB, and Goldman Sachs and JP Morgan Chase changed their company's status to banking holding companies. Following all these negative sentiments on the market, the bond index falls 6.53 percent in September. The *Sukuk* price remains largely unaffected, seen by the continuing its slightly-downward trend.

One of the biggest drops on the *Sukuk* index was on 29 September to 30 September, when the *Sukuk* index lost 5.16 percent in one day. During this time, the bond price index was even barely changed. The price of bonds plunged 6.71 percent from the end of September until 17 October before rebounding until the end of the year. The plunged of *Sukuk* and bond during this period can be attributed to Ireland's situation, the first European country to slide into recession (appendix one). However, the rebound in bond price after the mid-October was an effect of the Troubled Asset Relief Program (TARP). The U.S. government on early October passed the TARP program to "help stabilize the U.S. financial system, restart economic growth, and prevent avoidable foreclosures." (U.S. Department of the Treasury, 2015). The TARP programs initially were entrusted with USD 700 billion to stabilize the banking institutions, restart credit markets, stabilize U.S. auto industry, stabilize American International Group, and help struggling families avoid foreclosure. Even when the value of TARP was later reduced to USD 475 billion, the effect remains strong on the market.

Apparently, TARP was not strong enough to lift up falling *Sukuk* price. The *Sukuk* index still continuing its free fall, unlike the bond. The reasons are the first *Sukuk* default, of East Cameron Partners, and falling oil price (figure 12), in which the Middle East was hurt the most. From its highest price of 147.27 in July 2008, the crude oil price dropped 78 percent to the lowest price of 32.40 in December 2008. The falling oil price undermined demand from the vast pool of Middle East investors, in which, together with Asia, are the main issuers and buyers of Islamic bonds (Oakley, 2008).



Figure 12 Crude Oil Price (Investing.com, 2015)

5.2.4. 2009: Global Stimulus Package

The financial crisis spread worldwide and dragging down world's GDP growth (figure 1). To restore the global growth leaders of the Group of Twenty (G20) met in London in April 2009, called the London Summit, to produce a solution for the global financial crisis. The summit produced a funding pledge for programs worth USD1.1 trillion to recover credit, growth and jobs in the world economy (G20 Leaders, 2009). Together with the measures taken nationally, the program constitutes a global strategy on an unparalleled scale. The total value of stimulus in the G-20 amounts to about USD 692 billion for 2009, encompassing 1.4 percent of their joined GDP and just over 1.1 percent of global GDP (Prasad & Sorkin, 2009).

The move by G20 Leaders surely boost the bond price (figure 9), *Sukuk* price (figure 6), and even the oil price (figure 12). The program's announcement helped reverse the declining bond price and it can be seen the price is now on an upward trend onwards. As for *Sukuk*, the announcement really helped kick-start the *Sukuk* price recovery. Unlike bond price, the *Sukuk* price was in continuous decline until the announcement of the global stimulus program. From April onwards the price of *Sukuk* was seen rising robustly, a staggering 38.21 percent from the lowest point 73.95 on 4 April 2009 to 102.21 on 7 October 2009 (Figure 6).

During late November, a huge subject hit the *Sukuk* world with the probability of a *Sukuk* default from Dubai public company, Nakheel. The issue brought an enormous shock to the market, especially when the investors thought that the *Sukuk* is guaranteed by the Dubai government (Salah, 2010; Wijnberger & Zaheer, 2013). The news hit the *Sukuk* market really hard, clearly reflected with the *Sukuk* index dropping 4.95 percent overnight after the announcement (figure 6). The further decline in *Sukuk* price was stopped when Abu Dhabi announced on 14 December that it will bail out the company, thus averting the default (Anwar, 2009). From the date onwards, the *Sukuk* index is seen in a steady upward trend.

5.2.5. 2010-2011: Bailout in the Eurozone

The period of 2010 to 2011 was marked by the turbulence in the country-level defaults such as bailouts to Greece and Ireland. Before the bailout, Greek's bond rating was downgraded to junk status, reflecting doubt that the country will be able to pay its debt. When a country's bond rating is downgraded, this means the borrowing cost (yields) for the bonds will go higher because investors want a higher return in exchange for the greater risk. As the yields and price of a bond have an inverse relationship, if the yields of the *Sukuk* and bond increase then the price will fall. When the Greek sovereign bond was downgraded to junk status on 27 April and bailout were agreed on 2 May, it had no effect on both *Sukuk* and bond price (figure 6 and figure 9) as both securities still continue their upward trend.

On 2011, there were another two major European bailouts which are Greek and Portugal. Another high ranking news was when the rating of U.S was even downgraded by S&P. Nonetheless, this news had no noticeable impact on both bond price and *Sukuk* price.

An explanation for why the bond and *Sukuk* price were not affected was because of the Quantitative Easing (QE) program by several countries including U.S. and the U.K. QE is an unconventional monetary policy when the central banks buy financial assets such as government bonds in order to reach their inflation target (Bank of England, n.d). Krishnamurty and Vissing-Jorgensen (2011) found evidence that in the U.S., QE was proven able to drive down the yield on all bonds. When the yield was able to be pushed down, the price of bonds rose as evident on figure 9.

Financial crisis main events	Main differences	
	<i>Sukuk</i>	Bonds
2007: Massive Downgrade of Mortgage-backed securities.	Negative effect on <i>Sukuk</i> Price.	Negative effect on bond Price.
January-July 2008: The Largest Single-Year Drop In US Home Sales In A Quarter Of A Century.	Negative effect on <i>Sukuk</i> Price.	Negative effect on bond Price.
September-December 2008: TARP, First <i>Sukuk</i> Default, and U.K. Bailout.	Falling oil price was an additional negative sentiment.	Negative effect on bond Price.
2009: Global Stimulus Package.	Nakheel default was an additional sentiment that cause <i>Sukuk</i> price to fall.	Positive effect on bond price.
2010-2011: Bailout in the Eurozone.	The <i>Sukuk</i> price was unaffected.	The bond price was unaffected.

Table 5 Differences between *Sukuk* and Conventional Bonds during Financial Crisis 2008

Chapter 6 Conclusion

This chapter provides a summary of all the data and analysis that was presented in the previous sections, and a concluding remark.

Conventional bonds and *Sukuk* have fundamental differences that make these two securities different. On the other hand, both *Sukuk* and conventional bonds share several characteristic related to its exposure to risks. In terms of the underlying asset, *Sukuk* has to be based on a real asset to ensure the *Sharia*-compliance. This characteristic makes *Sukuk* similar to secured bonds in which a secured bond is tied to a specific asset as the collateral. One problem that could arise is during a *Sukuk* default. If the country's current regulation does not adequate to address the complexity that could arise from a *Sukuk* default, it could undermine investor's confidence towards the financial system and even the government's ability to protect the rights of the investors.

The interest rate and inflation have the same effect to *Sukuk* as it has to bonds. The inverse relationship between the price of bond and yield are also visible in *Sukuk*. The increasing inflation will push the interest rate and yield upward. The upward push on yield will in turn cause a drop in the price of *Sukuk* as well as in the price of bonds.

The worldwide issuance of *Sukuk* exposes the securities to the currency risk associated with the global financial transaction. A sudden and unforeseen fluctuation in the currency market will shock the *Sukuk* market in similar manner to the bond market. A hedging strategy that is usually used in the risk management of conventional finance can also be used in managing the currency-related risk. However, the practice of hedging in the *Sukuk* market is stricter as it needs to follow the *Sharia* compliance, mainly to avoid speculation.

As *Sukuk* and conventional bonds share the same exposure to risk, their performance during the financial crisis of 2008 was also affected by the same sentiment to some extent. On 2007 during the massive downgrades of mortgage-backed securities, both *Sukuk* market and the conventional bond market were negatively affected by the issue. The pattern of *Sukuk* performance and the bond performance during January to July 2008 was not similar with no fundamental reason. The anomaly perhaps was attributed to technical reason, an effect emerged as a result of trading and speculation activities on the financial market.

The performance of *Sukuk* and conventional bonds differs substantially from the last half of 2008. Another characteristic was found in the close relation evident between *Sukuk* and the situation in the Middle East. The fall of oil prices was found to have negative effect on the Middle East economies. The sentiments were strong enough to affect the global *Sukuk* price negatively.

The financial crisis almost created a high-profile default involving a public sector company. When there was a fear that the Nakheel would default on its *Sukuk*, investors across the globe reacted negatively even when the performance of bond are on an upward trend. Only when the

government stepped in to solve the problems, with bailout and changes in the regulations, the default could be averted. This proves that the Sukuk industry is still in a trial-and-error phase, but with a big room for improvements.

The Islamic finance industry, especially *Sukuk*, is still growing in an unprecedented manner. This study adds a short and simple overview of the differences between *Sukuk* and conventional bonds where it is needed to enrich the research in this particular area. The added contribution to the pools of knowledge in the *Sukuk* industry will help in understanding how the *Sukuk* will perform under an environment similar to the financial crisis of 2008.

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Appendix 1

Major Events on the Financial Crisis 2008

2007	
Jan-Jul	Subprime Mortgage underwriters Ownit Mortgage Solutions and New Century Financial Corp. filed for bankruptcy. Massive downgrades of mortgage-backed securities by rating agencies.
August	Troubles in the credit sector, especially mortgage, spreads into the markets. The spreads caused an increase in the haircuts on repo collateral. The issuers of asset-backed commercial papers have trouble rolling over their outstanding certificates. Investment funds in France freeze redemptions.
9 Sept	Run on U.K bank Northern Rock
2008	
24 Jan	Analysts announce the largest single-year drop in US home sales in a quarter of a century
14 Mar	The prominent investment bank Bear Stearns is bought out by JP Morgan, considered as the biggest casualty of the crisis to this point.
07 Jul	IndyMac, one of U.S big mortgage originator, filed for Chapter 7 Bankruptcy.
15 Jul	U.S. Securities and Exchange Commission issues and order banning naked short-selling of financial stocks.
07 Sept	The US government bails out Fannie Mae and Freddie Mac – two huge firms that had guaranteed thousands of sub-prime mortgages
15 Sept	The prominent American bank Lehman Brothers filed for bankruptcy, as a result for its heavy exposure in the sub-prime mortgage, provoking worldwide financial panic
17 Sept	The UK's largest mortgage lenders, HBOS, is bought by Lloyds TSB after a huge drop in its share price
21 Sept	The stock markets performance of US investment banks was deteriorating. Two renowned financial institutions, Goldman Sachs and JP Morgan Chase, changed their businesses status to banking holding companies.
30 Sept	Shortly after becoming the first European country to slide into recession, Ireland's government promises to underwrite the entire Irish banking system.
October	The Troubled Asset Relief Program (TARP), which at that point bought or insured toxic sub-prime mortgage securities from the major banks, was passed on 3 October.
08 Oct	During the bad week for the stock market, eight central banks coordinated attempt to ease pressure on borrowers by cutting their interest rates by 50 basis points. The central banks involved was including the Bank of England, the European Central Bank, and the Federal Reserve.
13 Oct	To avert the collapse of the UK banking sector, the British government bails out several banks, including the Royal Bank of Scotland, Lloyds TSB, and HBOS.
16 Oct	First <i>Sukuk</i> default happened to a US oil and gas company East Cameron Partners (ECP). ECP was unable to pay the periodic returns on its Sukuk that was issued in 2006 and filed for Chapter 11 bankruptcy protection.
07 Nov	Figures show that 240,000 Americans lost their jobs in the last month
12 Nov	After criticism from high-profile economists, Hank Paulson announces drastic changes to TARP. Instead of buying toxic assets, TARP will give banks cash injections
14 Nov	The G20 meets for the first time since Lehman's went under.
2009	

02 Apr	The G20 agrees on a global stimulus package worth \$5tn
12 May	First <i>Sukuk</i> default in the Gulf region when Investment Dar, a Kuwaiti Company, failed to deliver payment on its US\$ 100 million <i>Sukuk</i> .
October	U.S Unemployment rate peaks at 10 percent
2010	
27 Apr	Greek debt is downgraded to junk
02 May	Greece is bailed out for the first time after Eurozone finance ministers agree loans worth €110bn.
28 Nov	European ministers agree a bailout for Ireland worth €85bn
2011	
05 May	The ECB bails out Portugal
21 Jul	Having failed to push the promised reform, Greece is bailed out for a second time
05 Aug	S&P downgrades US sovereign debt
2012	
12 Mar	The number of unemployed Europeans reaches its highest ever level

Table 6 Financial Crisis 2008 Major Events (Gorton & Metrick, 2012; Kingsley, 2012; LaCapra, 2008)

Appendix 2

The structures of Sukuk Ijara and Sukuk Musharaka

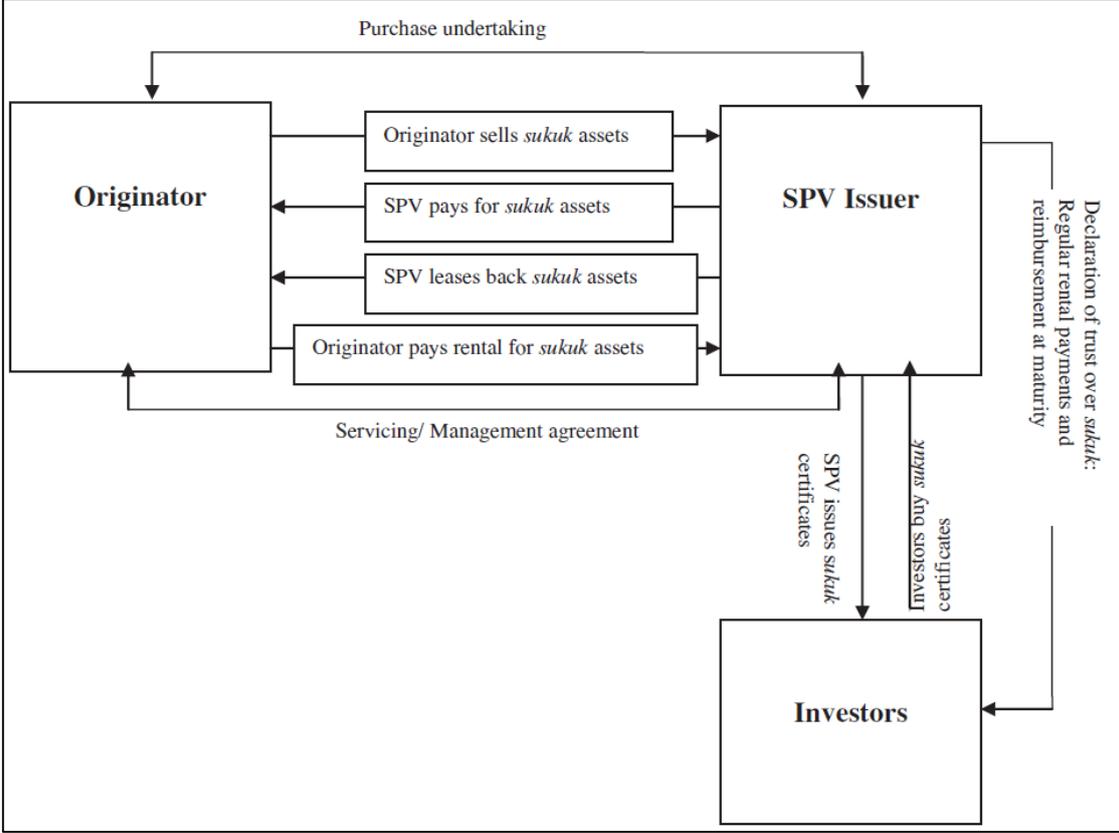


Figure 13 The Structure of Sukuk Ijara (Godlewski, et al. 2013.p759)

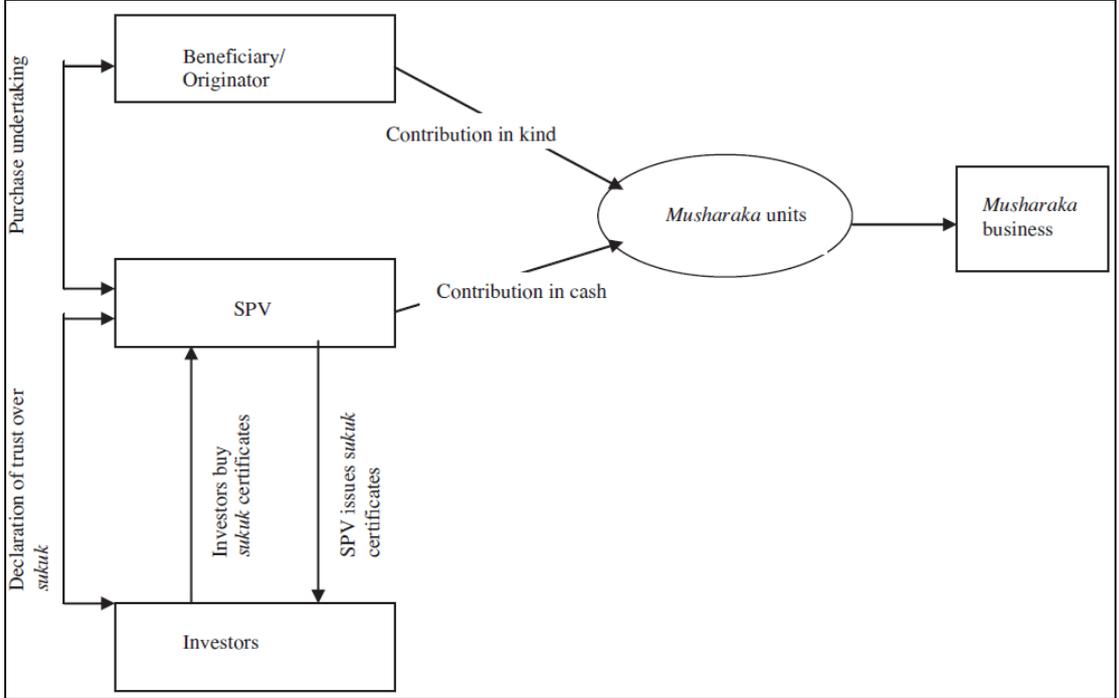


Figure 14 The Structure of Sukuk Musharaka (Godlewski, et al.2013.p.760)