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MANAGEMENT SCHOOL

‘SUKUK STYLISED FACTS’

This dissertation is submitted to the Department of Economics and the Board of Examiners of the University in partial fulfillment of the requirements for the degree of Master of Science in Money, Banking and Finance.

I hereby attest that this dissertation is entirely my own work with all references included and suitably labeled.

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Abstract

Sukuk and conventional bonds have been described by the mass media and some scholars to be identical, except for the Islamic regulations that are applied to the Sukuk bonds. Yet Sukuk are becoming a global phenomenon attracting a large group of investors and issuers throughout the continents. Highlighting the differences among both types is a crucial aspect, as these differences reveal the misleading description of their being indistinguishable. In this study the stylized facts of Islamic bonds and conventional bonds are investigated along with the impact of internal and external elements on their spreads and liquidity. My focus lies in evaluating the internal and external factors of Sukuk in the GCC secondary market for the period 2004-2010 with a comparison to the study of (He et. al 1999), that examined the factors affecting the conventional bonds liquidity in Thailand's market. The results show that coupon rate, floating and ratings are the most significant internal elements that have an impact on the Sukuk liquidity in the UAE. For conventional bonds, ratings only have a significant impact on their liquidity in Thailand's market. Moreover, sinkable, callable features along with term to maturity are not significant. For the macroeconomic factors, exchange rates have a significant effect, while the Libor rate and Dubai index are not significant. This is incompatible with the conventional bonds studies, where the latter two are the only significant factors. The regression is examined at 95% level of confidence.

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Chapter 1: Introduction

1.1 Introduction

The aim of this Chapter is to provide an overview on the concept, importance and the reason behind the popularity of Islamic bonds worldwide.

The second section highlights the study background, regarding the question that this paper is addressing, namely how similar the Islamic bonds are to the conventional bonds.

The third section gives an insight into the basic concepts of Sukuk structures, and the related Islamic principles that give an advantage regarding these securities.

This is followed by the last section that describes the structure of this dissertation.

1.2 The importance of Sukuk

The popularity of Sukuk sometimes referred to as Islamic bonds, could not be due only to their religious aspects; there could be more economic merits when they are compared to the conventional bonds (Ramasamy et. al, 2011)

Among all the rapidly growing capital raising instruments, Sukuk are becoming the most popular ones. Recent years have witnessed a surge in dealing and issuing of these Islamic securities among governments, corporate and individuals (Jobst et. al, 2008). Sukuk is a plural Arabic word. The singular is Sakk which means a certificate that represents an undivided ownership in the underlying asset. The attractiveness of Sukuk lies in its being

¹*Shari'a* ethically compliant and governed by its interpretation (Fiqh). For institutions like Islamic banks and ²*takaful* Islamic insurance companies, these securities are the best way to finance their businesses or broaden their investments when they cannot invest in securities that pay Riba or interest. In addition there are an increasing number of individual Muslims who are turning away from the prohibited transactions conducted by the conventional financial institutions, and wish for their holdings to be in accordance with Shari'a law (Wilson 2006). Moreover, Mr. Afaq Khan, the chief executive of Standard and Chartered, stated in an interview with the Financial Times (May 2011): "the beauty of using Islamic finance is that you do not lose any of your clients you can have both conventional and Muslim participations, whereas if you have the conventional products only, you cannot have Islamic participation".

For institutions like banks, Sukuk do provide a convenient way to manage their liquidity, on the one hand by entering the Sukuk market they can purchase when they are in need to dispose the excess liquidity, on the other hand when they lack liquidity they can sell the Sukuk in the secondary market. In addition, the risk will not be borne solely by the borrower, as Islamic principles advocate the provider as well to face the uncertainties and the associated risk. These facts give Sukuk the competitive advantages. Moreover, Sukuk have contributed to the development of the many Muslim countries' infrastructures where they provided the capital for mega projects.

Sukuk are an excellent means for the equitable distribution that allow all participants to be part of any project or business no matter how large or small they are, and to benefit from

¹ Shari'a: an Arabic word which literally means the path to the water hole. However in Islam it is spirit of Islamic law, that is derived from two primary resources: Quran and the example set by prophet Mohammed in the (Sunnah).it deals with many topics regarding Muslims' life, such as: politics, economics, marriage, prayer and fasting.

² Takaful: is an Islamic insurance that observes the rules of Islamic law. Basically, it is based on the policyholders' cooperation for their common good and their assistance to those who need help. These are the main principles of takaful in addition to the uncertainty (Gharar) elimination concerning subscription and compensation.

the true profits that are generated out of these enterprises. This will result in an equal wealth distribution, unlike the conventional bonds where the profits after paying the interest and the project costs remain in the hands of wealthy people, hence Sukuk distribute the whole profit in equal shares to the holders.

Regarding the limited sources of financing, the competitiveness of the financial instruments is relatively high; on the one hand each aims to attract more investors to invest in their projects, and thus finance their businesses, on the other hand investors look for diversifying their holdings which will in return reduce the associated risk and guarantee the return.

Globally, Islamic finance in general and Sukuk in particular have been in the interest of financial services; data companies, rating agencies and indexes providers such as Bloomberg, Standard and Poor's, Thomson Reuters and Dow Jones. Bloomberg is one of the biggest financial software companies to recently launch an Islamic finance platform which covers more than 1,500 Sukuk issues. The interest of such companies goes back to the importance and the constant growth of these markets all over the world, specifically in Asia and the Middle East. In addition, Redmoney, a publishing company that was established in the mid of 2004 in Kuala Lumpur, is considered to be the world's leading company that is specialised in the global Islamic finance news. Most recently Al-Barakah group in Dubai has announced the launch of the first encyclopaedia that covers the scholars' studies and ³*fatwas* regarding the Islamic financial sector along with the Sukuk issuance.

³ Fatwas: Are the Muslim scholars' interpretations for the Quran verses and the prophet's hadith (sayings).

1.3 Background

The main argument that concerns investors, institutions and scholars is whether the current Sukuk comply with Shari ‘a law, and how identical their structures, issuance, trade and the factors that affect their yields, returns or spreads are to the conventional bonds. Many studies have been tracking these issues, some of which consider the literature and theoretical features, while others analyse the empirical factors that affect returns, issuance, liquidity etc. The main empirical findings suggest that Sukuk are in some ways are different than the conventional bonds and may add new features to financial portfolios. For instance; the inclusion of Sukuk in a security portfolio reduces the associated risk, and therefore diversification can be achieved.

1.4 Research Aims and Objectives

Most of the papers have studied Malaysia’s Sukuk market, which could be for two reasons: 1- the unavailability of data in the other markets or 2- because Malaysia has been the leader in the Sukuk market for a period of time. The rapid development of Sukuk was accompanied academic research, articles and media; this in a way contributed to increasing the Sukuk issuance and participated in their success. In this paper the aim is to investigate the parallel and different stylised facts for each type of securities, in the GCC market, and more specifically in the United Arab Emirates, which have recently been competing with southern Asian countries, along with the conventional bonds in other countries. We analyse the Sukuk stylised facts in addition to the factors that affect their liquidity, with comparison to the conventional bonds.

Thus, the objectives of the study are to:

- Provide basic understanding of the concept of Sukuk.
- Explore some of the empirical researches on Sukuk area.
- Provide an overview of the Islamic concepts and principles.
- Explore some of the similarities and differences between the theoretical and empirical stylized facts among Sukuk and conventional bonds.
- Provide an academic work that may be useful to different groups besides further research.

1.5 An insight into Sukuk Structure

Sukuk do not pay a fixed interest as in the case of conventional bonds; the return is derived from the actual profit that results from an existing business or cash flows from a lease. This is because of the prohibition of receipt and payment of interest (usury), and hence Sukuk are basically backed by assets or cash flows. The investors or Sukuk holders own the underlying assets through the SPV (Special Purpose Vehicle) that finances its purchase of the asset by issuing the Sukuk. While conventional bonds represent a pure debt, a relationship between a lender and a sponsor of the enterprise; hence their earnings come from the interest that is based on these loans. This is the general idea of Sukuk structure which will be clarified more deeply in the following sections.

1.6 Structure

The dissertation is divided into six chapters. Chapter one outlines the importance of the Sukuk worldwide, their concepts and the main differences between them and the conventional bonds. It highlights the study background that concerns a lot of research and practitioners on how similar and different the Islamic bonds are to the conventional bonds, in addition to the aims and the objectives of this dissertation.

Chapter two provides a summary on the relevant empirical researches that have been examining both types of securities, along with their methodologies and findings.

Chapter three goes further deeper into the theoretical aspects that distinguish the Islamic bonds from their counterparts, which are ruled by the Islamic religion, its rules and ethics in running any country's economic. Furthermore, it questions how these securities should comply with Shari' a law to achieve the maximum benefits for the whole society, thus it gives some explanations to some of the basic Islamic principles and ethics, regarding the economic and financial sectors. It explains the prohibition of interest rate and Gharar and the logic behind each.

Chapter four gives an overview of the Islamic bonds evolution over the past decade and the history of Islamic bonds in many different countries. In addition, it provides a brief overview of Sukuk in the Gulf. It also reviews the main six types of Islamic bonds that are widely used in the financial markets, how they are structured and for what purposes they are mainly used.

Chapter five provide a description for the data and the relevant descriptive statistics for both types of securities. This will be followed by the methodology we conduct, an explanation of the data used, and finally we present the results. Chapter six concludes the dissertation and

its findings, current developments and provides some forward suggestions and finally a list of abbreviations.

1.7 Summary:

This chapter has presented an overview on the popularity and importance of Islamic bonds, which has facilitated an insight into the issues leading up to this study. Furthermore, the research aims and objectives of this study and its structure have been specified. The next chapter presents the relevant empirical research.

Chapter 2: Literature Review

2.1 Introduction

This chapter starts off with a brief explanation on the differences and similarities between Islamic bonds and conventional bonds, in addition to scholars' different perspectives and the debate upon this matter.

It also provides a short summary of the theoretical aspects and the social role of this sort of financial instrument. Along with the previous studies with the different approaches that used to distinguish between the stylised facts of the Islamic bonds and their counterparts.

2.2 Empirical Studies

Many studies have been examining the empirical differences between Sukuk and the conventional instruments. Cakir and Raei (2007) showed that Sukuk are different instruments than conventional bonds, by using Value-at-Risk (⁴*VaR*), which is widely applied in the world of finance specifically banks, they examine the effect of Sukuk inclusion on the risk structure of portfolios, in another word they examine they reduction in *VaR*. Their finding shows that the inclusion of Sukuk in any portfolio will reduce the associated risk, as the returns' correlation among the two instruments- Sukuk and Bonds- is close to zero, whereas the correlation between the conventional bonds is greater.

VaR uses three important parameters: 1- yield rate which is an important factor in calculations of term structure, hedging and many other financial transactions 2- duration 3-

⁴ *VaR*: (Value at Risk) is a risk measurement that measures the worst possible loss of any financial portfolio over a specific period of time. Which requires an estimation of the variances and covariances of the chosen securities' returns, however, this method is widely used in conventional banks.

convexity which are both important in the calculations of individual bond's market risk and the portfolios' market risk.

The aim of the study is to examine the correlation of the securities' returns, the lower the correlation, the less risky the portfolio will be and the more diversified it becomes. Therefore, they compose two hypothetical portfolios, with a value of \$100 million; the first one consists of conventional bonds and the second one is a combination of Sukuk and conventional bonds. As a result of the unavailability of Sukuk data, it mainly consists of the sovereign issuance of Sukuk, the samples include Malaysia, Pakistan, Qatar, and Bahrain countries, from August 2006 till the end of June 2007.

By using the clean price of daily and weekly bonds, they considered two methods: the delta-normal approach and the Monte-Carlo simulation, however both approaches give almost the same results, that the inclusion of Sukuk in any portfolio will lower its risk to approximately 11%-40% for Malaysia and Bahrain respectively. Although there is a slight difference between the two methods which is referred by the researchers to the normality drop in case of Monte-Carlo simulation, the assumption of normality in the case of delta-normal is also violated, taking in to account the fact that returns are fat tailed and negatively skewed.

On one hand the reduction of the associated risk could be caused by the inclusion of an instrument that its return is not positively correlated with the other one in addition to the very different behaviour of Sukuk prices. On the other hand they suggest another reason which supports the theory of the 'lower the return the lower the associated risk', as Sukuk provide lower return than their counterpart. To elaborate on these results, more research needs to be conducted using more observations as the sample they used was limited and may not be reliable, so taking into account more observations of the Sukuk secondary market will prove or disprove their results.

Ramasamy et. al (2011) support the former paper in their findings. By using the duration and the convexity for Malaysian Sukuk, they assess their sensitivity in comparison to the sovereign and conventional bonds. While the duration approximates the loss or the gain value in a portfolio when the yield rate changes in either direction, the convexity estimates the changes in duration for a certain change in yield rate; hence if the sensitivity is known the loss can be hedged easily. Duration is the first derivative of the yield curve which reveals the true value and the profitability of any financial instrument, as for the coupon rate it is useful only for the computation of cash flows.

They furthermore argue that the sensitivity is desirable as the more the sensitivity, the more the capital gain will be, which means the increase in the YR will accordingly cause an increase in the loss and vice-versa, but the effect of the decrease in YR is higher than the effect of its counterpart.

To summarize: their findings show that Sukuk are better than conventional bonds in these measures, as their risk is relatively lower considering the lower return, thus they are the best choice for risk-averse investors. Whereas the governmental bonds stand better than the Sukuk, as they are highly liquid, bear less risk, and the yield rates are less volatile.

Therefore Sukuk are a medium between the two types, they generate higher return than the sovereign ones and less than the conventional, moreover their credit risk is higher than the sovereign bonds but lower than the conventional ones. Hence a portfolio with a combination of the three types will bring down the market risk to its lowest.

Safari (2011) also examined the different yield of Sukuk and conventional bonds when they are issued by the same issuer. He argues that the yield of Sukuk is higher than conventional bonds by the same government, and it is larger for the maturities between two and twelve years, and smaller for maturities less than two years and more than twelve years.

For corporate issuance, Sukuk yields appear to be less than conventional ones with maturities of less than fifteen years, and more for maturities equal or more than fifteen years.

By using the Granger causality test, his findings show not only that Sukuk yields are different from conventional bonds, but that they also do not show any relation between the two of them. In another words the changes in one yield will not cause any change in the other, thus one may conclude that the existing valuation model for conventional bonds may not be applicable for the Sukuk.

Safari (2011) added that the issuance of Ijarah-Sukuk, which is transferred to the SPV, has a significant effect on the firms' betas, either in a positive or negative way.

To distinguish between Islamic bonds and conventional bonds, Wilson (2008) suggested the use of corporate performance indicator as a benchmark for their Sukuk pricing instead of the LIBOR, where its usage is in contradiction with Shari'a law. He adds that "using the company's share price as an indicator would be inappropriate as this would blur the distinction between Sukuk and the conventional bonds". Furthermore he argues that the use of GDP (Gross Domestic Product) in the sovereign Sukuk pricing is more preferable than the LIBOR as well. Where the GDP is high the Government can increase the taxes, therefore this will enable it to pay higher returns to the Sukuk holders and vice versa; in the case of low GDP, along with the sharing of the risk among investors and the government, this will reduce the default risk plus its obligation in difficult times. This would, according to Wilson, make Sukuk superior over the conventional bonds.

In behavioural finance perspective, Christopher et. al (2010) analyse the different reactions of investors in the stock markets to the announcement of Sukuk issuance compared to the announcement of conventional bonds in Malaysia for the period 2002-

2009. They found that the reaction of stock markets is neutral to the announcement of conventional bonds thus the share price will not be affected, but reacting negatively to the announcement of Sukuk issuance in other words affects the company's share price. However they perceive that the market readily distinguishes between the two instruments.

Moreover, they shed light on the nature and characteristics of the different issuers, by presenting the descriptive statistics of both types' issuers; they found out that companies that issue Sukuk tend to be smaller than companies that issue conventional bonds, in terms of their market values, assets, and balance sheets. But they are greater in terms of debt ratios and consequently the financial risk, which will result in an adverse selection mechanism where less-healthy firms will tend to issue more Sukuk.

On one hand, the insignificant reaction to the conventional bonds announcement was interpreted to be a result of the two opposing factors that affect the debt issuance. Cristopher et. al (2010) point out that if there is a negative signal of debt issuance, this may increase the moral hazard and the agency costs between debtors and shareholders. They add that the opposite direction of the optimistic side stems from the credible signal that might be sent to the debtor when the firm issues more debts to be creditworthy.

On the other hand they consider two interpretations for the negative reaction of Sukuk issuance; firstly, they propose that only borrowers (firms) with low return expectations will prefer Sukuk (profit-and-loss sharing) as a funding mean over the conventional bonds, and this is supported by different characteristics of the issuers of both types.

The second explanation suggests that the excess demand for Sukuk could result in the negative reaction of the stock market, as all banks wish to diversify their holdings and include instruments that are more liquid and yield higher returns than the interbank loans,

thus as these loans are not preferred by the Islamic banks, the vast majority of Sukuk is held by these banks.

This paper was criticised by Goud (2010), who argues that the sample is relatively small and limited to Malaysia, thus the results may not be completely reliable. Moreover he questions, if the bad performance of the company results in an adverse market reaction, why they did not account for the performance metric of the company to be included in their model. He suggests for instance the use of total debt assets to control the riskiness of the company. Moreover he argues that if the Sukuk were actually structured as profit-loss sharing investment, this might justify the preferences of firms to issue Sukuk, but in reality this is not how they are structured.

Ashhari et. al (2009) investigate the impact of Islamic and conventional bonds announcement on the shareholders' wealth. they calculate the market's abnormal returns after each announcement of bonds issue, using data of Bursa Malaysia for the period 2001-2006. Their findings show that there is a wealth effect on the Islamic bonds issues announcement, whereas there is no effect on the conventional bonds. Their study is consistent with previous studies' findings but contradicts others at the same time. Furthermore they examine the stock returns' determinants; by using the OLS analysis they explore the effect of bond offering size, maturity of the bond, debt ratio and a firm's total assets on the abnormal returns. The offering size has a positive and significant impact on the abnormal returns for Conventional bonds, whereas it is a negative and significant in the case

of Islamic bonds, hence the bigger issue of Islamic bonds may lead to an increase in the firm's default risk. All other determinants are insignificant. The same study was examined by Prasetya (2008 cited by Siswantoro 2010), by using some proxies such as current ratio,

total asset turnover, ROA, and debt to total ratio to examine the effect of Sukuk issuance on 6 companies for the period 2003-2007. His findings show that there was only a significant effect on the total asset turnover before and after the issuance.

Said (2011) investigates the impact of the use of Sukuk on fourteen Islamic banks' performance and liquidity during the financial crisis. His data comprises published statements and balance sheets for the selected banks that use Sukuk for the period of 2007-2009. Said employs two stages; in the first he calculates some financial ratios to determine the strength, profitability and efficiency of the selected bank. In the next stage he runs a regression to examine the sensitivity of Islamic banks' performance that use Sukuk. Although the findings show that Sukuk has not impacted the performance of these banks, these banks nevertheless increased the use of this financial security to provide liquidity in their operations.

Ahmad et. al (2010) investigate the sustainability of Sukuk issuance as well as the conventional bonds. They consider the economic conditions that affect both instruments issuances such as the macro economic variables GDP, foreign exchange, and international liquidity. The sample consists of 20 observations in Malaysian capital market from the period of 1990-2009, they regress the dependent variable (issuance) on the macroeconomic variables, and their finding provides empirical support for the three factors to be important determinants for the Sukuk issuers, which are: the GDP, forex and market liquidity. In the case of conventional bonds it is only limited by the forex factor. Thus they concluded that the conventional bonds issuance is massive and insensitive regardless of the economic situations, in contrast to the Sukuk issuance that are affected by these three factors. They support their results by the recent turmoil where the Sukuk issuance declined by 38% while conventional bonds issuances was not affected.

Syafirdi (2006, cited by Siswanto 2010) analyzed the effect of internal characteristics and macroeconomic factors on Sukuk pricing that were issued in Indonesia. His findings show a significant impact of currency on Sukuk pricing. Whereas all the other factors, interest rate, inflation, stock index, company performance and liquidity, are not significant factors.

He et. Al (1999) explored the impact of the internal characteristics as well as the external (microeconomic) factors on bonds' liquidity, by using the least square regression. The results show that credit ratings of the bonds, interest rates, and stock index are the only factors that affect the liquidity of Thai bonds' secondary market. While He et. al (1999) consider the bonds turnover as a proxy for the bonds' liquidity, (Alexopoulou et. al 2009) use the average spread to be the liquidity proxy across eight EU countries for sovereign bonds. Their findings show that external debt-to GDP, inflation, trade openness and exchange rate as well as the short term interest rate differential and the equity market volatility are the main long-run determinants of the bonds' liquidity.

Min (1998) in his study about the bonds' spread determinants finds that liquidity and solvency variables are significant in affecting the bonds' spread and they carry the expected signs. He pointed out that the debt-to GDP ratio, debt-service-ratio, net foreign asset and international reserves-to-GDP to be the liquidity and solvency variables, and he considers inflation rate and terms of trade to be the macroeconomic variables. He finds an inverse relation between the trade terms of a country and its bonds' spread, and a positive relation between the domestic inflation rate and the dependent variable. Moreover he argues that the international interest rate and external shock, such as oil prices, are insignificant for the bond spreads determination.

This paper will examine the effect of internal factors, such as credit ratings, issuance size and coupon bonds along with the macroeconomic factors, such as interest rates (Libor), forex and stock index that affect the liquidity of the Sukuk market in the UAE and compare the results with the factors that affect the liquidity of the conventional bonds.

Table (2.1) Empirical studies summary

Author	Date	Aim	Method	Data	Findings
Cakir & Raei	2007	Does the inclusion of Sukuk provide the required diversification!	VaR Delta Normal & Monte-Carlo Simulation methods.	2006-2007 Malaysia-Pakistan, Qatar and Bahrain Data.	The inclusion of Sukuk in any portfolio will reduce the associated risk.
Ramasamy et.Al	2011	Relative risk of Sukuk over government and conventional bonds.	Duration and Convexity.	Malaysia 93 bonds data: 31 Sukuk, 35 conventional bonds and 27 governments bonds.	Sukuk durations and convexities stand in between conventional bonds and sovereign ones and this explains the popularity of Sukuk though yield is less due to their less risky nature.
Safari	2011	Exploring the similarities and differences between Sukuk's and conventional bonds' yields in different maturities and issuers.	Graner Casualty Test.		Sukuk yields are different from conventional ones' and the changes in one of them yield will not cause any change in the other one.
Wilson	2008	Provide an analysis of Sukuk structure from a financial perspective.	Assess whether payments flow are more stable in case of sovereign Sukuk where returns are based on GDP rather than interest.		The use of GDP as a pricing benchmark would have resulted in greater payments stability.

Christopher et al.	2010	The reaction of investors to the issuance of Sukuk and conventional bonds-is there a difference?	OLS Model	2002-2009 (77)Sukuk sample issuance-(90) conventional ones- Malaysian companies.	Stock market reacts negatively to the Sukuk issuance but it is neutral to conventional bonds'.
Ahmad et al.	2010	Examining the factors that affect the Sukuk and bonds' sustainability.	OLS Model	1990-2009 Malaysia Markets.	Foreign exchange mainly affect both securities, GDP and liquidity affect on Sukuk issuance.
Syafirdi	2006	The impact of macroeconomic and internal factors on Sukuk pricing		2003-2005 Indonesia	Only currency affects the Sukuk pricing.
He et al.	1999	The impact of internal and external factors on bonds' liquidity.	OLS Model	1993-1997 Thailand.	The only affecting factors are: credit ratings, interest rate and stock index.
Said	2011	The impact of Sukuk use on banks' performance.	Regression analysis	2007-2009 LSE.	The Sukuk use does not affect the banks' performance.
Ashhari et al.	2009	Explore the effect of Islamic and conventional bonds announcement on shareholders' wealth	OLS Model	2001-2006	There is an effect for Islamic bonds announcement on shareholders' wealth, but no effect for conventional bonds.

2.3 Summary

This chapter reviewed the relevant literature to get an understanding of the different perspectives on the elements that affect both financial securities' liquidity, along with the effect of Sukuk on financial portfolios, markets and banks. In addition, it offered some recommendations in using different factors as pricing benchmarks for Sukuk.

The next chapter presents the different perspectives of some scholars and their debates upon the compatibility of Sukuk with Shari'a law.

Chapter 3: Sukuk in Islam

3.1 Introduction

This chapter presents Muslim and non-Muslim scholars' debates concerning the compatibility of Islamic bonds with Shari'a law, and how Sukuk securities can contribute in the fare wealth. This is followed with the basic Islamic principles and ethics regarding the economic and financial sectors' securities, its main concepts and their interpretations distribution in addition to the logic behind each.

- *Sukuk vs Bonds*

The similarities between Sukuk and conventional bonds stem from the fact that both have issuance and maturity dates, coupon payments and are rated. Moreover the holders are entitled to a stream of income over a specific period of time. However, many scholars such as ⁵*Mohammed Taqi Usmani*, the President of the AAOIFI (Accounting and Auditing Organization for Islamic Financial Institution), argue that Sukuk are indeed identical in their structure to the conventional bonds in many ways. Usmani adds that most of the outstanding Sukuk are incompatible with Shari'a law as many of them violate one or two out of the three essential criteria, such as the return distribution; that is currently based on a fixed interest rate plus LIBOR. Nevertheless, this makes them identical to the conventional bonds in the sense that the holders are entitled to a fixed percentage and not according to the actual generated profits. Wilson (2006) seems to agree on the close similarities between the two securities. He argues that the current Sukuk are mirrors to their counterparts, thus more imagination and efforts should be put towards improving and developing these products.

⁵ Muhammed Taqi Usmani is an Islamic scholar (in Arabic is a Mufti) from Pakistan. He is an expert in the fields of Islamic Jurisprudence and economics. He is one of the most influential authors outside the Middle East.

The trading of Sukuk in the secondary market has caused many scholars to come up with verbal fatawas that prohibited this transaction, thus public investors have raised their voices asking for an explanation for the differences between the two securities (Shaukat 2010). On the one hand, there is an important difference between the two securities. According to the AAOIFI, the Islamic bonds have been classified into three categories according to the investor's intention: Sukuk for trading purposes, Sukuk for sales purposes, and Sukuk that are held to maturity. This classification helps to determine the purpose of the investment, while the conventional bonds can be only classified into two categories: long-term and short-term. On the other hand, the determinants of the investment purpose are an issue, hence the AAOIFI needs to develop a special measurement to specify it and conclude the specific intention of the investor (Sukor et. al 2008).

While Sukuk are asset-based securities, conventional bonds are interest-based so the bond holders are no more than lenders to the bonds issuers, their returns are based on the interest rate on their loans on a regular basis, and the profits after the interest payment along with the projects' costs are entirely for the issuers. Accordingly, if losses occur, the issuer bears all of them, therefore the return is guaranteed to the holders. Unlike in the case of Sukuk where holders share the profits as well as the losses and they are not only borne by the sponsors of the enterprise. Which means Sukuk are a proof of ownership, thus Sukuk are seen to be a means for wealth distribution and risk distribution as they allow the investor to benefit from the generated returns plus being an owner of the enterprises or the underlying asset, and not to be exclusively in the hands of wealthy people. These are some of the core principles of the Islamic economic system.

The delayed payment is another feature that distinguishes Sukuk from conventional bonds, where in the latter any delayed payment will result in an interest accrued that is to be added to the principal, thus interest generates interest based on the length of the period. In the case of Sukuk, a mark-up is used (profit) over the principal at the beginning of the Sukuk life. When a delay occurs the penalty has already been charged.

Thus the aim is not to create securities that mimic the interest-based bonds as understood by the west, but rather, to develop instruments that comply with the Shari'a principles. To summarize the required core basics of Sukuk, Adam et al (2005) pointed out that this can be accomplished by conducting some essential concepts that are:

- Transparency of the rights and obligations.
- The returns must be generated from the actual business profits and not a fixed interest.
- The securities should be backed by real assets, rather than derivatives.

3.2 Theoretical Aspects

3.2.1 The social role of Sukuk

Bond markets play a crucial role in the long and short term by providing the needed credit demands for the governments through sovereign issuance, as well as for the companies that obtain funds through bonds issuance. They are the vehicle for investors too that helps them to diversify their portfolios in order to reduce the associated risk, thus gaining the periodic fixed returns. The Islamic financial instruments were found to replicate the existing conventional bonds in the Islamic countries and to add benefits to non-Muslim

countries by benefiting from the generated profits and achieve the required diversification. Hence they are an important alternative source for both the issuers and investors, either Muslims or non-Muslims. Both types share the main benefits, though Islamic bonds seem to be superior to the conventional ones in terms of their accordance with Shari'a law, its aim being the welfare of society and the alleviation of poverty. The role of Sukuk in poverty reduction stems from the opportunity that is given to individuals regardless of their living standards to invest in such instruments, share the profits and bear the associated risk that is considered to be borne by both parties; the issuer and investors, unlike the conventional bonds where the issuer bears all the unexpected loss in addition to the payment of the fixed interest rate. To clarify this point, a study by Shafi and Redzuan (2010) argues that the way poverty is reduced in terms of Islamic finance in the Indonesian market, as one of the emerging markets is by issuing Sukuk agriculture, as many poor people are still employed in the rural sector in this region of the world. Considering the different kinds of agricultural Sukuk such as ⁶*Muzar'a*, ⁷*Musaqa*, and ⁸*Mugharsa* all of them are based on the concept of profit-sharing, where one party provides the capital (land, trees, and appliances) and the other party provides the work or the cultivation. In the end they share the produced fruits or the generated profits from sales. In the case of Indonesia this will improve its economy and reduce the poverty that helps individuals to obtain their daily or monthly living incomes. Furthermore Shafi and Redzuan propose some additional requirements to guarantee the risk reduction that can result from the different types of risks which could possibly be associated with the Sukuk, such as operational risk that reflects the poor performance of the

⁶ Muzar'a : an Arabic word that means sharecropping. Muzar'a Sukuk are used to mobilize finds for this purpose.

⁷ Musaqa: an Arabic word means the irrigating or watering trees that produce fruits. In Finance this type of Sukuk is used to mobilize funds for the mentioned purpose.

⁸ Mugharsa: Planting trees. The Sukuk here are used to mobilize finds for the purpose of planting, and the holders become entitled to a share in the land.

entrepreneur, hence they suggest what is called the performance fees which can be paid to the entrepreneur as a reward or an incentive if the profits exceed the benchmarked return.

They extend their suggestions by considering the current drawbacks in the outstanding Sukuk, by means of improving the human resources education and the knowledge of Shari'a law in addition to ways for improving Sukuk structures. The government and regulators play a crucial role to further develop the different sectors that have an important contribution to the economy through the Sukuk issuance that can be achieved by providing a flexible taxation policy for such sectors.

3.3 The Religious Features of Sukuk

The significant difference between Sukuk and conventional bonds is that the former is based on Shari'a law, which calls for justice and not exploitation of others, in terms of avoiding ⁹*Riba* and ¹⁰*Gharar*. However Sukuk structuring, issuance and tradability should be in conformance with Shari'a principles. Godlewski et Al. (2011) state that three criteria must be met: 1-the sakk must represent an ownership in the underlying asset that must be in accordance with the ethical goods and not prohibited by Shari'a law such as alcoholic products or pork. 2- The payment of return must be after tax-deduction. 3-The amount repaid at maturity must represent the current market price and not the initial invested amount. According to Usmani (2007, cited by Godlewski 2011: 11) the current Sukuk violate one or more of the above mentioned criteria, in terms of lack of ownership and repayment of principals. Many studies argue that debtors tend to portray Islamic bonds as similar to conventional bonds in the way of structuring them, in order to help investors

⁹ Riba: an Arabic word that means the payment of extra money over the principal of any loan.

¹⁰ Gharar: is an Arabic noun that means "Uncertainty".

assess the risk associated with these instruments (Wilson 2008) in addition to adhere to tax regulations of the country. Moreover, the controversy of Sukuk started after the statement of Mufti Taqi Usmani, an expert in Islamic ¹¹*fiqh* and a chairman in the AAOIFI, who stated that 85% of the current Sukuk are not-Islamic. As the existing Sukuk promise to pay back the face value at the maturity date or in case of defaults which is certainly comply with the principles of the conventional bonds, and violates the profit-loss sharing principle.

3.4 Islamic Principles and Definitions

The main consideration to be applied to the Sukuk structuring is the avoidance of Riba (interest rate or usury), debt resale and Gharar (uncertainty). The word ‘Riba’ is derived from the verb ‘Raba’ which means to grow. There are different types of Riba, as Prophet Muhammed (Peace be upon him) said’’ there are seventy three different types of riba, the least of which is equivalent (in sin) to committing incest, and the worst of which is equivalent (in sin) to destroying the honour of a Muslim’’. The worst is compatible with Riba AL-Nasi’a, where money is exchanged for money with deferment, considering regular payments where the principal IS to be paid at maturity. Thus a late payment results in an increase in the amount; this type is the unequivocal Riba that causes the injustice. Many interpretations have been given to the concept of Riba, the narrow one is not to exploit poor people, and the broader is to receive the debt without increasing or decreasing in the principal amount. This is, theoretically, reflected in the principle of Sukuk which are based on profit-loss sharing, rather than an obligation to pay fixed amount of return in each period of time, where the debtor has to bear all the associated risk.

¹¹ Fiqh : is the deep understanding of Islamic law, in other word, it is the process of gaining knowledge of Islam through jurisprudence.

As Sukuk represent an ownership in an underlying asset that belongs to the holders, they have to be traded against the value of this asset, which is not happening in the actual markets. To begin with, Sukuk should be issued against tangible assets and should be traded against these assets and not against debt or cash. Thus if the Sukuk are issued against products to be manufactured in the future their trade are prohibited in the secondary market until the deliverability of the products occurs, as this incurs the sale of debt which is again prohibited by Shari'a law. Furthermore this trade involves Gharar which is the sale of items whose existence or characteristics are not certain, which makes the trade similar to gambling. Such as in the case of Sukuk Al- Salam where the reselling of such securities before the possession of the underlying asset might lead to Gharar or Riba (Al-Amin 2008, cited by Swiswantoro 2010).

In fact there are some types of Sukuk that are a mixture of assets and debt. That is still contentious among regulators and jurisdictions, as some argue if the asset portion dominates the debt portion the Sukuk become tradable. A fatwa from the AAOIFI states that if Sukuk consist of 30% of the underlying asset it should become tradable as in Malaysian markets. In the Dubai financial market, it allows for only 10% of asset composition to be traded in the secondary market according to (Kashoogie 2010).

3.5 Summary

This Chapter provided an overview on the scholars' debate upon the compliance of Sukuk with the Shar'a law. It also gave an insight to one of the main aim of dealing with Sukuk that is the wealth distribution as well as the poverty reduction.

The last section provided an insight into the main principles of Islam regarding the financial and economics ethics and morals, and the logic behind each.

Chapter 4: Sukuk Background

4.1 Introduction

The objective of this chapter is to shed light on the Islamic bonds history and their evolution throughout the globe. This will be followed by an overview of the Sukuk evolution and issuance in the Gulf.

The second section explains the structure and concepts for the most widely used types of Sukuk. Each will be illustrated by a graph.

4.2 Overview of the Sukuk Evolution

To begin with we take a look at the history of Islamic bonds, their first issuance, their structure and how they evolved throughout the last 30 years.

‘‘In the whole history, Islamic finance is a lot longer than the last 35 years’’ (Schoon, 2008 p. 12).

The roots of modern Islamic banks can be traced back to Egypt where the first Islamic bank was established in 1963 (Mit Ghamr) which was based on profit-loss sharing, in the same year Malaysia entered the Islamic financial system by establishing bank Islam Malaysia. In the UAE, Dubai was the first to establish Dubai Islamic bank, whose core aim was to provide the financing to projects throughout the countries. The most recent, according to the Financial Times (2011), is the establishment of the first Islamic bank in Oman that is authorised by the Sultan of Oman. Singapore is looking forward to being the main centre for the Islamic products on a global scale. The country has signed the free trade contract with

the Gulf countries, which will push the evolution and development wheel of the Islamic products and their industry worldwide.

Big banks, including Citigroup, HSBC and Deutsche bank, are going into Islamic business, in addition to countries like the UK, Japan and Hong Kong.

The Sukuk was first implemented in 1970, and was first introduced in Malaysia in 1999 by a non-Islamic corporation. The first global corporate issuance of Sukuk was in 2001 by Guthrie Company worth around \$500million. This was followed by a great government's issuance in Malaysia in August 2002. When it issued the first global sovereign of Sukuk, it raised around US\$ 600 million, thus becoming an international benchmark for the issuance of Sukuk (Ahmad 2010).

The Kingdom of Bahrain issued sovereign Sukuk in 2001 for the first time in the Gulf, that worth US\$25 million, followed by the Kingdom of Qatar in 2003, the Sukuk valued at US\$700 million which was the largest in 2004 (Wilson 2004). The first corporate issuance of Sukuk in Saudi Arabia was in 2004. In the same year, the federal state of Saxony-Anhalt in Germany issued €100 million structured as Sukuk Al-Ijarah. The underlying assets are building owned by the Ministry of Finance, the Sukuk were listed on Luxemburg Exchange. In 2006 United States witnessed the first issuance of Sukuk in its market.

In 2003 global Sukuk reached approximately 5.7 billion, and increased to reach \$7.2 billion in 2004.

The capital market of Shari'a-compliant assets is approximately around 6.1 billion globally as in 2008. According to Bloomberg (cited by Gros et. al 2008) this decline was caused by the most recent financial crisis that hit the financial system. The annual growth is between 15%-20%. Furthermore most of the Sukuk issuance were by Malaysia and the Gulf that was estimated in 2001 to be around \$US 780 million. It continued to grow and the early

estimates for 2011 suggested it has come close to \$34 billion. Malaysia has the dominant portion of Sukuk issuance that accounts for 63%-78% of the global outstanding Sukuk. Thus recent statistics show Sukuk growth is around \$30billion and \$25billion in 2010 and 2011 respectively. Both the GCC and Asia countries are looking for issuance to expand their infrastructure, e.g. ports, airports and educations. During the financial crisis in 2008 the issuance of Sukuk declined. Two interpretations were given for the factors that caused this decline; on the one hand the Qusai-sovereign have limited their issuance mostly due to the lack of dollar liquidity along with the pricing concerns. On the other hand, another view states that this decline resulted because of a rift between Islamic scholars' interpretations. Until now Sukuk have matured to become an internationally acceptable instrument for raising funds and meeting the increasing demand for these financial securities. What is more Shaikh and Saeed (2010) state that Sukuk can play an essential role in mitigating risk and maintaining financial stability. Sukuk have ranged from being simple sale to leasing or Ijarah. They have been used for different purposes such as petrochemical projects, aircrafts, infrastructure, real estate and many others. Most recently the Government of Palestine has issued Ijarah sovereign Sukuk worth \$50 million.

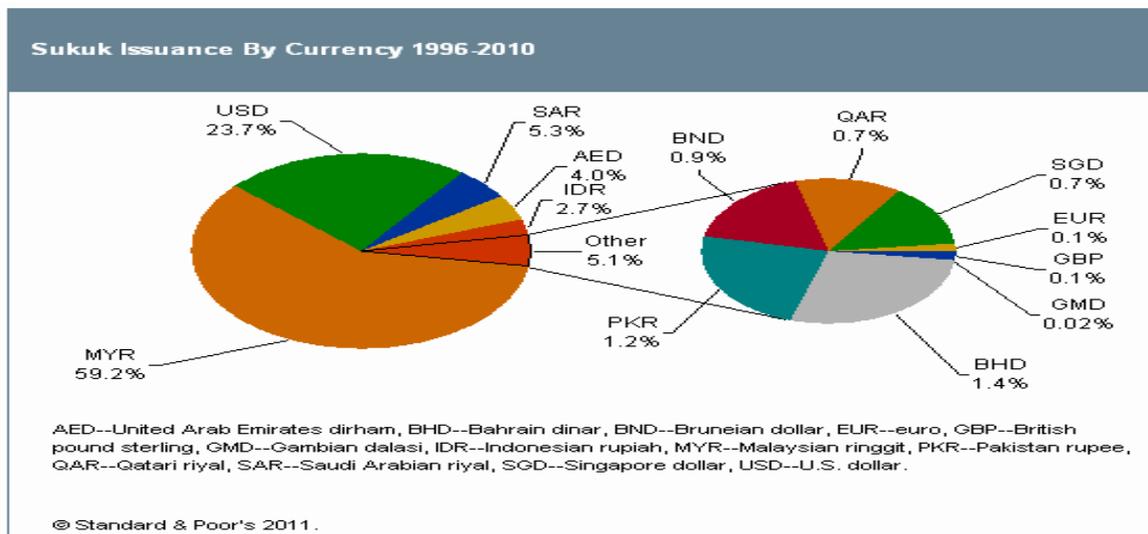
The graphs below (A, B and D) show the issuance of Sukuk throughout the period 1996-2010 categorized according to the cumulative issuance by country, country of origin and type of issuer.

4.3 Overview of the Sukuk in the Gulf

In the Gulf countries most issuances are in US dollars, against which these currencies are pegged, in UAE the issuances vary between AED, MYR and US dollars. It is anticipated that the new Gulf currency may become the denominator for *Sukuk* issuance. Standard and poor's, in their recent report, have anticipated that the GCC will play a larger role and

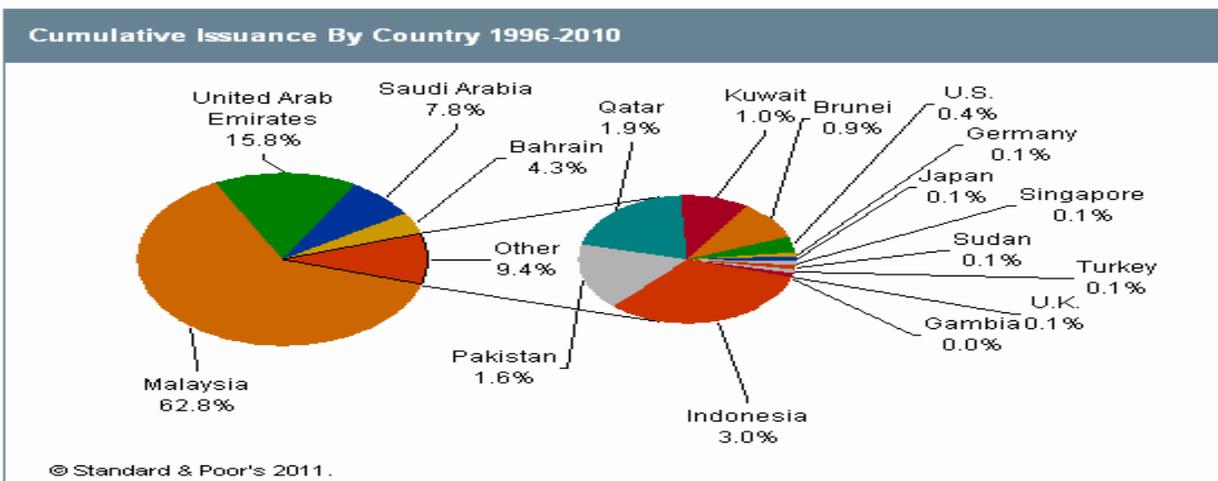
position itself in a more competitive and sustainable role compared with Malaysia's in the Sukuk market throughout the coming five years. This is due to its resilient economy. But on the other side the illiquidity of the GCC secondary market has caught many authors' attentions, compared to the short term bonds' market liquidity. Goud (2010) attributes this illiquidity matter to many reasons, such as the gap between the bids and the offers, and the continuous issuing of these financial securities which makes the secondary market less attractive. Wilson (2006) supports the latter reason, by arguing that the demand for Sukuk exceeds its supply.

Graph (A)



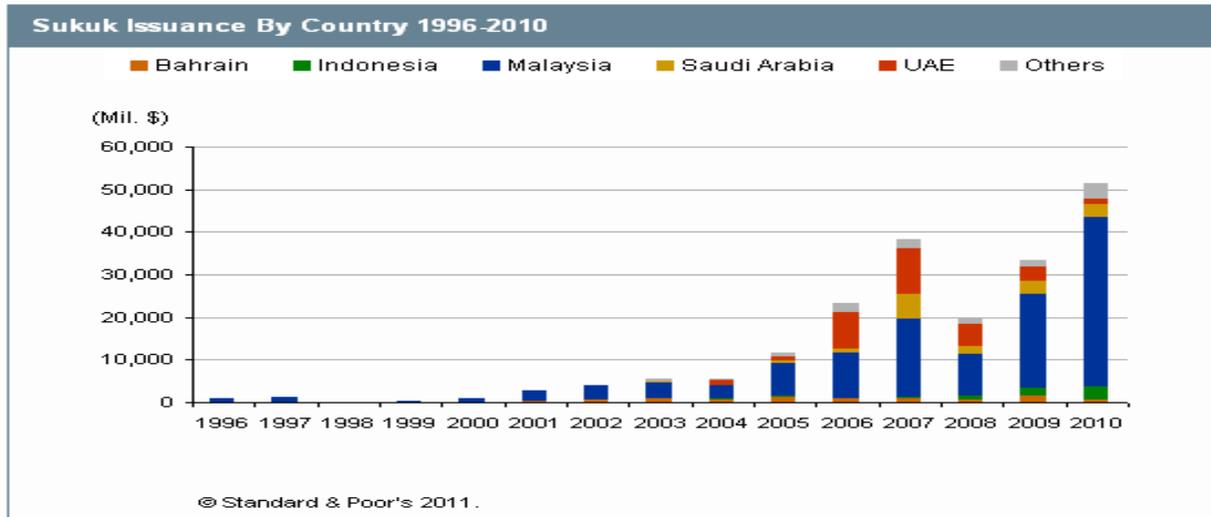
In graph (A) the Malaysian Ringgit represents the biggest portion of the Sukuk issuance, with 59.2% of the total. It is important to notice that not only Malaysia issues Sukuk with ringgit currency; in the GCC and specifically in Dubai and Abu Dhabi, many issues in ringgit have taken place. The U.S dollar is the second biggest, representing 23.7% of the total issuance. Generally, short terms securities are more liquid and less volatile, while long term securities are illiquid and more volatile, thus investors are less likely to purchase the long term Sukuk, and this clarifies the tendency of the GCC for short term issuance rather than long terms.

Graph (B)



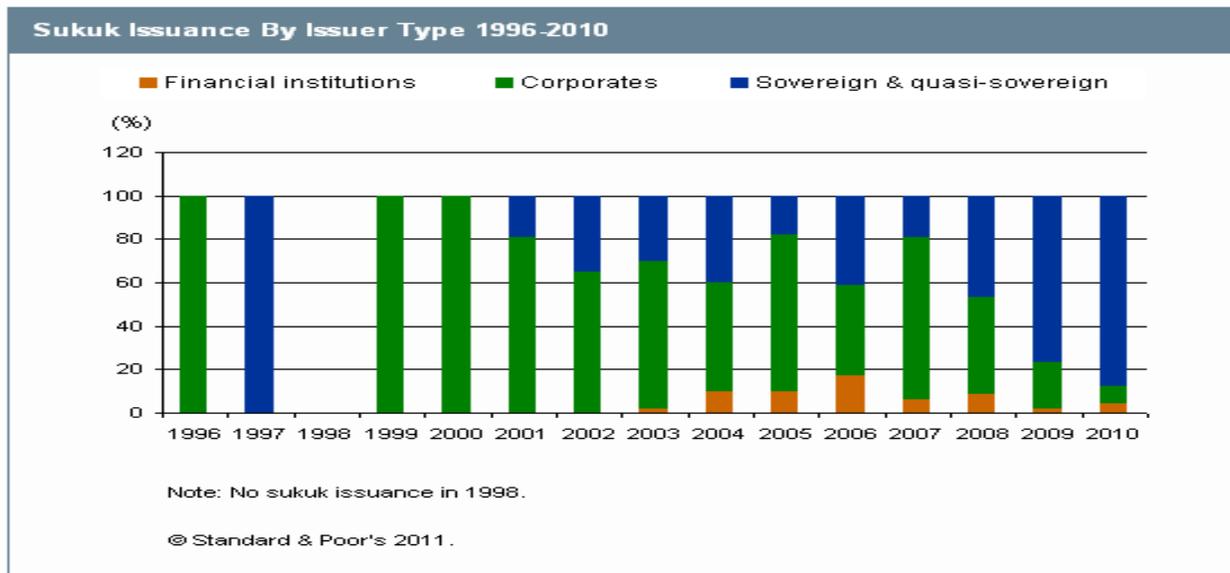
Graph (B) shows the issuance size of Sukuk categorized by country, for the period 1996-2010. Clearly the bulk is in Malaysia which represents 62.8% of the world's issuance. The United Arab Emirates come next with the biggest issuance in Dubai state, over the period 1996-2010. Recently, Nakheel, a member of Dubai world which is supported by Dubai Government, has listed the biggest Sukuk issuance on the Dubai International Financial Exchange that worth \$3.52billion, according to Standard and poor's(2011).

Graph(c)



Graph (C) shows the issuance amount of Sukuk in mainly different Asian countries, categorized by the year of issuance. It is clear that the dominant issuance over the period from 2005-2010 was in Malaysia. United Arab Emirates comes next with the biggest issuance in 2006 and 2007 respectively. During the financial crisis the UAE issuance has declined as seen in the graph for the period from 2008 till 2010.

Graph (D)



Graph (D) shows the type of Sukuk issuer. Notably corporate and sovereign represent the top issuers with 51% and 53% respectively. In 2010 the sovereign and Quasai-sovereign issuance reached approximately 90% of the total issuance. Whereas corporate was the dominant issuer in 1966 and 1999 respectively. The financial institutions have the lowest portion throughout the period, however most of the sovereign Sukuk are held by the financial institutions as mentioned in chapter one.

4.4 Sukuk Structures:

There are 24 Sukuk structure available, fourteen of which are defined to be eligible by the AAOIFI (The Accounting and Auditing organization for Islamic Financial Institutions). These Sukuk structures rely on the ¹²SPV (Special Purpose Vehicle) whose role is to issue the Sukuk to finance the purchase of the underlying asset, and to distribute the returns, whether it is in the form of rental, sale, or a combination of both, to the Sukuk holders. Therefore, the SPV plays an intermediary role among the seller and the buyers. The significant difference among Sukuk is being tradable or non-tradable, where they represent assets they become tradable in the secondary market, if they represent debt such as in Salam or Istisn'a they can't be traded until their maturities.

** The most used forms of Sukuk are the following:*

- **4.4.1 Sukuk Al-Ijarah (Lease):** the most popular form of Sukuk, which is in this case represents a contract to which a party sells an asset to another who in return rents the asset back to the seller, so where the buyer issues Sukuk to finance the purchase of the asset. The rental payments are to be distributed to the Sukuk holders, and they are determined in advance.

Because Ijarah Sukuk are asset-backed, they become tradable in the secondary market, and the price is determined according to the market forces. The drawbacks in such financial securities are that they are subject to real market risks, such as the potential changes in the assets' pricing as there might be some maintenance and insurance costs, thus the return

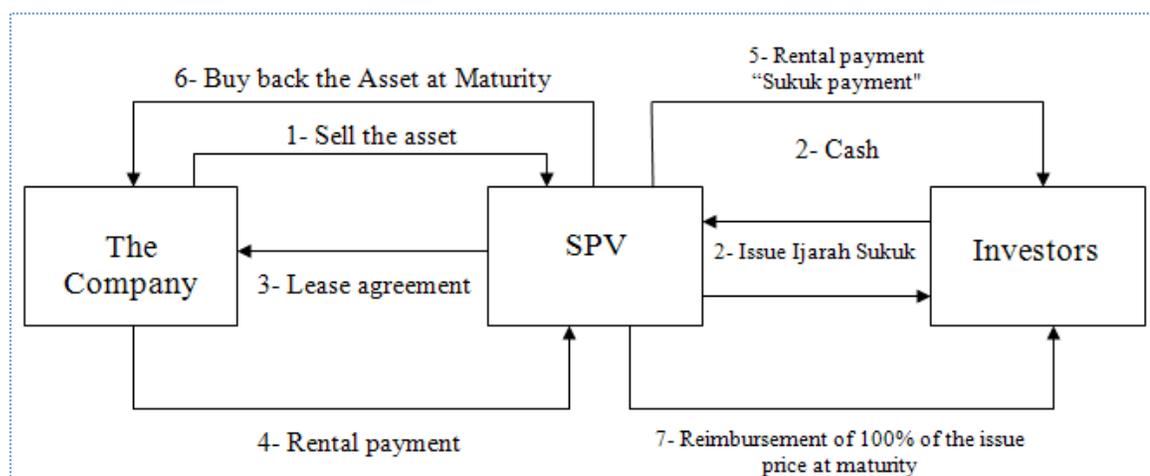
¹² SPV: Special purpose vehicle is a legal entity that is created to protect firms from any financial risks. A company will transfer assets to the SPV or use it to finance large projects without putting the firm at a financial risk.

might not be fixed. Hence the holders bear all the responsibilities of what happens to their properties.

Germany was one of the non-Islamic countries that issued Al-Ijarah Sukuk in 2004. Saxony-Anhalt has issued €100 million of Ijarah Sukuk. The underlying assets were a certain number of buildings owned by the Ministry of Finance. Those Sukuk were guaranteed by the Federal Republic of Germany and the variable returns were benchmarked to the EURIBOR. The Sukuk were listed and traded on the Luxemburg Stock Exchange.

In 2004 Bahrain announced its first issuance of Sukuk for an airport extension worth \$250 million due to mature in 2007. Needless to say, Ijarah Sukuk can be issued by governments, municipalities as well as companies.

Graph (1)



Al-Maghloth (2009)

- **4.4.2 Sukuk Al-Salam (advanced cash payment):** a contract in which a sale or a purchase of a well-defined commodity in quality and quantity occurs, hence the payment is in advance and the delivery is deferred in the future. The Sukuk holders are the owners of the Salam goods to be delivered in the future. Moreover, the Sukuk could be issued by an SPV

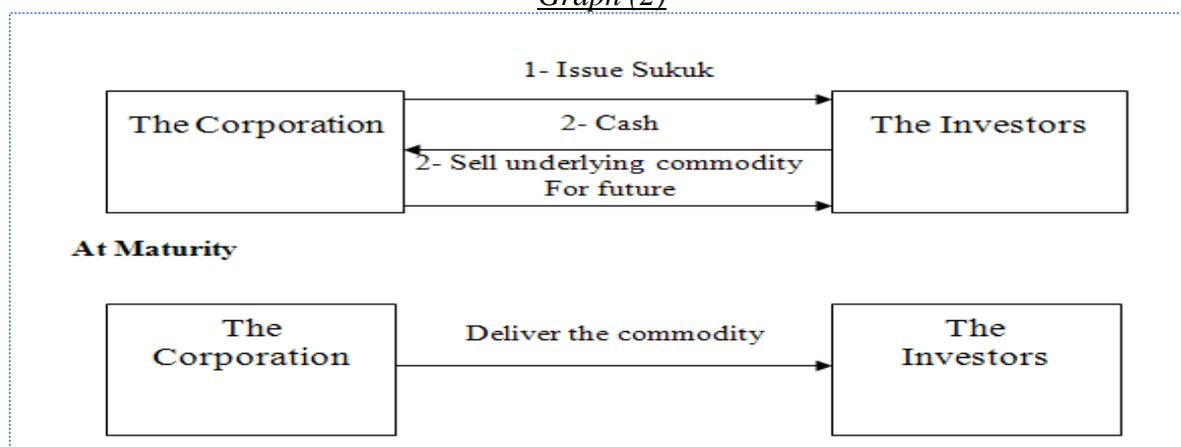
whose role is to mobilize the fund from investors to the seller. In some cases the SPV can appoint an agent to sell the commodity for a higher price, the difference in the commodity purchase price and sale price is the profit for each; the SPV and the Sukuk holders.

Sukuk Al-Salam might look like the future contracts though the difference is that there is no periodic marking in the case of Sukuk al-Salam.

The tradability of Sukuk Al-Salam is not permitted until the date of maturity, in other words when the commodity is delivered. According to Islamic Shari'a the debt-resale is not allowed, simply because a person cannot sell what he does not own. Thus these kinds of Sukuk are not attractive for investors, unless it is expected for the delivered commodity price to rise on the maturity date.

An example of Sukuk Al-Salam can be given as in Bahrain, where the underlying asset of the Sukuk of the government is comprised of aluminium. The government sells the Sukuk to a group of banks, represented by Bahrain Islamic Bank (BIB) that signs the contract and all other documents in return for the aluminium. These banks have assigned the Government of Bahrain to mark the price of aluminium to be sold at maturity date, thus providing the holders with a return that might be equal or higher than the return for conventional instruments (Dar Al-Istithmar 2006).

Graph (2)

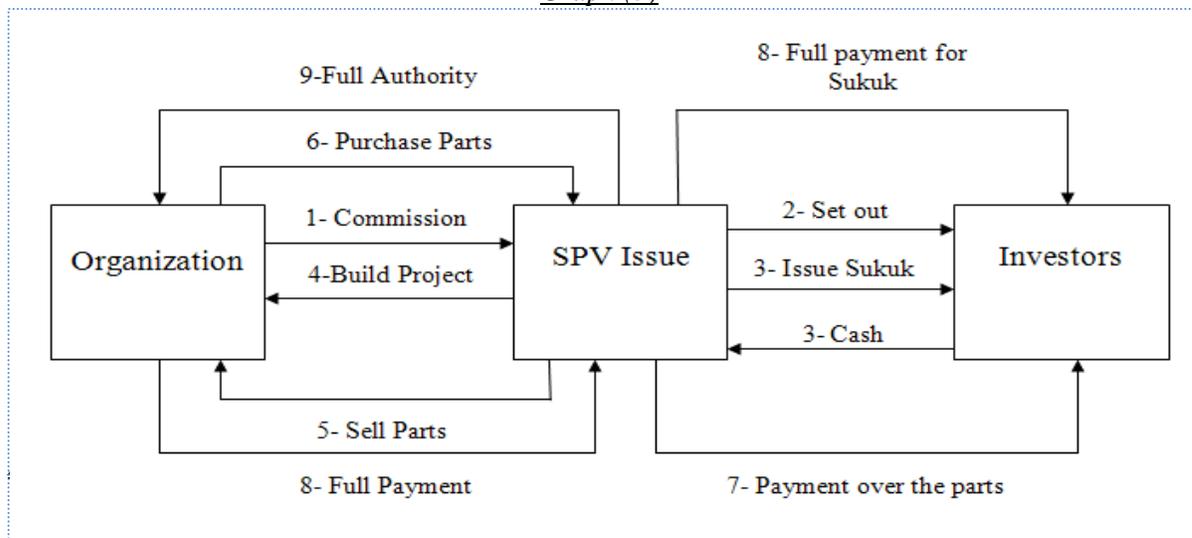


Al-Maghloth (2009)

- **4.4.3 Sukuk Al-Istisn'a:** these contracts seem to be like Sukuk Al-Salam, “they allow for cash payment in advance and future good delivery or future payment and future goods delivery” (Dar 2006 Pp: 26).

Sukuk Al-Istisn'a are useful in the projects of infrastructure, they help in transferring the funds from the buyers (investors) to the sellers (producer). Again these financial securities are disallowed by Shari'a law to be traded in the secondary market as this will include the debt-resale. Tabreed, on behalf of the National Central Cooling Company in the UAE, has issued a combination of Sukuk Ijarah Istisn'a and Ijarah Mawsufah bil themmah which total around US\$136 million to raise funds to pay off some existing debts and to expand.

Graph (3)

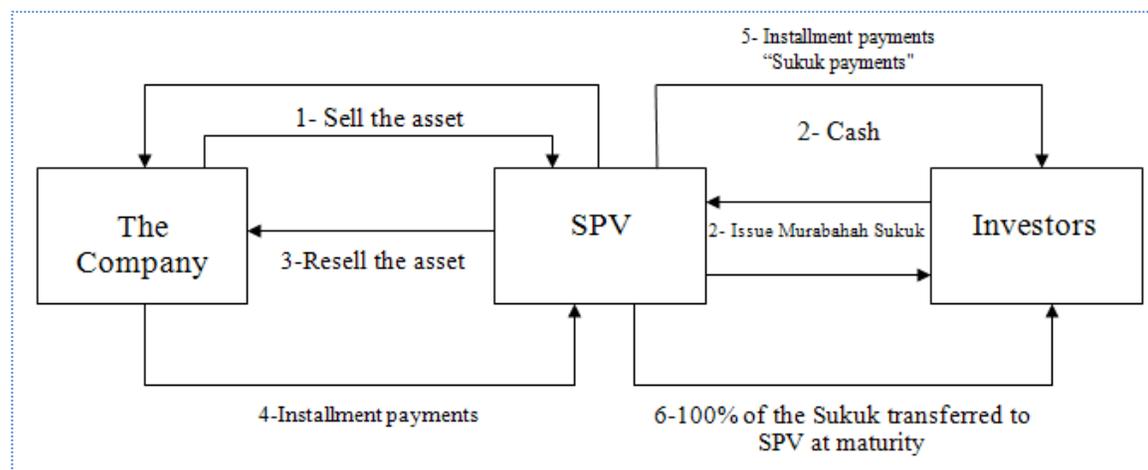


- **4.4.4 Sukuk Al-Murabaha (cost-plans):** is basically a contract of two parties, the buyer and the seller. The simple idea of this certificate can be illustrated by this example: imagine that someone needs to buy a house but does not have the sufficient funds, so they consider taking a loan. In this case, an Islamic bank under the concept of Murabaha will buy the house. To finance the purchase, the bank issues Sukuk Al-Murabaha, and the buyer agrees with the bank to buy the house at a higher price that is specified in advance. The difference

between the purchase and sales price is the profit for the investors (Sukuk holders) and the bank.

The holders of the certificates are the owners of the commodity until the maturity date when the re-sale occurs. Thus this kind of certificate represents a debt owning which it is not permissible to be traded in the secondary markets.

Graph (4)



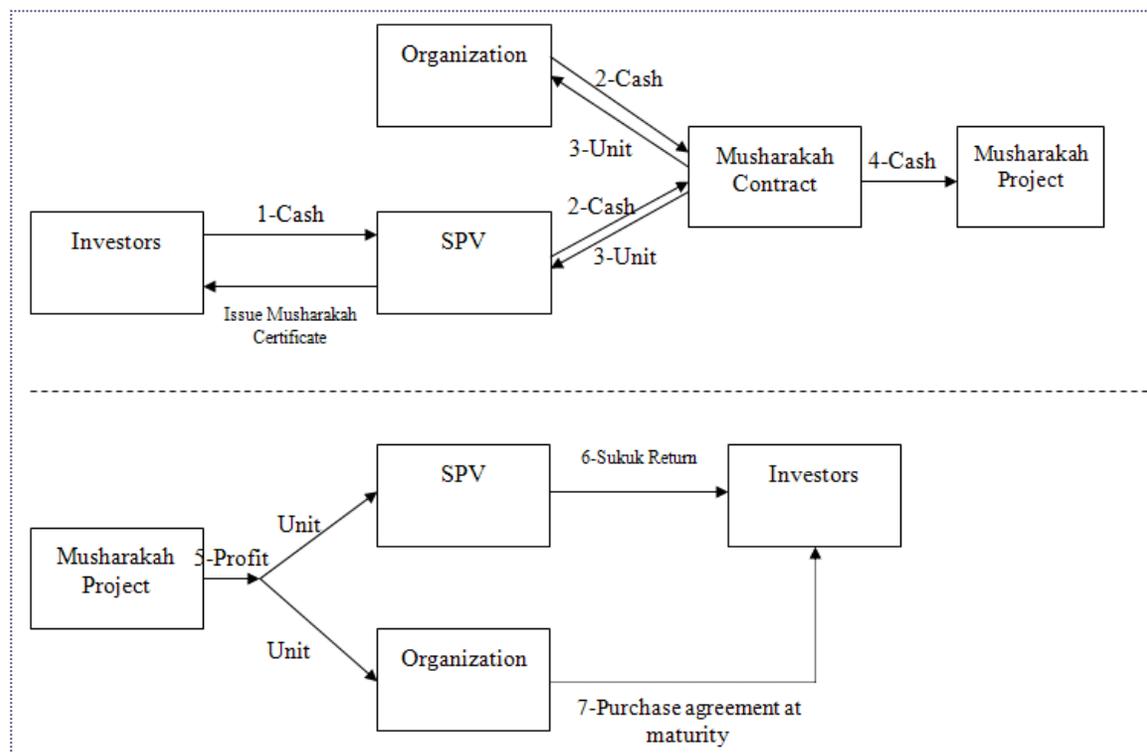
Al-Maghloth (2009)

- 4.4.5 Sukuk Al-Musharaka (equity participation):** the principle of Musharaka (partnership) is derived from a concept of sharing profits and losses. Where two parties or more participate in a joint venture or business, one party (Musharik) provides the capital (land or any physical assets) and the other party (SPV) provides the cash by issuing the certificates to the investors. Musharaka, according to Mufti Muhammed Usmani is the ideal instruments to comply with Shari'a law, considering the fact of sharing actual profits and losses, moreover providing better opportunities for investors to gain returns that could be much higher than those generated by the interest-based instruments. These instruments can be traded in the secondary market as they represent an ownership in a real project. Thus an

investor can sell his partnership portion at any time he wishes; this is close to the concept of shares.

The UAE are one of the countries that dominate this market with \$550 million of Musharaka issuance for Dubai's national airlines. The joint venture was set up to develop a new engineering centre in addition to a new building located near Dubai's airport, leased to the airline, Emirates. The profits that are generated from this venture will be distributed to the certificate holders.

Graph (5)

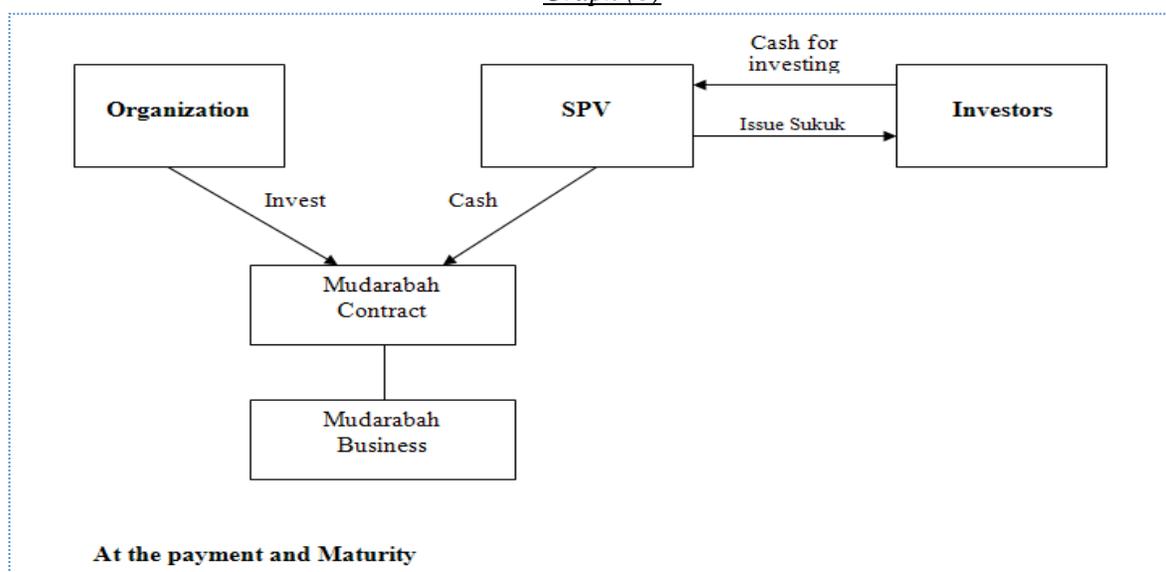


Al-Maghloth (2009)

- **4.4.6 Sukuk Al-Mudarabah (profit-sharing):** have almost the same features as Musharaka securities in that they comprise of two parties; they differ in that one contributes the capital (capital provider) and the other who has a good business idea but does not have sufficient money, thus he contributes the skills (Mudarib). Any profits are

to be distributed according to a pre-agreed ratio; losses, if any, are borne by the capital provider. Musharaka Sukuk are close to the concept of shares, they neither pay interest nor promise to pay a periodic fixed amount of money, the return depends on the varying profit. Thus Sukuk holders are entitled to the generated profit in addition to the final proceeds of capital; Shamil Bank of Bahrain raised around 360 million Saudi riyal to finance a land development. Therefore the Sukuk holders are entitled to returns generated from the subscriptions.

Graph (6)



Al-Maghloth (2009)

4.5 Summary:

This chapter reviewed the evolution of Islamic banks along with Sukuk over the past decade worldwide. It showed the increasing use of Islamic bonds from 1970 till most recent time, starting in Asia and spreading all over the globe. The issuance declined during the financial crisis that hit the financial system in the mid of 2007, yet, Sukuk still internationally accepted as an instrument for raising funds. It also summarized the most six types that are widely used Sukuk, their structures and usage.

Chapter 5: Data and Methodology

5.1 Introduction: Empirical design

The objective of this chapter is to describe the data set and present the methodology, which has been widely used by many researchers and practitioners to distinguish between Islamic bonds and conventional bonds. In chapter 2, different types of analysis and approaches were employed to examine the subject of similarities between Sukuk and conventional bonds along with the differences, in countries like Malaysia, Thailand and others. This chapter will explore and examine this theme in one of the promising future regions for Sukuk structuring and issuance, which is the United Arab Emirates, that is recently competing with the other Asian countries.

- *Data:*

The aim here is to focus on the GCC region and more specifically the United Arab Emirates. The below table (5.1) shows the features of the Sukuk that have been issued recently in the UAE which are used in this analysis. Notably, different sectors in the UAE issue Islamic bonds to finance their businesses and utilize the funds to cover their expenses. The issuing sectors in the UAE as shown below vary between governmental, real estate, financial institutions, banks, investment authorities and transportations.

The coupon rate ranges between min. {0.624} for Dubai Sukuk (governmental sector) and max. {4.9} for the National Bank of Abu Dhabi (financial sector). For the maturity period: apparently, the dominant life period of the UAE Sukuk is 5 years, though some have less maturity period and others have more, however, the maximum is 10 years. Most Sukuk

mature on time, in other words, they do not carry neither the convertible nor the callable feature, which can be converted to stocks or being called back by the issuer, nevertheless there are three exceptions where these three latter apply. Gold Sukuk for instance are sinkable, where the risk of the periodical payment default is reduced, as the issued bond is backed by funds and they are set aside on regular basis, so the payments and the coupon rate will be made as promised.

Most of the issuances' currency was in \$US dollar for the period 2004-2009 though some others were in AED (Arabic Emirates dirham) in 2008 and MYR (Malaysian ringgit) in 2010 respectively. Moreover there are three main rating agencies for Sukuk; Fitch, Standard & poor's, and Moody's excluding some of the issued Sukuk that were not rated by any of them. For the coupon rates types, eight out of fourteen are floating which follow either the LIBOR as a reference rate or the Euribor plus some different basis points for each, while the other six are based on a fixed rate that is agreed on in advance. The data were collected from Bloomberg database for UAE Sukuk as listed in the table below. For countries like UK, Germany and USA, EcoWin software was used for their data collection.

Table(5.1) Sukuk Profile (The data used in the regression analysis)

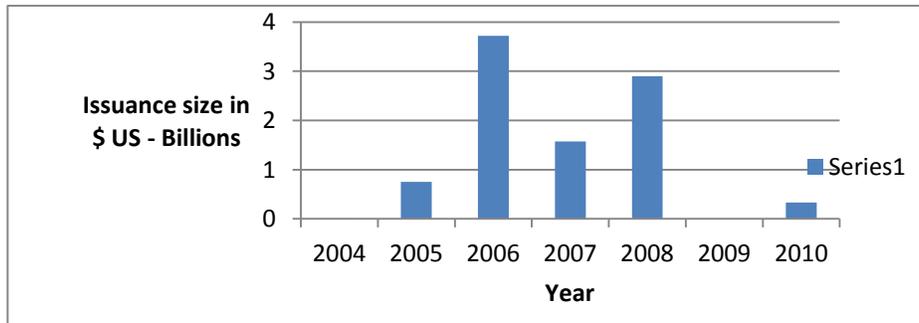
<i>Issuer</i>	<i>Sector</i>	<i>Coupon</i>	<i>Maturity</i>	<i>Currency</i>	<i>Duration</i>	<i>Ratings</i>	<i>Coupon Type</i>
<i>Dewa Funding</i>	Government Dubai Electricity and Water	3.086	At Maturity	AED	5YRS	Moody's Ba2 Fitch AA-	Floating
<i>Dubai Global</i>	Government	2.015	At Maturity	AED	5YRS	N/A	Floating
<i>Dubai Sukuk</i>	Government	0.624	At Maturity	USD	5YRS	S&P A+	Floating
<i>Gold Sukuk</i>	Real estate	1.163	Sinkable	USD	5YRS	S&P A	Floating
<i>Nakheel Develop.</i>	Real Estate	3.172	At Maturity	USD	3YRS	N/A	Fixed
<i>Nakheel Develop.</i>	Real Estate	4.407	At Maturity	AED	2YRS	N/A	Floating
<i>Nakheel Develop.</i>	Real Estate	2.75	At Maturity	USD	3YRS	N/A	Fixed

<i>National Bank of Abu Dhabi</i>	Banks	4.75	At Maturity	MYR	5YRS	Fitch AA-	Fixed
<i>National Bank of Abu Dhabi</i>	Banks	4.9	At Maturity	MYR	10YRS	Fitch AA-	Fixed
<i>Rakia</i>	Investment Authority	N/A	Callable	USD	5YRS	N/ A	Floating
<i>Tabreed</i>	Utilities/ Cooling	1.7046	At Maturity	USD	5YRS	Fitch A	Floating
<i>Tamweel Funding</i>	Financial Institution	4.31	Convertib le	USD	5YRS	S&P BBB-	Fixed
<i>Wings FZCO (Free Zone)</i>	Logistics (Transportation)	1.143	At Maturity	USD	7YRS	S&P BBB-	Floating

Table (5.2) (Sukuk issuance) UAE

Sector	2004	2005	2006	2007	2008	2009	2010
Government	\$US (1)			\$US (1.2)5Bill.	AED (3.2)Billion	N/A	
Real Estate		\$US (200) Million	\$US (3.52)Billion		AED (3.6)Billion \$US (750) Million	N/A	
Banks						N/A	MYR (1)Billion
Investment Authority				\$US (325) Million		N/A	
Utilities			\$US (200) Million			N/A	
Financial Institutions					\$US (300) Million	N/A	
Logistics		\$US (550) Million				N/A	
Total Sukuk Issuance	\$US (1)	\$US (750)Million	\$US (3.72)Billion	\$US (1.575)Billion	AED (6.8) Billion \$US	N/A	MYR (1)Billion

* The table above (5.2) shows the amount and currency of issuances in the UAE for the period 2004-2010 for different sectors. All issuances that are used in the analysis are converted to \$US dollars. This table mainly presents the diversifications in the currency of Sukuk issuance.



Graph (E) Issuance Histogram (in Million \$US Dollars).

The largest issuance amount according to the data presented in the above graph is in 2006 with an amount of \$US 3.27 billion, whereas the smallest was in 2010 with an amount of \$ US 0.32 billion

5.2 Descriptive Statistics - A Comparison between Sovereign Sukuk and Government Bonds.

5.2.1 Returns stylized facts:

This section will compare the stylized facts among Sukuk and conventional bonds' returns using the governmental sector. Table (5.3) provides the descriptive statistics on returns for Sukuk. Table (5.4) provides the statistics for the conventional bonds' return which are issued by the governments of the UAE, US, UK, and Germany. As shown below the mean for Sukuk and sovereign bonds are not much different, it is almost constant for both securities. The standard deviation for Sukuk seems to be higher than the sovereign bonds, except in the case of Dubai Global (0.002). The UAE governments' Sukuk are more negatively skewed than sovereign bonds which are issued by the other countries. In other words, Sukuk have longer tail to the left with negative values.

Table (5.3) UAE Government issuance

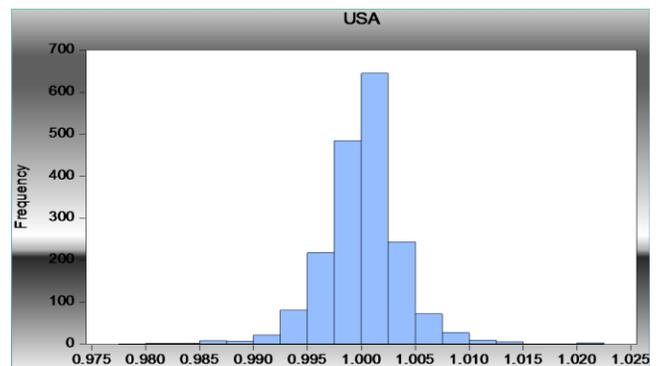
	Dubai Sukuk	Dubai Global	Dewa Funding
Mean	1.00	1.00	1.00
Median	1.00	1.00	1.00
Standard deviation	0.02	0.002	0.02
Skewness	-4.60	-6.29	-7.57
Observations	1001.00	681.00	255.00

Table (5.4) Bonds' issuance by different countries

	US Government	German Government	UK Government
mean	1.00	1.00	1.00
Median	1.00	1.00	1.00
Standard deviation	0.003	0.01	0.01
Skewness	-0.04	-0.63	-0.95
Observations	1830.00	1325.00	988.00

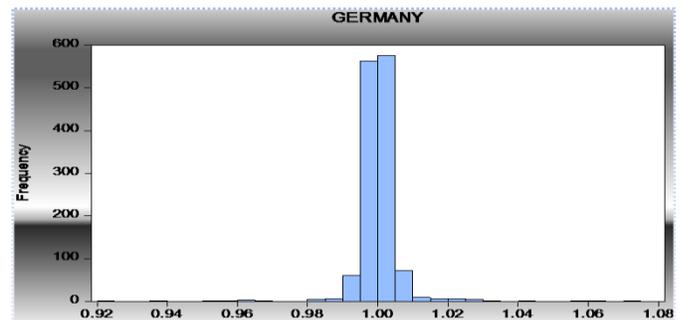
*The below graphs show the different distributions for each issuer's return.

U.S government bonds' return.
For the period 2004-2011.



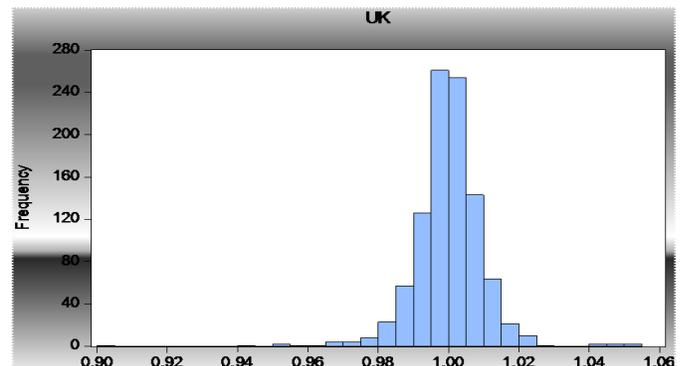
~ German Sovereign bonds~

German government bonds' return. For the period 2006-2011.



~UK Sovereign bonds~

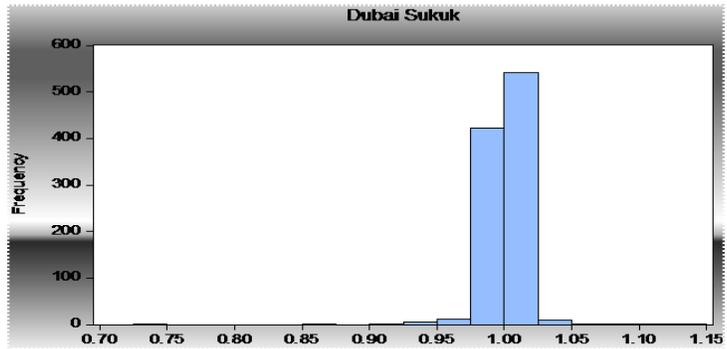
UK German government bonds' return. For the period 2007-2011



❖ UAE Governments. (Dubai Sukuk)

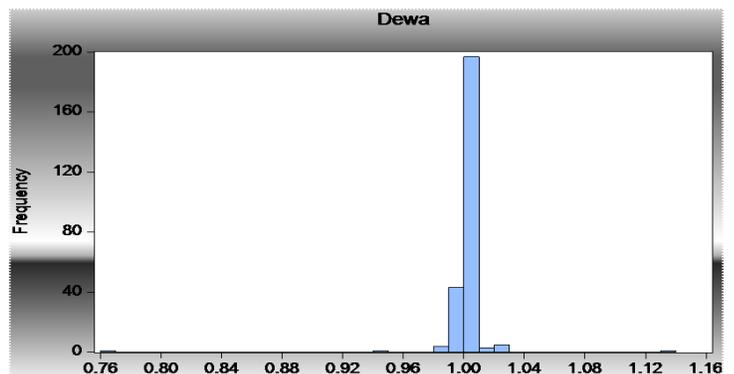
In June 2007 Dubai International

Financial Centre (DIFC) that is administrated by the government of Dubai, announced the issuance of Sukuk al-Mudarabah, that worth US\$ 1.25 Billion, 54% were held by banks, 35% to fund managers, and 7% to central banks, the Sukuk were listed on NASDAQ Dubai and mature in 2012. The Sukuk were issued by Dubai Sukuk Centre that is a special purpose vehicle owned by DIFC, which is governed by the DIFC law. The graph presents the returns' distribution for Dubai Sukuk.



❖ UAE Government (Utilities)

In May 2008 Dewa Funding Limited issued AED 3.200 Million Sukuk Al-Ijarah represents an undivided beneficial ownership interest in trust assets and matures in 2012. Dewa (Dubai

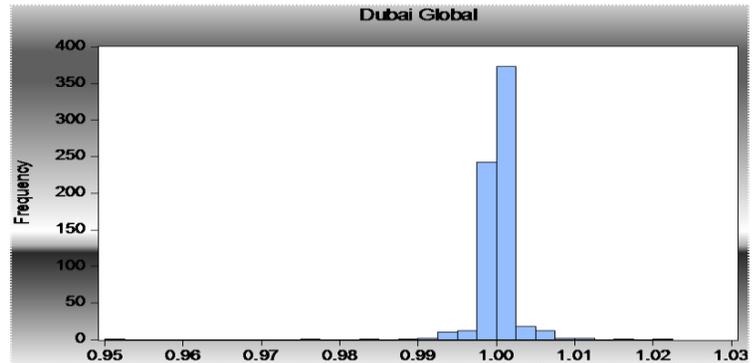


Electricity & Water Authority) on periodic dates will pay the issuer (Dewa Funding Limited) an amount reflects the rental due in respect of the leased asset. However the proceeds from the Sukuk issuance will be utilized by Dewa to finance its capital expenditure programs.

❖ *UAE Government (Dubai Global)*

Global Dubai Sukuk were issued in October 2004 by the Government of Dubai, the issued amount was \$US 1 billion, they had the typical structure of Sukuk al ijarah and were listed on Luxemburg Stock Exchange and

Dubai Financial Market. The assets that have been financed were a combination of lands and buildings at Dubai International Airport, which were owned by the Department of Civil



Aviation of the Government of Dubai. The above graph presents the returns' distribution for Dubai Global.

5.2.2 Yield to Maturity Stylized facts:

The comparison of the stylized facts among Sukuk and conventional bonds' yield is taken by considering the governmental sector again for both types of bonds, for the period of 2007-2011. Using the data obtained from Bloomberg database, we calculated the average yield rate for the Sukuk with maturities of 2-3-5-7 and 10 year. Using the equation:

$$YTM = C + \frac{\frac{F-P}{n}}{\frac{F+P}{n}}$$

Where:

C: Coupon payment

F= Face Value

P=Price

N= years to maturity

Table (5.5) provides the descriptive statistics for both yield rates. The yield to maturity reflects the relationship between the sum of the coupon payments remaining between now and maturity, and the difference between the current bond's price with its par value. As shown below the mean for Sukuk yield is (10.9) which is higher than the UK bonds' yield (4.3). The standard deviation for Sukuk is (7) which is again higher than the UK sovereign bonds' (0.211). this indicates the higher associated risk in case of Sukuk, as the higher the risk in any given security the higher the yield needs to be to compensate the holders for taking that risk.

Moreover, the UK bonds' yield (-0.51) is more negatively skewed than Sukuk yield (0.52) , which is positively skewed. The graphs below show the yield curve for both kinds of financial securities for the period 2007-2011.

Table (5.5)

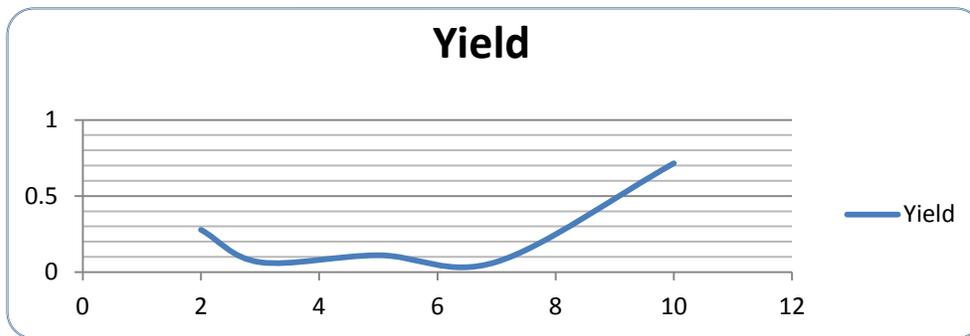
Yield to maturity descriptive statistics for UAE and UK bonds- respectively for the period 2007-2011

<i>Descriptive Stats.</i>	<i>Dubai Sukuk</i>	<i>UK Bonds</i>
Mean	10.9	4.369
Median	9	4.39
Std. Dev.	7	0.211
Skewness	0.52	-0.51
Observations	1004	1015

* In order to get an impression of both yields' trends, we plot the Sukuk and bonds 2Y, 3Y, 5Y, 7Y and 10Y yields. The results are displayed in the below graphs (i,ii)

1. Sukuk Yield curve

The curve below represents the yields for 2-3-5-7 and 10 year Islamic bonds. The curve is a ‘‘Steep Yield Curve’’ where the 10-year bond is above the 2-year one. Hence, the economy is expected to improve quickly in the future. Therefore, this type of curve can be seen as a beginning of the economic expansion.

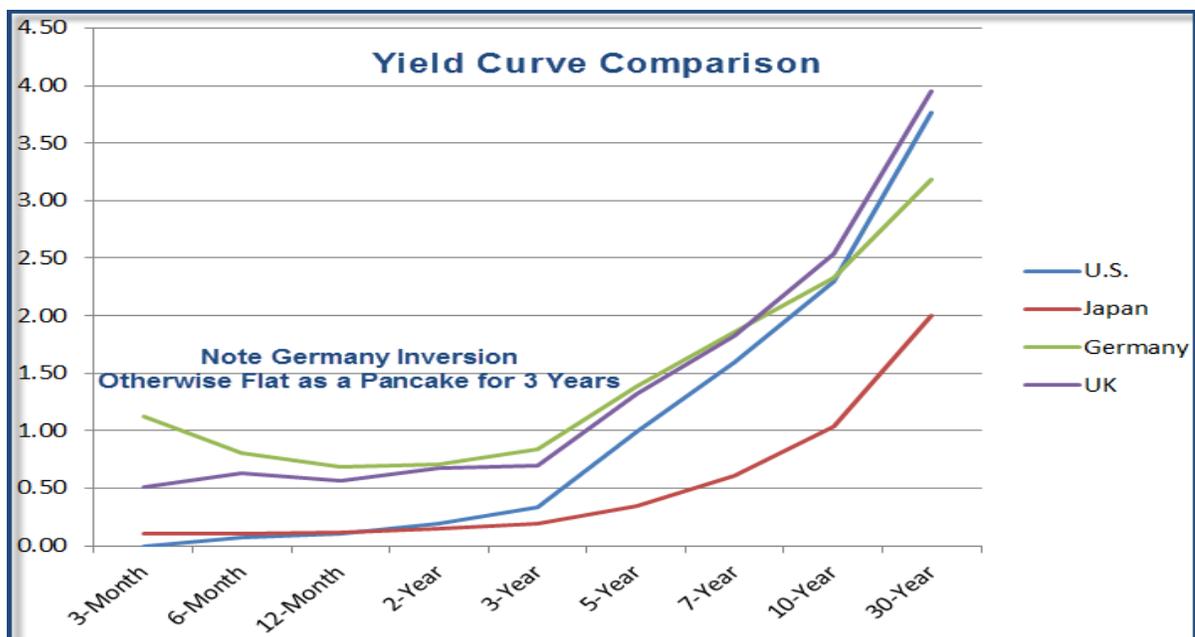


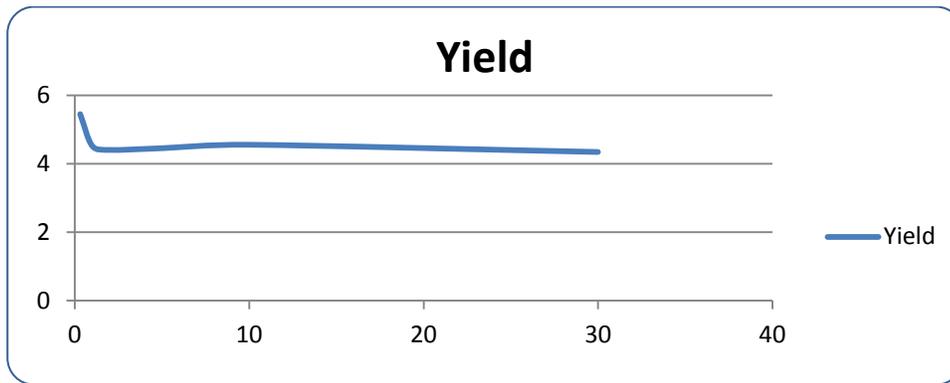
Graph (i)

2. UK, US, Japan and Germany Yield Curves as in 2011

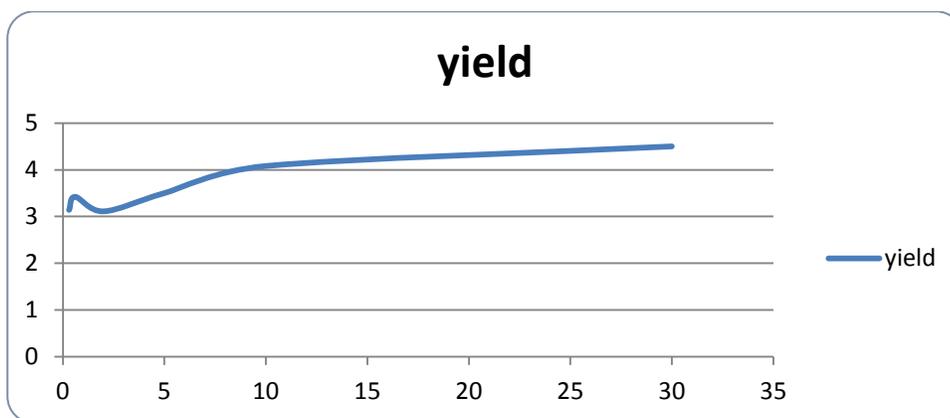
The curves for UK and Germany as in 2011 imply a recession in one the way, as shown below in the case of Germany its yield curve is inverted, which could be as a result of the current financial crisis in many European countries.

Graph (ii) Data from Bloomberg Government bonds





UK Yield curve in 2007



US Yield Curve in 2007

For the US and Japan, the curves are “Flat” up until the three-years maturities, and all maturities have similar yields. This type of curve sends signals of uncertainty in the countries’ economy. Recently, the US yield curve has narrowed implying that investors are not requiring higher yields for long-maturities, that a sign of an expected recession. Whereas the Japan yield curve has widened between the long and short maturities, implying that investors are requiring more returns to compensate for the associated risk.

Obviously, in 2007, the UK yield curve was inverted, implying a high volatility in the economy, whereas in the case of the US it was normal.

- Descriptive statistics for Sukuk with different maturities

We finally present the similarities and differences among Sukuk with different maturities.

Table (5.6)

Descriptive Stats.	2Y	3Y	5Y	7Y	10Y
Mean	27.7250	6.4041	10.9999	6.6145	71.4221
Std. Dev.	11.4602	5.8354	7.0026	2.7828	1.1953
Skewness	0.395794	2.487811	0.522110	1.104119	-0.188675

The mean: A short-term bond with maturities of 3-Year or less usually has lower yields than long-term ones, as in the case of 10-Year or more. However, the mean yield for the 2-Year Sukuk (27.7) is higher than the intermediate terms but lower than the 10-year bond's yield (71.4).

The standard deviation: the 2-year bond carries the largest standard deviation than the other different maturities, which indicates the larger dispersion from the average (mean). Here it decreases with the long maturities implying lower, less risky and more stability of yield returns.

Skewness (the probability distribution): for all maturities, the yields are positively skewed, except for the 10-Y that its average, as shown in table (5.7), is (0.4) while the average standard deviation from the mean for all types of Sukuk is (0.27) implies that the tail on the left side is longer than the right side.

Table (5.7) Bid-Ask spread stylized facts-all types of Sukuk

Descriptive stats.	Bid-Ask Spread
Mean	0.39
Median	0.45
Std. Dev.	0.27
Skewness	4.66
Observations	5304

Summary: in this section (5.2), we presented the different stylized facts for Sukuk in the UAE compared to the sovereign bonds in countries like the UK, USA and Germany. For the returns, the results suggest that both types are very similar in terms of their mean, but higher in terms of Std. Dev. for Sukuk and more negatively skewed. For the yields stylized facts, the average yield for Sukuk in this sample is much higher than the sovereign bonds, accordingly its standard deviation.

The yield curve for the UAE is a steep one, which implies a future expansion for the economy. While the curve in the case of the UK, US and Germany is normal, this implies an increase in the interest rate that leads to a higher inflation in the economy. For the same Sukuk security type with different maturities, the mean for the two and ten years Sukuk maturities are much higher than the intermediate, whereas the associated risk is high only in the case of the two-year bonds.

For the US and Japan, the curves are flat up until the three-years rate, which means the same interest rates for all maturities. Moreover, the US curve has tightened while the Japan's one has widened to compensate for any future risks.

5.3 Data Descriptions (Regression Analysis).

This section aims to explore the internal characteristics and the overall economic factors that affect the spread with the liquidity of Sukuk in the GCC secondary market. However, this issue has been of many scholars, researchers and practitioners' interest.

The bid-ask spread is taken as the proxy for Sukuk liquidity, while the internal factors consist of coupon rates, floating-fixed rate feature, maturity feature, rating, and sinkable-callable features. For the macroeconomic factors, we consider Libor rate, Dubai financial market index, and exchange rates.

The analysis will provide an insight to the factors that significantly affect the Islamic bonds' liquidity. Where, this will help investors and issuers to improve their investment decisions, and minimize the associated risk in Sukuk markets. Moreover, it will establish an insight into the differences and the similarities' pattern among Sukuk and conventional bonds behaviour in the UAE secondary market.

5.4 Methodology

In examining various determinants' factors of bonds' spread, we use multiple regression analysis as used by (He et. al 1999), who explains the power of each independent factor and the significance of each coefficient, in addition to the R-squared. E-views program was used to conduct the analysis. This regression model uses panel data that are of two dimensions, a time dimension and a cross-section dimension, and within cross-section identifiers. Generally speaking, the panel data consists of data with a large number of cross-sections rather than time-series.

Regression model covers data over 10 kinds of Sukuk within the period of September 2005 to June 2011. Data's period consists of the monthly average of Sukuk spread and macroeconomic factors, while the internal characteristics consist of dummy variables plus the coupon rates.

The study considers run two equations that differ in their independent variables: the first formula tests the explanatory variables that reflect the internal characteristics of bonds and their influence on the Islamic bonds' liquidity. The other formula examines the explanatory variables that represent the overall macroeconomic conditions and whether these factors affect on the Islamic bonds' liquidity in the GCC region.

❖ *Liquidity measure (a brief review on the relevant literature):*

The Liquidity definition consists of two main elements (i) the immediacy of the trades (ii) the insignificant price change. The first element and according to (Darst 1975 cited by He et. al 1999) is the time needed to complete the trades, while the second is the volume size of the trades at a time without a significant change in their prices.

Scholars such as (Gorth and Dubofsky 1992, cited by He et. al 1999) state that there is no single, unambiguous measure for liquidity, though one common measure of liquidity, specifically immediacy is the bid-ask spread, which is the difference prices quoted by a dealer who sells at a point in time and the other dealer who buys at an earlier stage. The higher the difference is, the more illiquid the security becomes. Moreover, in uncertain circumstances the spread becomes much higher as the volatility increases, thus the traders require higher margins.

The bid-ask spread is chosen here to be the liquidity proxy, though it is more directly a measure of the transactions' costs. On the one hand (He et. al 1999) explains the ineffectiveness of the bid- ask spread to be a liquidity measure given three reasons: (1)

spreads alone are unable to capture the ability of any market to absorb the volume of trades without any price disturbance (2) it does not reflect the change in these prices (3) it does not account for the outside trades as in the case of large trades that occurs outside the quoted spreads, thus he used the bonds' turnover as a liquidity proxy. On the other hand (Wang 2008) states "although the bid-ask spread is a direct and potentially important indicator of illiquidity, it does not fully capture many important aspects of liquidity, such as market depth and resilience". Stoll (1989) in his paper claims that the quoted spread is related to the securities' characteristics such as: the volume of trade, the security price and many other factors. Therefore, regarding the unavailability of other measures' data in the UAE secondary market such as: trades volume or Sukuk turnover, the bid-ask spread was chosen to be the liquidity proxy.

- *Factors affect the bonds' spread:*

The bonds' spread is affected by many different factors, scholars and practitioners such as (Singhal et. al 2009) have examined the determinants of the bonds' spread. They concluded that the market risk such as; risk free rate, exchange rate, inflation, along with the credit risk such as; default risk and the stability of the bonds, are the main factors that affect the bonds' spread.

For instance, the increase in the risk-free rate will decrease the costs of insurance against any default and thus decreases the bonds' spread. Moreover, the relationship between default risk and bonds' spread are positively correlated, the higher the credit risk the higher the spread will become.

Ferrando et. al (2009) considered the macroeconomic and fiscal fundamentals factors that affect the bonds' spread in the EU countries with a dynamic error correction model. They find that external debt-to-GDP and fiscal balance, inflation, exchange rates, trade

openness and short-term interest rate are the main long run determinants that affect the bonds' spread. This may vary in different countries in the EU.

An interesting study conducted by (Mati et. al 2008, cited by Ferrando et. al 2009) where they pointed out the importance of the political factors that play a role in deriving the bond spreads, apart from internal and macroeconomic determinants. (Ferrucci 2003, cited by Petrova et. al 2010) referred to the role of fundamentals such as the U.S stock market and in affecting the bond spreads. While (Petrova et. al 2010) concluded that financial fragility such as: financial stress and stock index volatility are important determinants for the spread in the short-run, whereas fundamentals such as the risk-free rate and political risk affect the spread, mainly in the long-run.

Sarkar and Chakra (1998) have examined the determinants of bonds bid-ask spread in the U.S market by examining the effect of the explanatory variables on three different sectors. They found that liquidity represented by the trades volume is the main dominant factor that affects the three markets (Government, corporate and municipals), while the credit risk affects the latter two, in addition to the effect of the after-tax bond yield that influences the municipal bond spreads.

❖ Internal Characteristics:

The first internal factor we consider in the regression analysis as an independent variable is the coupon rate; that is the annual interest rate the issuer promises to make in each specific period, and it is specified as a percentage of the bond's par value. The coupon rate is inversely correlated with the bonds' ratings, and positively correlated with the bonds' liquidity, thus a low coupon rate does not indicate a poor feature of a bond investment (He et. al 1999). The issuers of the highly rated securities do not need to pay high coupon rates while the issuer of a lower rated security needs to compensate for the probability of any

default. The rating that conducted by rating agencies consists of two terms; the default probability and the recovery rate, as mentioned above default probability is positively correlated with the bonds' spread thus inversely related with the bonds' liquidity Bonds with higher ratings are most likely to be less traded, (He et. al 1999) state that investors still look for triple (A) bonds, thus low rated bonds suffer of poor trading levels. Therefore, both factors are important to examine the dependency of the bonds' liquidity on such internal characteristics in the UAE secondary market.

Term to maturity is another key factor that affects the bonds' liquidity. According to (Robbi et. al 2009) the theory of supply states that longer the age of the security the more illiquid it becomes, while the short-term maturities are more liquid. This is consistent with (Wang et. al 2008) findings that the older bonds have higher illiquidity. Therefore, bonds' liquidity is conversely related to the life span of the bond. Which is not consistent with (He et. al 1999) findings that show the opposite direction of the previous argument is in Thai market; that the term to maturity has a positive correlation with the bonds' turnover, which he used as a proxy for the liquidity, in other words, the longer the bond's life toward maturity the higher its liquidity.

The bonds' features may be perceived differently by investors. Callable securities, for instance, offer the investor the chance to be protected against the upside risk that may result in bad economic times, though they are still considered to be riskier than non-callable bonds. In the case of the interest rate being declined since the bond issuance, that may cause an acceleration on bonds being more likely to be called, in this case the investor will lose the chance to reinvest the repaid principal at a high interest rate. Hence, for issuers, callable bonds are perceived as future stocks rather than debts.

For Sinkable bonds, this feature decreases the chance of any possible defaults as the issuer guarantees the payment of principals and interest as promised, by setting aside money on a regular basis, thus the bonds are backed by funds.

The fixed- floating feature have different preferences by investors, so these two features are examined in our analysis.

❖ Macroeconomic factors:

The inverse relationship between interest rate and bond prices indicates the importance of including the LIBOR in the analysis, as the interest rate increases bonds' prices usually fall. Robbi et. al (2009) have examined the determinants of bonds' liquidity by using the transaction volume as a proxy, their findings show that interest-rate risk positively influences bonds' trading volume while it is inversely correlated in the case of bonds' ratings. Moreover, they claim that there is a positive correlation between stock market liquidity and bonds' market one, on the contrary, (He et. al 1999) pointed out that rises in the interest rates as a result of policy tighten may lead to a financial crisis with liquidity collapses in security's market. (He et. al 1999) claim that there is an inverse correlation between the stock market liquidity and the bonds' market one, as both are alternative financial securities that compete for investors. Their explanation is; an interest rate increases the required return on bonds will increase and thus investors will be less willing to invest in bonds and will perceive the stock market to be more attractive.

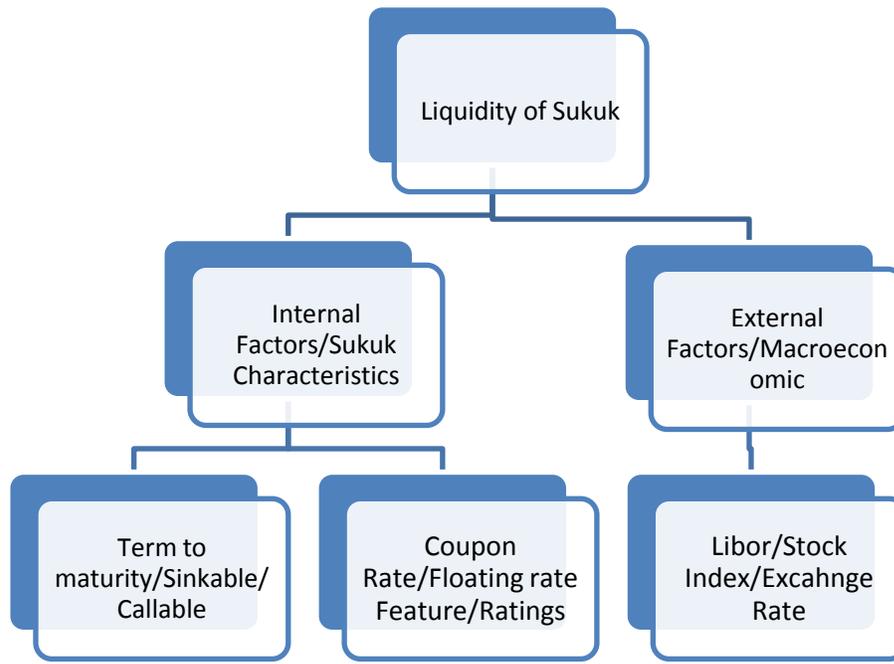
Inflation, on the other hand, is a key determinant of bonds' liquidity that is being controlled in most countries through the interest rate, even if the bonds were highly rated, the effect of inflation may still occur resulting in a poor performance of bonds under inflationary conditions. Singhal and Bahure (2007) state " when there is inflation, there is a

rising risk in the economy, so the credit spread has to widen to compensate the investors for the risk''. Hence, the lower the interest rate the higher the inflation and consequently, the bonds' spread become wider, which results in less liquidity in the bonds' market. Regarding the unavailability of data in the UAE market inflation factor is not taken in the analysis.

Exchange rate is an indirect factor that influences the bonds' liquidity, when the local currency appreciates implying the strengthening in the economy, thus the foreign investments' inflows will increase and vice-versa. The issuances' currency in our sample varies between US dollars, Malaysian Ringgit and United Arab Emirates Dirham, in the analysis the AED in terms of MYR was used, as the AED is pegged to the US\$ for the chosen period.

Dubai index is considered as well to analyse its impact on the Sukuk liquidity in UAE secondary market.

➤ In the multiple regression equations, if the independent variables explain the dependent one (spread), thus we reject the null hypothesis H_0 and accept the alternative one. The positive coefficient sign implies a direct correlation while the negative implies an inverse relationship between the dependent and the independent variable.



Thus for the internal factors the hypothesis state,

◆ Hypothesis 1 (Internal factors)

✚ Ho: The coupon rate of the Sukuk, term to maturity, floating rate feature, sinkable, callable, and rating are not significant factors that affect the Suukuk liquidity.

So, $B_2=0$, $B_3=0$, $B_4=0$, $B_5=0$, $B_6=0$

✚ Hi: The coupon rate of the Sukuk, term to maturity, floating rate feature, sinkable, callable, and rating are significant factors that affect the Suukuk liquidity.

So, $B_2 \neq 0$, $B_3 \neq 0$, $B_4 \neq 0$, $B_5 \neq 0$, $B_6 \neq 0$

$Y = b_1 + b_2 * \text{Coupon rate} + b_3 * \text{Term to Maturity} + b_4 * \text{Float} + b_5 * \text{Convert} + b_6 * \text{Sink} + b_7 * \text{Call} + b_8 * \text{Ratings}$.

- Y = Monthly average Bid-Ask spread of each Sukuk for the period of 2005-2011.
- Coupon = The Coupon rate of the Sukuk.

- Term to Maturity= Time to maturity of each bond traded, is a dummy variable. 1 is given to the Sukuk with at maturity feature, otherwise 0 is assigned.
 - Float, Convert and Sink are dummy variables. 1 is given to the Sukuk with floating rate, Convertible and sinkable features, otherwise 0 is assigned.
 - Rating = 1 is given to A-rating Sukuk including A, AA- and A1; 0 is assigned to others either B- rating Sukuk or not rated, however our sample consists only of these two ratings.
 - ◆ Hypothesis 2 (Macroeconomic factors)
 - ✚ Ho: Interest rate (Libor), exchange rate and Dubai Index are not significant factors affecting the Sukuk liquidity.
 - ✚ H1: Interest rate (Libor), exchange rate and Dubai Index are significant factors affecting the Sukuk liquidity.
- $$Y = b_1 + b_2 * \text{Libor} + b_3 * \text{Exchange} + b_4 * \text{Index}.$$
- Y = Monthly average Bid-Ask spread of each Sukuk for the period of 2005-2011.
 - Libor = Monthly inter-bank interest rate.
 - Exchange = the monthly exchange rate for (MYR/AED), as the (\$US/AED) is pegged throughout the sample period.
 - Index = the monthly average logarithm of the stocks' closing price in the Dubai index.

Data Analysis:

Running a multiple regression on 10 different types of Sukuk to examine the internal and the macroeconomic factors that affect their liquidity might not be completely reliable, though at a minimum stage, it should give an insight to the effect and the significance of each variable on the tradability of Islamic bonds.

This analysis show that coupon, floating, ratings and exchange rate are the most significant elements that have an impact on the Sukuk liquidity in United Arab Emirates,

whereas the sinkable, callable, term to maturity features, Libor along with Dubai index are not significant, all at 95% level of confidence.

I. Sukuk Characteristics

Table (5.8): Multiple Regressions

Dependent variable = Bid-Ask spread.

Variable	Coefficient	Std. Error	t-Statistics	Prob.
Coupon	-0.1215	0.0134	-9.0474	0.0000
Callable	0.0409	0.0869	0.4704	0.6383
Maturity	-0.0993	0.0807	-1.2301	0.2194
Floating	0.0733	0.0293	2.4960	0.0130
Ratings	-0.1113	0.0372	-2.9892	0.0030
Sinkable	-0.0409	0.0869	-0.4704	0.6383

$R^2=.299$ Adjusted $R\text{-squared}=.289$ $F=30.265$

Coupon rate has a negative correlation with the Sukuk spreads that is the higher the coupon rate paid on the Sukuk security the lower their spreads, hence their tradability and liquidity become higher. This is consistent with the conventional bonds' findings in many different researches' studies, as in (He et. al 1999) which states that coupon rates are positively correlated with bonds' liquidity. However, the coupon rate has a significant effect in determining the Sukuk liquidity in this sample, which is in contrast with (He et. al 1999) findings.

Floating feature has a positive relation with the Sukuk spread hence it has a negative correlation with their liquidity. Thus Sukuk that carry this feature are less desirable by investors. Notably, it is not preferable in the UAE market as well as in the Thai market, as shown by (He et. al 1999).

Ratings result is consistent with the conventional bond that has been examined by many scholars. It has a significant and strong relation with the Sukuk spreads and their liquidity. It is an important factor in determining the bonds' liquidity. Where, the higher the ratings the lower the Sukuk spread and as a result, their liquidity increases and vice-versa. The sign and the significance are both consistent with (He et. al 1999) findings regarding the conventional bonds.

Moreover, the analysis confirms the inverse relationship between coupon rate and ratings. By running a single regression the result outcome is:

$$\{ \text{Coupon} = 2.3 + -1.4 * \text{Ratings} \}$$

Term to maturity or the remaining life of a bond also has a negative but not a strong relation with their spreads, thus the longer maturities of Sukuk have smaller spreads and their liquidity is higher. This is on one hand is in contrast with (Robbi et. al 2009), (Srig and Wrga 1989, cited by He et. al 1999) findings considering the supply theory that states; the long age bonds have more illiquidity. On the other hand, it is similar to (He et. al 1999) findings in the Thai market, where that term to maturity is positively correlated with bonds' liquidity, the longer the life of the bond, the higher its liquidity, although it is not a significant factor.

The sweetener features such as: callable and sinkable features are not significant in affecting the Sukuk spreads and liquidity. The sinkable Sukuk are more liquid. It has a negative relationship with the Sukuk spreads, and thus they are positively perceived by investors and have higher liquidity. Whereas callable Sukuk are less liquid, the coefficient sign is positive, which means when Sukuk carry this feature the spread is wider, and hence

they are negatively perceived by investors. Both results are not strong. It is worth noting that only two Sukuk in the market that carry both features are included in the sample.

R-squared is not so high; the regression analysis explains almost 29% of the internal factors' effect on the Sukuk spread that is our proxy for their liquidity. However, it gives a picture of the situation in the UAE during the period of 2005-2011.

II. Macroeconomic factors

Macroeconomic factors are fundamentals in affecting the securities' spread. After the financial crisis that started in mid-2007, investors became more concerned about the role of these factors in driving the different types of securities, derivatives and the overall financial markets.

The macroeconomic factors affecting the bonds' liquidity mainly mirror the investors' preferences. Remarkably, Dubai Index and the Exchange rate are the most significant elements that affect the Sukuk liquidity in the UAE. Whereas, London inter-bank rate does not have a great impact on the liquidity of Sukuk.

Table (5.9) multiple regression, equation (2)

Dependent variable = Bid-Ask spread.

Variable	Coefficient	Std. Error	t-Statistics	Prob.
Libor	0.0174	0.0115	1.5163	0.1303
Dubai Index	-0.0822	0.0435	-1.8869	0.0600
Exchange Rate	-1.6547	0.2567	-6.444	0.0000

R²= .112 Adjusted R-squared= .104 F= 14.98

The inter-bank rate has a positive correlation with the Sukuk spreads in the analysis, though it is not significant. This implies that the inter-bank rate affects the liquidity in an opposite direction, in another word, when the inter-bank rate increases the Sukuk spreads become wider and consequently, their liquidity drops. Thus, the inter-bank rate does not have a great impact in determining the Sukuk quoted spread, which is in contrast with the conventional bonds' liquidity behaviour that has a significant and positive correlation with the inter-bank rate. This is inconsistent with (Robbi et. al 2009) findings, but consistent with (Petrova et. al 2010) and (He et. al 1999) regarding the positive sign. In our samples two out of ten Sukuk pay fixed interest while the other eight carry the floating rate-feature that are tied to the LIBOR rate.

The appreciation of a country's currency results in an increase in the country's inflows, as investors perceive the country's investments to be more attractive with higher returns. Thus, it is positively correlated with the bonds' liquidity. The Exchange rate changes in the analysis show a significant impact on the Sukuk market, but negative. The significance is statistically expected. This effect of forex on the Sukuk is consistent with its effect on the conventional bonds in studies like (Petrova et. al 2010, Min 1998). Furthermore, as the AED currency is fixed to the US\$ one over the period of this study, hence we consider the Malaysian Ringgit as it is widely used in Sukuk issuance in the UAE. Two Sukuk out of ten were issued in MYR and used in our analysis.

Dubai index shows an opposite direction to its effect on the conventional bonds' market, where there is an emphasis on the fact that both securities substitute each others' hence, both compete for investors. The decrease in the stock market will shift the investments toward the bonds' market, which is different in the case of Sukuk. The index effect is not significant at 95% level of confidence, nevertheless, it is significant at 90% level of confidence. The result of significance is not consistent with many of the conventional bonds' research, though the positive correlation is consistent with all the previous mentioned studies.

The R-squared of the test is not so high, as the aim of the analysis is to give an insight of the impacts of macroeconomic variables on the available monthly Sukuk spread. Therefore, it explains 11% of whole Sukuk liquidity in UAE market.

Chapter 6: Conclusion

6.1 Introduction

This chapter outlines the objective along with a summary of the conclusion of this dissertation. It also offers some forward suggestions for future developments for Islamic bonds along with the list of abbreviations.

6.2 Summary of the study and the empirical results

The paper investigates the Islamic bonds stylized facts that distinguish them from the conventional bonds. By employing the descriptive statistics along with the multiple regression analysis methodology; we examined the differences and similarities among both financial securities.

The discussion begins with highlighting the importance and popularity of Sukuk. Furthermore, it provides a brief overview on the study background and the question we try to answer in this paper. This is followed by the research aims and objectives, an insight into the Islamic bonds' structure along with the differences with the conventional bonds are presented in the next section and finally, the dissertation structure. The next chapter reviews the empirical studies that aim to investigate the Islamic bonds' differences along with their stylized facts, worldwide. The studies aim to investigate the impact of Sukuk inclusion on financial portfolios, stockholders wealth and financial institutions like banks, the reaction of financial markets to the announcement of Sukuk along with the factors that affect these types of securities' liquidity and sustainability.

The next chapter gives an insight into the debate of Muslims and non-Muslims scholars on the compatibility of Islamic bonds with Shari'a law. Furthermore, it presents the basic Islamic principles regarding the ethical economical and financial deals and their roles.

The next chapter shed light on the growth and evolution of Sukuk over the past decade; it describes the most widely used types of Sukuk, in addition to each one's structure, the advantages and the drawbacks as regards in the Islamic principles and perspectives.

Studies on the Gulf Islamic bonds using the internal characteristics and the external factors that affect their liquidity are limited. To the best of our knowledge, this study would fill this gap, by employing the multiple regression analysis on the factors that affect the Sukuk liquidity in the GCC and specifically in the UAE.

The next chapter describes the methodology that has been used to examine the determinants of the conventional bonds' liquidity, spreads and trading. For the data, this study consists of ten Islamic bonds in the United Arab Emirates for the period of 2004-2010. It starts with analyzing the descriptive statistics regarding the government Sukuk sector in the UAE compared to the sovereign bonds in the U.S.A Germany and the UK. The returns stylized facts show no difference between the two types of securities, regarding the four countries issuances. The results suggest that coupon rate, floating and ratings are the main internal determinants of Sukuk spreads in the region, in addition to the exchange rate as the macroeconomic determinants. While according to (He et. al 1999) only ratings, interest rate and stock index are the main determinants of conventional bonds' (turnover) liquidity in the secondary market.

6.3 Limitation of the study and forward suggestions.

The data unavailability is one of the main obstacles that faces many researchers in the Islamic security field. As many databases are still in their infancy. Therefore, as mentioned before, the limited number of Sukuk data used may imply that the results are not completely reliable, though, they could give an insight to the truth. Moreover, this unavailability could have caused the small number of research on the Sukuk field whereas; many studies have been conducted on the conventional bonds' field, regarding the easy access and availability of their data almost in every country.

In the UAE, some of the financial and economical rates are not periodically and formally collected and distributed. Which imposes another limitation on including many more independent variables in the equations, such as: the inflation that is apparently has a great impact on the financial and economic sectors. Thus:

- First, the factors that affect Islamic bonds in the UAE could be compared with the factors that affect other countries in the GCC.
- Second, subject to data unavailability over a longer period that would result in a wider sample, which will give a better conclusion and more reliable one. Further research into Sukuk could also consider the stylized fact among Sukuk in countries like US, UK and EU.
- Despite the limitations, the findings of the study are expected to provide a fair insight into the Islamic bonds' concept, the Fiqh interpretations and their stylized facts with comparison to the conventional bonds.

6.4 List of Abbreviations

GCC: Gulf Corporation Council.

SPV: Special Purpose Vehicle.

AAOIFI: Accounting and Auditing Organization for Islamic Financial Institutions.

OLS: Ordinary Least Square.

FOREX: Foreign Exchange Markets.

EU: European Countries.

AED: Arab Emirates Dirham.

MYR: Malaysian Ringgit.

Min.: Minimum.

Max.: Maximum.

Shari'a Law: 'way or path' which is the religious law in Islam.

EURIBOR: Euro Interbank Offered Rate.

DIFC: Dubai International Financial Centre.

NASDAQ: National Association of Securities Dealers Automated Quotations.

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