

## Risk in Funding Infrastructure Projects through Sukuk or Islamic Bonds

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#### Abstract

*The funding of infrastructure projects via the issuance of sukuk or Islamic bonds is emerging as a popular funding alternative to conventional bonds. However, there are certain risks when funding infrastructure projects. This paper aims to identify and profile risks associated with funding infrastructure projects from the issuance of sukuk, through a rigorous review of literature. These risks will be structured in order to formulate those risks associated from the issuance of sukuk. This paper will also assess risks that transpire from issuing of sukuk to fund infrastructure projects. By identifying the sukuk risk, it should enable stakeholders to address related funding issues.*

**Key Words:** Project management, Risk management, Infrastructure Project and Islamic Capital Market.

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#### Introduction

The stakeholders of a project involve its' owners or joint venture partner, any consultant, the client and the financier of projects have to mitigate the risk to ensure project is implemented successfully. There are numerous studies on risk management of infrastructure projects (Gilmour, et al., 2010; Fitcher et al., 2010) and risk management of ICM (Gazi & Syed, 2101). However, there are limited studies, which analyze the funding of infrastructure projects through the Islamic Capital Market (ICM). This paper provides an overview of risk of issuance of *Sukuk* to fund infrastructure projects. This type of funding has developed in capital markets over the last 10 years and has become increasingly popular.

## Project Financing

Raising funds should be considered as one of the most crucial activities for the development of an infrastructure project. This is especially true at the planning stage. Project owners need to decide which method of financing is to be adopted in order to best suite project requirements. Selecting and subsequently managing the funds appropriately will be a key factor to ensure that the project will be successfully implemented. Conversely, mis-management could expose the project owners and stakeholders to both financial and legal consequences. A proper and comprehensive project funding structure is prerequisite to ensure its successful implementation so as avoid any unnecessary time and cost overruns (Abdul Maulud, 2005). Thus a smooth implementation would provide financial stability in order to ensure expected profitability and returns on investment.

Historically, the preferred form of financing large scale infrastructure projects worldwide is through project financing. Project finance is the long term financing of infrastructure and industrial projects based upon the projected cash flows of the project rather than the balance sheets of the project sponsors (Marco, 2004). Several studies were conducted by researchers, which have proven that project financing is critically important especially for emerging economies. As such there is linkage between infrastructure investment and economic growth (Marco, 2004).

Project financing techniques have become a primary means for financing a broad range of economic units globally. Only recently there are some project financing principles have been applied such as Public-Private Partnerships (PPP) and Private Finance Initiatives (PFI) (*Project finance: meaning*, 2011). The application of these techniques has been refined in most industrial categories and with respect to most types of assets. However, project financing is more often than not is more complicated than alternative or conventional financing methods.

### Project Financing: Islamic Capital Market (ICM)

Project finance is the most commonly used for funding large scale infrastructure project. Most of these infrastructure projects are financed non-recourse to the sponsoring companies (Camacho, 2005). There are many projects that are financed with a debt to value ratio of as high as 80% and with a project duration as long as 20 to 30 years (Camacho, 2005). The main purpose of engaging in project financing is to transfer and allocate the risk to the several of parties based on the expertise (Camacho, 2005). However, there are differences between the conventional project financing and Islamic financing, primarily from the *shari'ah* compliance aspect.

The emergence and application of Islamic financing in project funding has emerged as the only alternative to the conventional financing. The main difference between Islamic financing and conventional financing is the way the funds are used in order to finance the project. The sources of fund must comply with the *shari'ah* guidelines.

Islamic finance is defined as “any finance that is compliant with the principles of Islamic Law (*Shari'ah*)” (ACCA, 2010). It is based on two major guidance for *muslims*, the Holy Quran and the *sunmah* of Prophet Muhammad (s.a.w) (Abdul Maulud, 2005) and follow Islamic (Shar'ah) law (Muhammad, 2008). Most of rules, regulation, law and interpretations of *Shari'ah* consider issues of social justice, equitability, and fairness as practicality of financial the entire transactions (IOSCO, 2004). *Shari'ah* has provided detailed guidelines for the concept of money and capital, the social responsibilities of financial institutions, and the relationship between risk and profit (ACCA, 2010). The four prohibited elements under *Shari'ah* are *riba'* (interest), *gharar* (uncertainty), *maysir* (gambling) (Bursa Malaysia, 2005), non-*halal* (prohibited) food and drinks and immoral activities (IOSCO, 2004).

*Riba'* appears in two situations (Camacho, 2005). The first situation involves money when it is exchanged hand to hand in different quantities. The second situation involves money being exchanged for a deferred pre-determined increase in more money. On this score, the conventional financing method is based on *riba'*, which is also known as usury or interest. In this respect, the element of *gharar* (uncertainty) exists in the conventional financing method primarily in the banking and insurance contract (Camacho, 2005). *Maysir* involves the prohibition of gambling in Islamic finance. The application of financial derivatives such as futures and options, are deemed to be prohibited by many Islamic scholars due to the existence of the element of gambling (Camacho, 2005). Conventional financing techniques always hedge and in order to transfer risk using the financial derivatives. The hedging processes create genuine challenges especially given the significant cost of funding an infrastructure project.

The last element, which is prohibited under *Shari'ah* Law, is the principle that deals with non-*halal* food and immoral activities. As such, Islamic financing clearly emphasizes that any projects or main sources of business income or stream of revenue, must not be derived from non-*halal* food or immoral activities (IOSCO, 2004).

The Islamic financial services industry comprises of Islamic banking, Islamic insurance or *takaful*, and the Islamic Capital Market (ICM). In fact Islamic finance has developed into a financial sector that has substantially grown from regional segmentation to a global financial market. In the case of Malaysia, a unique capital market system includes both an Islamic Capital Market and a Conventional Capital Market. The first Islamic bank being established in Malaysia some 40 years ago was Bank Islam Malaysia Berhad (BIMB) (Zamir Iqbal & Abbas Mirakhor, 2007). Malaysia's dual financial system provides wider products and services, and thus wider alternatives and options to its customers. Malaysia is a multi-racial country where the majority of population is Muslim, providing a significant market potential or customer base for the ICM and its financial services. The ICM refers to the financial market where financial activities are carried out in ways, which does not contravene with the principles of Islam (Securities Commission, 2009). As such, the ICM represents an affirmation of *Shari'ah* law in capital market transactions being free from prohibited activities and elements such as *riba'* (usury), *maysir* (gambling) and *gharar* (ambiguity) as clearly stated by Bursa Malaysia (2005), the Malaysian stock exchange.

The ICM has emerged extensively in Malaysia. In term of project financing, among the most popular financial instruments are *sukuk* or Islamic bonds. The Accounting and Auditing Organization of Islamic Finance Institutions (AAOIFI) defined *Sukuk* as: "Certificates of equal value representing undivided shares in ownership of tangible assets, usufructs and services or (in the ownership of) the assets of particular projects or special investment activity" (AAOIFI, 2004). While the Securities Commission of Malaysia (SC) briefly define *sukuk* (Securities) as: "A document or certificate which represents the value of an asset." (Security Commission, 2004).

*Sukuk* or Islamic bond is based on a specific contract of exchange that can be made through the sale and purchase of an asset based on deferred payment, the leasing of a specific asset or participation in joint-venture businesses (Iqbal & Mirakhor, 2007) or any form of business ventures. An exchange of a *Shari'ah*-compliant underlying asset is required in order to issue *sukuk* or Islamic bond (Iqbal & Mirakhor, 2007). Several *Shari'ah* principles such as *ijarah*, *mudharabah*, *musharakah*, *bai' bithaman ajil* and others are also applied in Islamic bonds (IOSCO, 2004).

The fundamental difference between a conventional bond and *sukuk* is that the conventional bond represents the issuer's pure debt, while *sukuk* represents an ownership stake in an underlying asset for a defined period when the risk and the return associated with cash flows generated by underlying assets in a pool are passed to *sukuk* holders (investor) (Iqbal & Mirakhor, 2007). In other words, the *Shari'ah* accepts the validity of a financial asset that derives its return from the performance of an underlying asset (Iqbal &

Mirakhor, 2007). For example, an *ijarah* (lease) contract that is often used to structure sovereign *sukuk* creates a lessee or lessor relationship, which is different than a lender or borrower relationship (Selim & Faezeh, 2007).

In 2001 there was less than \$500 million *sukuk* issued, but subsequently exceeded \$60 billion in 2007 (Damak & Vollan, 2008). In another report by the International Islamic Financial Market (IIFM), the global *sukuk* issuance increased from just over US\$ 1 billion towards the end of 2001 to US\$ 136 billion as of 30<sup>th</sup> June 2009 (IIFM, 2010). The increase in the growth of Islamic financial instruments or securities especially *sukuk*, are undeniably is the key contributing role of ICM globally.

Huge challenges lies ahead for financial instruments and product innovation in the ICM, particularly in the *sukuk* market. One of these challenges involves the increased diversification of *sukuk* structures (Muhammad, 2008). Previously, the type of *sukuk* was based on *ijarah*, *musharakah*, *mudharabah* and the combination of *ijarah* with *istisna'* or the combination *ijarah* with *istisna* and *murabahah* (Zamir Iqbal & Abbas Mirakhor, 2001). There should be more *sukuk* derived from the combination of different basic *sukuku*s to form what scholars refer to as hybrid *sukuk* (Securities Commission Malaysia, 2009). There is a demand for more Islamic financial instruments, whether existing products could be refined to develop further *sukuk* structures or develop more hybrid *sukuk* is still open for discussion (Muhammad, 2008). Further research for *sukuk* and Islamic stocks is required in order to specifically analyze the operational aspects of equity and debt based financing that provide sustainable returns for financiers and investors (Ismail, 2010).

## Challenges and Risk of Islamic Financing

There is a significant body of literature, which has discussed the challenges and risks of ICM products and services such as Jobst, et. al., 2008; Camacho, 2005; Ali & Humayon, 2007; Misnen & Qoyum, 2010; Cakir & Raie, 2007; Yean, 2010; Wahida & Rafisah, 2010; Iqbal & Mirakhor, 2007; Muhammad Al-Bashir, 2008; and Abdul Maulud, 2005. From our analysis of both Islamic and conventional capital market literature, it can be summarized that there are total of nine (9) common risks of when raising funds for projects. These risks are legal and regulatory risk (including *Shari'ah* compliance), liquidity risk, market risk, credit and counterparty risk, operational risk, institutional risk and capital risk. One of the *sukuk* risks is also attributable to the nature of *sukuk* structures (Ali & Humayon, 2007), such that other risks involve foreign exchange-rate risk, default risk, coupon payment risk, asset redemption risk, *Shari'ah* compliance risk, and *sukuk* structure risk.

## Shari'ah Compliance Risk

*Shari'ah* compliance risk is considered to be the key risk associated with the issuance of *sukuk* for funding infrastructure projects. *Shari'ah* requirements are specified during the issuance of *sukuk* to ensure investor confidence given the competitive nature of the market (Ali & Humayon, 2007). This raises significant challenges and risks during the issuance process. In the case of project financing, the difficulty of designing the appropriate *sukuk* structure coupled with the demands and requirements of the *Shari'ah* board can significantly add to the legal costs and time taken, even before the funds are raised (Ali & Humayon, 2007).

Ali & Humayon (2007) define *Shari'ah* compliance risk refers to "the loss of asset value as a result of issuers" breach of its fiduciary responsibilities with respect to compliance with *Shari'ah*." It is understood that Islamic finance is derived from the *Quran* and the *Hadith*, being the main sources of the *Shari'ah* (Zamir Iqbal & Abbas Mirakhor, 2007). The economic paradigm reflecting the essence of a faith (*iman*) is the way of life for the Muslims (Zamir Iqbal & Abbas Mirakhor, 2007). Therefore, the basic requirement for an Islamic financial product is to comply with the *Shari'ah* in all respects (Ali & Humayon, 2007).

The essence of that an Islamic financial product stands on the five (5) fundamental well defined areas which differentiate Islamic financing with conventional financing. This areas are the prohibition of charging and paying interest on transaction (*riba*), gambling (*maisir*), uncertain contract (*gharar*), the use non-*halal* product such as pork and alcohol, and the idea of investment towards being socially responsible (Camacho, 2005).

The challenges of *sukuk* issues exist in the structure of the *sukuk* which must comply with the *Shari'ah* or has to be *Shari'ah* compliance. Each *sukuk* structure must satisfy the demands and requirement of *Shari'ah* board mandated to approve the issuance of securities. As Esty (2003) quoted that Al Tawari in The International Investor (2003) stated: "the way to understand Islamic finance is to replace the word Islamic with the word structured". Similarly, in all structured finance dealing, the constraint should be overcome with creativity and innovation (Est, 2003). Here, the constraints are based on the principles of *Shari'ah*. However, the key question is how the structure and deal with these constraints (Esty, 2013).

Camacho (2005) also quoted the statement from Majid al Refai of the International Investor in a conference in Abu Dhabi: "The nightmare scenario is that you get the day of closing and someone says there's a *haram* (forbidden) issue and you can't go ahead". The most famous criticism was from Sheikh Muhammad Taqi Usmani, the president of the AAOFI *Shari'ah* council who has taken the view that 85% of the current structures of Gulf *sukuk* such as *Sukuk Al-Musharakah*, *Sukuk Al-Mudharabah* and *Sukuk Al-Istisna* do not comply with *Shari'ah* (Yean, 2010). Also in February 2008, the resolutions of Board of AAOIFI highlighted that there are various issues in *sukuk* which were found to be non-*Shari'ah* compliant (Yean, 2010). These different scenarios have increased the difficulty in designing *sukuk* structures and complying with the *Shari'ah* as interpreted by the Islamic scholars.

In effort to ensure that *sukuk* comply with the *Shari'ah*, the Board of AAOIFI (2008) has issued six (6) recommendations on proper *sukuk* structures. These recommendations have produced better structures for *sukuk* issuances. Technically, when it comes to actual design and implementation, it has become increasingly challenging to the issuer and project owner when raising *sukuk* for funding infrastructure projects.

## Market Risk

The other most common risk in raising *sukuk* or bonds is market risk. Misnen Ardiansyah (2010) referred market risk as "the uncertainty that interest rate will change, changing the price of the bond and the return earned from reinvesting the coupon" In general, market risk comprises of four (4) elements of risk (Misnen Ardiansyah, 2010). They are interest rate risks, foreign exchange risks, liquidity, equity price risks and commodity risks.

## Interest rate risk

Interest rate risk also known as rate of return risk. Similar to the conventional bond, a *sukuk* is based on fixed rates that are exposed to risk. It means that an increase in the market (interest) rate leads to fall in the value of fixed-income *sukuk* (Ali & Humayon, 2007). All the fixed assets that derived either from *salam*, *ijarah*, and *istisna'* are faced will this risk. The volatility of interest rates also will lead to the reinvestment risk and an opportunity cost of investing at new rates. That is the reason why the maturity plays an important role in intensifying the impact of this risk (Rodney Wilson, 2008).

*Sukuk* also depends on the widespread benchmarking with Labuan International Offshore Regulators (LIBOR) in the financing operations (Ali & Humayon, 2007). The interest rate fluctuations in the LIBOR



may fluctuate, which has an impact on the profit margin of the issuer (Ali & Humayon, 2007). For example, in the *murabahah* contract, the *sukuk* issuer will have to respond to fluctuations in LIBOR because any increase in earnings will have to be mutually agreed with the investors.

### Foreign exchange rate risk

Foreign exchange rate risk is the risk that occurs due to unfavourable exchange rate fluctuations and clearly has an effect on foreign exchange risk (Ali & Humayon, 2007). Exchange rate fluctuations cause the divergence between the denominated unit of currency of the assets and the accumulated denominated currency in the pool of *sukuk* funds. *Sukuk* that are liquid or are relatively short term in nature, have less exposure. In addition to this, the composition of pooled assets will contribute to the foreign exchange risk in a much different way.

For an infrastructure project, exchange rate risk, as defined, is “variability in the value of a project, or of an interest in the project, that results from unpredictable variation in the exchange rate.” (Gray & Irwin, 2003). This risk arises from project outputs or inputs that depend on the exchange rate. However, a typical infrastructure project will sell the output in local currency, and thus is not exposed to exchange rate risk. But any input that is tradable such as fuel, whether it is imported or not with an international market price, then an exchange rate risk exists (Gray & Irwin, 2003). Any cost incurred in the infrastructure project is measured in local currency that varies inversely with the exchange rate (Gray & Irwin, 2003).

The other aspect of the exchange rate risk is that the equity price risk is related to the underlying commodities and assets in relation to the exchange rate and market price (Ali & Humayon, 2007). For example, the values of the underlying assets are more likely to be exposed to this, as they may depreciate faster as compared to the market prices. However, through parallel contracts these risks can be overcome (Ali & Humayon, 2007). In the case of financing of infrastructure projects, the amount affected by the exchange rate risk will have to be borne by the stakeholders of the project (Ali & Humayon, 2007).

### Liquidity risk

The other element of market risk is associated with liquidity. Although *sukuk* can be considered and traded in the market, however, presently *sukuk* are non-tradable at the secondary market (Yean, 2010). Most *sukuk* remain active only in the primary market. The main reason is due to the limited number of issuances and lack of alternative instruments in the asset class (Yean, 2010). For this very reason, most of the *sukuk* holders are institutions such that average private investors have been unable to invest in them. This situation makes it difficult to sell and transfer *sukuk* to the other parties due to liquidity risk.

The *sukuk* structures are exposed to liquidity risk as they are inadequately structured, combined with insufficient liquidity in the secondary market (Ali & Humayon, 2007), such that most investors hold securities until maturity. This typical “buy and hold” investment strategy and the limited diversity of *sukuk* investments produce illiquid secondary markets and thus inhibit the discovery of an efficient price (Jobst, et. al., 2008; Ali & Humayon, 2007; Yean, 2010). In Islamic financing practices, project investment typically involves some form of underlying physical asset (Usmani, 2002). Hence, the Islamic bank must have high levels of physical assets on their balance sheet as compare to conventional banks (Usman, 2002). However, in order to meet the high level of short-term obligations, the physical asset should be easily liquidated in order to raise cash for funding of infrastructure projects (Usmani, 2002). Ensuring a high liquidity ratio facilitates an Islamic bank’s financing requirements. However, physical assets are currently not always easily disposed of and could involve considerable cost relative to the cash equivalent assets (Usmani, 2002).

In project financing, a serious barrier to the growth of Islamic finance for infrastructure projects is also due liquidity risk. Typically, Islamic banks prevent an infrastructure project from taking on long term financing, as it will impact the leverage of bank balance sheets (Jobst, et al., 2008). Generally, the purpose of 'short term' liquidity for Islamic banks is to assist in liquidity management (Jobst, et al., 2008). The current status is that Islamic institutions tends to focus more on retail banking and rely on deposits as a source of liquidity rather than the longer-term bond market tapped by conventional banks (Jobst. et al., 2008). Since many Islamic banks have limited dealing with long term financing, there is a significant challenge to the Islamic finance in developing an infrastructure project, since many of these projects typically have tenure in excess of 10 years (Camacho, 2005). The "short-termism" culture within Islamic bank practices is a serious obstacle to the growth of Islamic financing (especially *sukuk*) for infrastructure projects (Camacho, 2005).

### Credit and Counterparty risk

The other prominent risk in financing infrastructure project is credit and counterparty risk. Credit risk is "the probability that an asset or loan becomes irrecoverable due to a delay or default in settlements" of payment (Ali & Humayon, 2007). On the other hand, the counterparty risk is the probability the counterparty defaults on the conditions of the contract (Ali & Humayon, 2007). Credit risk is one of the most common and important types of risk faced by the financial institutions. It is primarily related directly with the ability of the debtor to repay the financing amount at the time stipulated in the terms and conditions of the contract. The resulting effect of any delay and default in settlement of the financing amount will cause the reduction of the value of the financial institution's asset (Ali & Humayon, 2007).

Historically, the failure of project financing has occurred in several high profile projects, which has led to the reinvestigation of the risks associated with the project financing (Marco, 2014). A long maturity period is a source of risk in the project and it is suggested that further studies are required to identify the nature of credit risk in project financing (Marco, 2014). Almost all infrastructure projects require substantial investment up front and the cost will be recovered over long term from the revenue stream of the project (Macro, 2004). Therefore, long maturity period is likely to increase credit risk. As a result, any delay or default in servicing the loans due to non-performance may ultimately lead to the failure of the project (Macro, 2004).

All the parties that are involved in an infrastructure project such as issuer, bank, contractors, regulator, rating company, government and client have to ensure that they follow and provide a strong commitment to the terms and conditions of the contract (Chapra and Khan, 2000, Khan and Ahmed, 2001). This presents significant challenges to the project, as for example, counterparties would be more inclined to default on their commitments to the other parties, if there is a need to reschedule debt at a higher mark-up rate, which is prohibited as it has an element of interest (*riba*').

There are various unique credit risks in Islamic financing (Chapra and Khan, 2000, Khan and Ahmed, 2001). Numerous credit risks exist in *ijarah*, *istisna*, *salam* and *murabaha* contracts, which are asset based (Ali & Humayon, 2007). For example, *salam* contracts are exposed to the risk that commodities will not be supplied on time or according to the agreed quantity. Likewise, the *istisna* contract is exposed to performance risk that is related with the client of the bank's commitment on the conditions of the contract and where the sub-contractor may fail to deliver according to the agreed specification or requirements.

The joint effort of all related parties is one of the main challenges of financing large-scale projects (Marco, 2004), and involve certain consequences, which may rise from the counterparty risk such as coordination failures, conflict of interest and free-riding of any project participant. For example, a manager has

substantial discretion in allocating the large free cash flows generated by the project operation. The power of allocating large cash can lead to potentially opportunistic behavior that in turn results in inefficient investments.

### Operational risk

Operational risks involve an event or incident that causes a negative consequence to the operation of a project (Farid Ezanee, 2009). Operational risks can give impact to the effectiveness and efficiency of the operational activities of a project. Farid Ezanee (2009) identified numerous of operational risks for infrastructure project. Amongst operational risks include, an ineffective use of related tools and techniques to identify and predict possible risk and their potential cost impact on the project. Other operational risks are low quality in design, poor supervision, and poor management planning. Among the common effects of operational risks include time and cost overruns in operations and maintenance, non-availability of services due to asset failure and poor quality of service delivery.

The structure of the *sukuk* also involves operational risk. In terms of *sukuk* structures, Ali and Humayon (2007) have discussed several risks specific in relation to the operation of the *sukuk*. These operational risks include default risk, coupon payment risk, asset redemption risk, SPV specific risks, investor specific risk, and risk related to the asset. Default risk is an interesting issue in the ICM (Misnen & Qoyum, 2010), where in the event of a default by the obligor (bond issuer), the certificate may be terminated. In addition, if the obligor fails to pay the rentals or coupon payments, the certificate holder has the right to nullify the contract, force the obligor to buy back the assets, and subsequently take legal action against the obligor (Ali & Humayon, 2007). In the case of the coupon payment, with any delayed coupons, the obligor will be subjected to pay certain amount that will be accumulated within the Special Purpose Vehicle (SPV) (Ali & Humayon, 2007). In the case of asset redemption risk, it is the risk at the point where the originator must buy back the underlying asset from the certificate holders (Ali & Humayon, 2007). In this case, the risk of principal amount being paid may not equal to the amount of the *sukuk* issued. Investor specific risks are related with the liquidity management issues by Islamic financial institutions, which do not exist with a well-structured and sufficient liquid secondary market (Ali & Humayon, 2007). Risks related to the asset, involves the risk of loss of assets that may typically occur in a large-scale infrastructure project (Ali & Humayon, 2007).

### Institutional risk

Appropriate financial infrastructure is one of the important elements in the development of Islamic finance. Countries such as Malaysia and Bahrain are developing infrastructure facilities that should first and foremost comply with *Shari'ah* requirements, which remains as a significant challenge to the development of Islamic finance. Ali and Humayon (2007) explained that institutional rigidity refers to the current weaknesses of Islamic financial infrastructure. Camacho (2005) stated that institutional issues are one of the major barriers to accessibility to Islamic financing for infrastructure projects. Camacho (2005) listed two main issues related with institutional rigidity. Firstly, the institutions involved in the project financing may differ in how the *Shari'ah* should be interpreted. Most likely to happen is that some *Shari'ah* Boards allowed their respective institution to invest in certain *sukuk*, while others do not allowed their institutions to invest in such *sukuk* as they view them *Shari'ah* non-compliant. Government, investors, and banks can differ in the way which *Shari'ah* is being practice. The difference opinions from *Shari'ah* scholars to the others on whether certain practices or products are *Shari'ah* compliant still continue. Secondly, the institutional barrier in achieving *Shari'ah* compliance is the lack common accounting practices, which also may increase transaction costs and raise uncertainty. A common set of standard practices in the institutions such as the AAOIFI, the IFSB, and the FSA play crucial role in the addressing the *Shari'ah* compliance issue.



Ali and Humayon (2007) argued that there is currently a lack of features for Islamic financing, which increases the risk in providing Islamic financing for infrastructure projects. The lists of features are (Ali and Humayon, 2007):

- Non-existent inter-bank money market;
- Lack of hedging and financial engineering processes;
- Non-uniform accounting, auditing and income and loss recognition systems;
- Lack of best practice and uniform regulatory standards and regimes;
- Weaknesses in litigation and legal support framework, particularly, in the treatment of default;
- Non-robust investment appraisal, promotion and monitoring infrastructure;
- Ineffective external credit assessment systems;
- Rudimentary state of financial markets and
- Weak inter-segmental support and linkages

### Capital risk

One of the obvious risks in providing funding to infrastructure projects is capital risk. Capital risk can be divided into two categories (Camacho, 2005). The first category is the lack of knowledge of Islamic financing techniques. Second is the lack of human capital. Related to the lack of knowledge is that many conventional banks are reluctant to get involve in Islamic financing. These banks still lack knowledge especially in relation to the nature of the short-term practices of Islamic banks. The reluctance of these banks to enter into Islamic financing is missed opportunity in financing development, as most of these banks have enough liquidity and the expertise to cater for the Islamic approach to financing. The barrier of entry presents a significant challenge for developing and exposing infrastructure project to Islamic finance (Camacho, 2005). In relation to human capital, it is quite difficult to find experienced bankers who have a good understanding of Islamic finance and related concepts, but at the same time have knowledge of actual bank practices. It is also the case that many scholars well understand key concepts in Islamic finance, but have little or no experience as practitioners (Camacho, 2005).

Faizal Ahmad (2008) in his study about role and responsibilities of *Shari'ah* Supervisory Boards (SSB), mentioned that the Islamic finance industry requires personnel who are trained both in Islamic jurisprudence and secular fields. Some of the criteria of *Shari'ah* scholars in Islamic finance are those who are conversant with market disciplines, and should have specialization of related markets, such as banking or ICM, be qualified in Islamic Jurisprudence, should be prepared to work with *shura'* (Islamic consultation) and not impose his view only, and should display some level of religiosity and *taqwa* (fear for Allah) (Faizal Ahmad, 2008). Currently it is a challenge to discover scholars that fulfill all of these criteria.

### Summary of *Sukuk* Risks

A summary of *sukuk* risks are presented in Table 1. The classification of *sukuk* will determine the type of *sukuk* to be issued. It is imperative to note that these assets can be prepared for the issuance of trust certificates in a number of ways tailored to the needs of the issuing entity. The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) has extensively outlined the various asset classes that can form the basis for *sukuk* certificates (AAOIFI, 2002).

The zero coupon risk is the classification of a *sukuk* structure to be created, where the assets have yet to be mobilized. The credit risk identifies the various unique credit issues that exist in *sukuk* (Khan and Ahmad, 2001). While, the rate of return is very high due to fixed rate, for it remains until the entire maturity of the issue.

Additionally, the risk for *ijarah sukuk* is a default on rent payments. When at the fixed rate, it makes credit risk more seriously because the fixed rate are make more of issuer fail to settle on rent payment. While, the rate of return in the fixed rate *ijarah* classification is very high due to fixed rate. That is remains for the entire maturity of the issue.

The floating rate *ijarah sukuk* is securitized *ijarah*, certificate holder owns part of asset or usufructs and earns floating rent indexed to market benchmark such as LIBOR. This type of *sukuk* face the credit risk when the default on rent payment and when the floating rates have it will makes default risk for the lesser is serious. Otherwise, the rate of return will exists only within the time of the floating period normally six months.

Fixed rates for Hybrid or pool *sukuk* involve an underlying pool of assets that consists of *istisna*, *murabahah* and *ijarah* receivables. Indeed, having a portfolio of assets composed of different classes allows for a greater mobilization of funds, as previously inaccessible *murabahah* and *istisna* assets were comprised in a portfolio. In this pooled *sukuk*, debts must not be more than 49% and there is the possibility of a floating rate. The credit risk exists because the debt is part of pool. When default on rental occurs involving a fixed rate the credit risk is significant, since the rate of return of this *sukuk* is very high due to the fixed rate, which will remain for the entire maturity of the issue.

The *Musharakah* Term Finance *Sukuk* (MTFS) is the medium term redeemable *musharakah* certificate based on diminishing *musharakah*. This can be considered as an alternative to *sukuk* because of their seniority to the issuer's equity, their redeemable nature, and their relatively stable rate as compared to dividend payouts. For the credit risk, *musharakah* has high default risk (Khan and Ahmed, 2001). However, MFTS could be based on the strength of the entire balance sheet. While the rate of return similar to the case of the floating rate. This is however unique in the sense that the rate is not indexed with the benchmark like LIBOR, hence it is least exposed to this risk.

*Salam sukuk* means forward sale of *sukuk*. The credit risk in *salam sukuk* has unique credit risk (Khan and Ahmed, 2001). It also very high due to fixed rate in the rate of return. Besides that, the foreign exchange rate risk for all the type of *sukuk* happened when the currency risk arise from unfavorable exchange-rate fluctuations, which will undeniably have an effect on foreign exchange positions. If all other conditions are similar, foreign exchange risk will be the same for all cases of *sukuk*.

However, those *sukuk* which are liquid or which are relatively short term in nature will be less exposed. The composition of assets in the pool will also contribute to the foreign exchange risk in different ways. Hence, this can be very useful tool to overcome the foreign exchange risk by diversifying the pool in different currencies.

For all this type of *sukuk*, the price risk relates to the prices of the underlying commodities and assets in relation to the market prices. *Ijarah Sukuk* is most exposed to this as the values of the underlying assets may depreciate faster as compared to market prices. Maintenance of the assets will play an important part in this process. Liquidity of the *sukuk* will also play an important part in the risk. *Salam* is also exposed to serious price risks.

However, through parallel contracts these risks can be overcome. Then, liquidity risk is serious as far as the non-tradable *sukuk* are concerned. Business risk of the issuer is an important risk underlying *sukuk* as compared to traditional fixed incomes. *Shari'ah* compliance risk is another one unique in case of *sukuk*. Infrastructure rigidities, for example the non-existence of efficient institutional support increase the risk of *sukuk* as compared to traditional fixed incomes (Sundararajan and Luca, 2002).

Table 1: Summary of *Sukuk* Risks

<i>Types of Sukuk</i>	<i>Description of Sukuk structure</i>	<i>Credit Risk</i>	<i>Rate of return (Interest rate risk)</i>	<i>FX risk</i>	<i>Price risk</i>	<i>Other risks</i>
<i>Zero coupon Sukuk</i>	Istisna', Murabahah debt certificates – non-tradable	Unique basis of credit risks exist, see, Khan and Ahmed (2001)	Very high due to fixed rate, remains for the entire maturity of the issue	If all other conditions are similar, FX risk will be the same for all cases of Sukuk. However, those Sukuk which are liquid or which are relatively short term in nature will be less exposed. The composition of assets in the pool will also contribute to the FX risk in different ways. Hence this can be very useful tool to overcome the FX risk by diversifying the pool in different currencies.	Price risk relates to the prices of the underlying commodities and assets in relation to the market prices. Ijara Sukuk are most exposed to this as the values of the underlying assets may depreciate faster as compared to market prices. Maintenance of the assets will play an important part in this process. Liquidity of the Sukuk will also play an important part in the risk. Salam is also exposed to serious price risks. However, through parallel contracts these risks can be overcome	Liquidity risk is serious as far as the non-tradable Sukuk are concerned. Business risk of the issuer is an important risk underlying Sukuk as compared to traditional fixed incomes. <i>Shari'ah</i> compliance risk is another one unique in case of Sukuk. Infrastructure rigidities, i.e., non-existence of efficient institutional support increases the risk of Sukuk as compared to traditional fixed incomes, see Sundararajan, & Luca (2002)
<i>Fixed Rate Ijara Sukuk</i>	Securitized Ijara, certificate holder owns part of asset or usufructs and earns fixed rent - tradable	Default on rent payment, fixed rate makes credit risk more serious	Very high due to fixed rate, remains for the entire maturity of the issue			
<i>Floating Rate Ijara Sukuk</i>	Securitized Ijara, certificate holder owns part of asset or usufructs and earns floating rent indexed to market benchmark such as LIBOR – tradable	Default on rent payment, floating rate makes default risk lesser serious – see previous case	Exists only within the time of the floating period normally 6 months			
<i>Fixed rate Hybrid/ Pooled Sukuk</i>	Securitized pool of assets; debts must not be more than 49%, floating rate possibility exists – tradable	Credit risk of debt part of pool, default on rents, fixed rate makes credit risk serious	Very high due to fixed rate, remains for the entire maturity of the issue			
<i>Musharakah Term Finance Sukuk (MTFS)</i>	Medium term redeemable musharakah certificate based on diminishing musharakah – tradable as well as redeemable	Musharakah has high default risk (see Khan and Ahmed 2001), however, MTFS could be based on the strength of the entire balance sheet	Similar to the case of the floating rate. This is however, unique in the sense that the rate is not indexed with a benchmark like LIBOR, hence least exposed to this risk			
<i>Salam Sukuk</i>	Securitized salam, fixed-rate and non-tradable	Salam has unique credit risk (see Khan and Ahmed 2001)	Very high due to fixed rate			

Source: Tariq (2004, p.4)

## Discussion

*Sukuk* are asset backed, stable income, tradable, and *Shari'ah*-compatible certificates. The issuance of *sukuk* when the primary condition is the existence of assets on the balance sheet of the government, the monetary authority, the corporate body, the banking and financial institution or any entity that wants to mobilize their financial resource (Ali & Humayon, 2007). *Sukuk* also have common risks of using ICM in order to raise funds for the infrastructure project. They are legal and regulatory (include *Shari'ah* compliance) risk, liquidity risk, market risk, credit and counterparty risk, operational risk, institutional risk and capital risk. Ali & Humayon (2007) describe about risks of *sukuk* structures list out some risks in *sukuk* structures. These risks are market risk, foreign exchange-rate risk, credit and counterparty risk, default risk, coupon payment risk, asset redemption risk, *Shari'ah* compliance risk, and liquidity risk.

It is stated the structure of zero coupon *sukuk* as a *Shari'ah*-compatible debt finance instrument. The traditional zero coupons are not same with the zero coupon *sukuk* because the limitation of the zero coupon *sukuk* is that these are not tradable in Islamic secondary market. These instruments face serious liquidity issues and cannot be adjusted to the variations in market conditions such as prices, interest rates and exchange rates. Otherwise, investors in these assets are exposed to serious market risk. Unless these market risks are mitigated efficiently, the *sukuk* markets will face stark challenges in competing with traditional bond market (Ali & Humayon, 2007). So, for the infrastructure project that is financed by *sukuk* will be faced with market risk. The risks increase when there is a liquidity problem.

Additionally, *istisna' al-ijarah* also applies in the construction phase of a project and an *ijarah* contract is put in place for the operations or implementation phase. *Istisna'* is the manufacture, delivery and construction of the relevant plant and equipment from the manufacturer (Chadbourne & Parke, 2010). An *al-ijarah* involves an (operating) lease, where any project assets will be leased by issuing the *sukuk*. The funds will be disbursed when issuing the *sukuk* to fund the development of the project. This will influence how the project is executed through the *sukuk* funding (Karim Nasif, etc, 2009).

## Conclusion

Project management is a complex process and involves various types of risks. An infrastructure project funded by the ICM requires improved understanding and analysis in every aspect, especially when dealing with risk. Thus, risk management for infrastructure projects is very important determinant for a successful project outcome. Identifying and analyzing the risk is essential before selecting the appropriate risk management method. Additional comprehensive studies that focus on the risks associated with infrastructure projects funded by *sukuk* should be conducted. It is also essential that risk management modeling should be developed for projects funded via the ICM.

Moreover, when risk management is adopted in the Islamic Capital Market, investors may avoid losses attributed to the investment. Competent risk management can also attract investors to join project development, and without *riba'*, *gharar* and *maysir* the project is very likely to improve successful project implementation and outcome.

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