

Structuring Alternative Investment in Public Private Partnership Projects Using Islamic Financial Instruments

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Abstract — The provision of sustainable infrastructure in an economic environment packed with limited budgetary resources and restrained market demand poses severe investment challenges for the public and the private sectors. Such challenges do exist not only in the provision of new facilities but also in maintaining the existing public infrastructure. Public-private partnerships are considered an effective solution for infrastructure provision under the restrained financial situation, however, the longer time-period involved in PPPs make such investments riskier and eventually results in higher project costs. Islamic financing through newer on global investment landscape but may offer a simpler and competitive solution for medium to long term investment issues for public-private partnerships. Islamic finance is a set of Shariah-compliant financial instruments that could be engineered to adjust to a given investment environment. This paper provides an insight into the latest Islamic financial instruments for understanding their applicability to present-day PPP environment. It describes the use of the most relevant of the Islamic financial instruments, which could be applied for PPP/PFI investment to ensure project sustainability in financial terms.

Keywords — Project finance, Shariah-compliant investments, Local government, Public-Private Partnerships.

I. INTRODUCTION

Islam is the youngest of three Abrahamic religions after Judaism and Christianity. As a religious obligation, any form of interest (riba) in financial dealings is abolished in all three religions. The origin of Islamic finance dates to the dawn of Islam 1400 years ago. Muslims practiced a fundamental version of Islamic finance for many centuries, however, the modern Islamic finance industry as a coordinated financial system emerged in the 1970s (Jamaldeen, 2012). Although the center of activity remains within the Gulf Cooperation Council (GCC) countries and South East Asia, Islamic financial institutions are one of the fastest-growing financial sectors (Sarea, 2012). This is especially true in western societies like Ireland, UK, France, Russia, Netherlands and Luxembourg which have all crafted legislation to

permit its use or are in the process of doing so after discovering that it can be used by Muslims and non-Muslims alike (DoF, 2012). It has been expanding in other parts of the world including North America, Europe, Africa, and Asia. Presently, the size of the Islamic financial industry ranges from US\$1.66 trillion to US\$2.1 trillion. However, upon the maturity of recently announced projects from Saudi Aramco, the size of the industry may touch a figure of US\$10 trillion by the end of 2018 (Malaysia, 2016). One of the reasons for this expansion is the flexibility and adaptability of Islamic financial products and instruments. The Islamic financial system based on Islamic Law (Sharia) is in an evolving stage. In different regions, Islamic banking is operating in various revolutionary or evolutionary regulatory frameworks (Pakistan, 2008). Structuring an alternative Islamic financial instrument or product generally begins with a conventional investment structure (Anwar, 2008), and then exclusion of undesired elements after exhaustive analyzes and inclusion of desired Shariah-compliant elements into the final product structure. The product needs to be financially efficient (against conventional investment structure as a benchmark) and easy to manage. PPPs are an important mechanism for infrastructure development and applying Islamic financing for such schemes is comparatively a newer phenomenon. The analytical results show that the project performance parameters are better in the case of PPPs with Islamic finance as compared to conventionally financed PPPs (Masamitsu Onishi, 2012). Islamic project finance IPF is an innovative system of tools different from conventional finance. In IPF, financial tranches may or may not be integrated with multi-source financing including conventional lenders, multinational development banks, and credit agencies (Masamitsu Onishi, 2012). This paper develops a conceptual framework that explains how an Islamic financial product could be effectively applied in the financially constrained environment for private finance initiative PPP/PFI projects.

PFI model for infrastructure development in most of the cases leads to huge public sector bail-outs, even expensive buy-back restructuring. One of the principal reasons is the financing structure which has a large

portion of the debt (Noor Amila Wan Abdullah Zawawia*, 2013). The borrowing cost of capital pertains to the higher capital costs which in turn are transferred to the next generations. Because of the higher capital costs, the true value of money has not been yet realized even after more than two decades of using the PFI model for infrastructure. It becomes acuter owing to the longer durations ranging from 10-60 years. The equity to debt ratio which is usually 10-90% under best circumstances is a more worrisome feature (Noor Amila Wan Abdullah Zawawia*, 2013). The PFI model has been gradually converted to PF2 to raise equity to debt levels to 25%-75% to grant more stability. Whereas, Islamic project finance has an inbuilt risk-sharing mechanism and holds the better promise of being interest-free, low cost with sustainable project performance. In Japan, PFI/PPPs are facing supply/demand dilemma from either end of the market. From the supply end, the Private sector is reluctant to invest due to almost flat interest rates over a long period along with a shrinking demand-side linked to shrinking demographic outlooks (Masamitsu Onishi, 2012). Facing current fiscal deficits, market stagnation, and budget restrictions, it is becoming more and more difficult for the government to develop or retain social services infrastructure. This paper is dedicated to analyzing the possibilities and potentials; Islamic finance can offer in a critical economic environment.

II. BASICS OF ISLAMIC FINANCE

The core of the Islamic financial system is a body of immutable and invariable rules, set by the principles of Shariah, however, on the periphery of the system, rules to regulate Shariah-based financial system could be crafted in line with the core principles (Mirakhor, 2011). These latter are decisions taken by legitimate authorities in an Islamic society.

Three core principles of Islamic finance are (Mirakhor, 2011):

- Prohibition on interest (Riba)
- Prohibition of uncertain or speculative nature of transactions (Gharar)
- Prohibition to invest in Shariah restricted business activities

In Islamic finance, the most important is the prohibition of riba (interest or usury). It implies that financial transactions are structured differently than those in conventional finance. It also implies that the asset structure of the Islamic financial institution IFI stands entirely upon tangible assets and partnership arrangements are also based on interest-free assets. Gharar (speculation)

and Mayer (gambling) are strictly prohibited. An IFI cannot participate in commodity businesses that are

forbidden in Islam such as alcohol, pork, adultery, criminal activities and owning equity in riba-based institutions (Lewis, 2001). An Islamic Financial Institution (IFI) refers to any financial institution that performs Islamic transactions derived from either Islamic law or Islamic economic theory. Islamic financial institutions include venture capital firms and insurance companies, and maybe distinguished from conventional banks by three primary elements (Bahrain Monetary Agency 2002):

- Refrain from prohibited financing activities
- Be a source of integration of religious social life under Islamic law
- Supervised by a Shariah Standards Board (SSB) exists as a unit of IFI.

An IFI should combine the elements of Islamic financial practices with some effort to uphold Islamic daily life practices (Lewis, 2001). The industry of Islamic banking and finance is expanding as the world's potential market for Islamic finance consists of more than one billion Muslims, in addition to non- Muslims, who are welcome and encouraged to participate in Islamic finance (Hunt-Ahmad, 2013).

ISLAMIC FINANCIAL INSTRUMENT : A financial instrument is a contract; whose terms and conditions define the risk and return profile of the subject investment. In Islam, a financial contract shall be considered valid if it does not involve interest, uncertainty, and ambiguity and is for the permitted activities under Sharia law. The core principles for the structuring of an Islamic financial instrument are:

MONEY AS A POTENTIAL CAPITAL: In Shariah, money is considered only a store of wealth and a medium of exchange. It is believed to be converted into capital only after combining with other resources of productivity like labor or knowledge base. Islam accepts the time value of money, only when it acts as capital. Money in its liquid form cannot be lent for profit. It needed to be converted into a physical asset or tradable commodity before being lent out for profit.

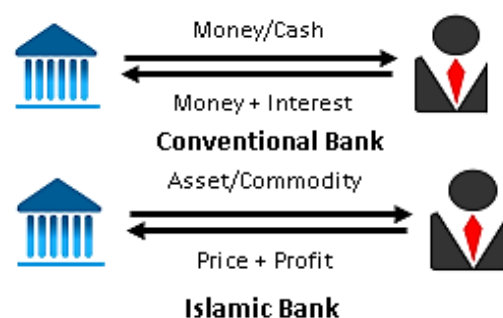


Fig.1 Fundamental difference in conventional and Islamic Finance

ELIMINATION OF INTEREST: Predetermined rate of return, guaranteed regardless of investment portfolio performance is considered *riba* (Interest) and is prohibited. The restriction applied on interest leads elimination of pure debt security from the system and hence supplier of funds treated as an investor rather than a creditor. The provider of capital and the borrower bear business risks in return for shares in profits and losses. To replace interest by profits needs a financial system with a close link between the real world and the financial world. It could only be attained if the finances are directly linked to underlying assets. It is achieved by keeping underlying assets under the investor's title until the transactions are matured or completed.

PROHIBITION OF SPECULATIVE BEHAVIOUR: The Islamic financial system discourages hoarding and prohibits transactions featuring uncertainty in procedures or outcomes. It suggests a comprehensive analysis and distinction between uncertainties and risks involved in the project before designing an Islamic financing plan for a project.

Broadly speaking, Islamic financial instruments can broadly be divided into four major classes for application to project finance:

Table 1. Classes for application to project finance

Financial Markets	IF Instrument	Application
Equity Markets	Musharakah, Mudarabah	Joint Ventures
Credit Markets	Murabaha, Ijarah, Salam, Istisna	Banking, Lease
Securities Markets	Sukuk	Capital raising
Insurance Market	Takaful	Insurance

Developed on common core principles, any of the instruments could be applied to assist investment procurement depending on the prevailing situation and after a thorough analysis of its optimality against returns on investment. Different Islamic Financial instruments may result in un-identical project feasibility parameters for the same project. Islamic Project Finance is a set of independent but interlocked financial instruments and contracts which work under Shariah, at different stages of the project implementation (KMPG, 2009). For instance, a single infrastructure development project might be comprised of more than one Islamic financial instrument including Sukuk instrument for fundraising, Istisna instrument for construction activities and Ijarah instrument at operation phase of the project (Mohamed,

2008). Hence, at any procurement link of the project development, investments are made sure to be asset-based or asset-backed to assure the risk-sharing mechanism in place.

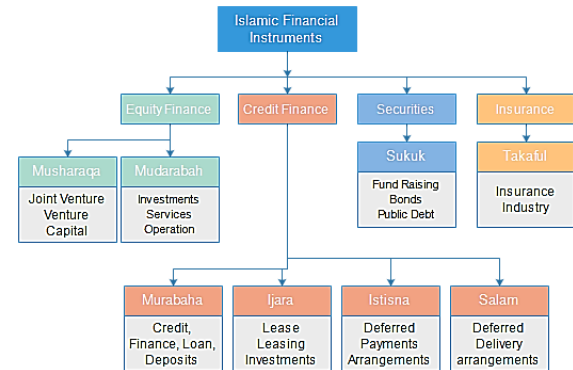


Fig.2 Types of Islamic Financial Instruments

ISLAMIC FINANCE IN PPPS:

Financial considerations being equally important, currently, the public-private partnerships are solely evaluated on procurement parameters. The financing arrangements are considered important only for the sake of financial reporting. In the evolving PPP sector, the partnership arrangements are far more complex for their hybrid structures. In its typical format, for delivery to a public facility via PPP, an SPV is created to contract with the public authority. The SPV raises finances at its own which usually include senior and subordinated debt with a tiny inclusion of equity by the SPV owners or the sponsor (Maryouri, 2013). The related companies, which are legally separate entities, contract to deliver the construction and secondary service elements of the projects. However, PPP from Islamic financial perspectives makes emphasis on the financial aspects of the project. Although capital is raised largely via capital providers, the contractual agreements and arrangements are substantially more important. These contractual arrangements vary per the scope and nature of the Islamic financial instrument implied. Private sector participation in public infrastructure development through the “public-private partnerships” are common under conventional finance, however, Islamic financial structures have certain limitation for direct applicability to such schemes specifically regarding title transfer of the newly built assets, such as roads or airports (Nethercott, 2011). For example, in a BTO (build transfer operate scheme), the developed assets are transferred to the grantor on completion and such assets cannot be a subject of an Ijarah structure during the operation phase of the project. The issue has been resolved by structuring the instruments under Ijarah where rights were sold to the financiers under the concession agreement. This financing structure is now

being applied in different regions of GCC and around the world where the project is qualified for Islamic finance.

III. FINANCIAL STRUCTURING OF PPP PROJECTS

PPP UNDER CONVENTIONAL FINANCIAL STRUCTURING: Traditionally, the public sector possesses and maintains its infrastructure using public taxes and borrowings. The private sector usually is responsible for the construction and completion of works. The nature and risk of financing are different for PPP schemes where the private sector takes responsibility for the initial financing of the project, its maintenance and operation (may or may not) during the project lifetime. PPP projects may fall into three distinct categories based on the mechanism used to repay project financing costs (Simon Lewis, 2012).

- **PFI:** The projects completely developed and operated by the private sector and the cost is repaid directly by the public sector via availability funds or shadow tolls
- **PFI/Lease:** The cost of the project is shared by the public and private sectors while the private sector takes responsibility for the project operation and the repayments are made mutually through availability funds and direct revenues.
- **Concessions:** The project stands financially free. Developed and financed by the private sector and repayments are ensured through direct revenue collection.

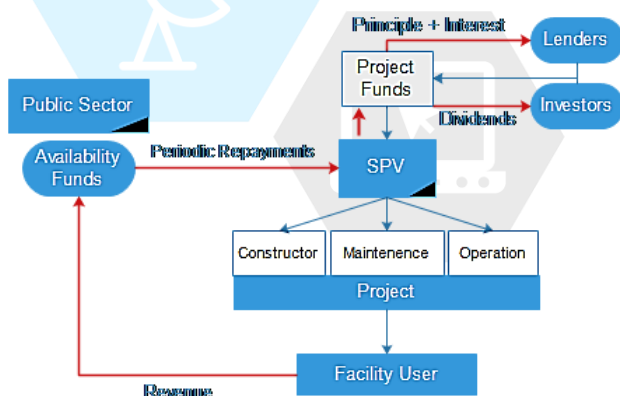


Fig.3 Typical procurement framework for conventional finance PPP Projects, PFI

PFI Structure Finance

- SPV Creation
- Equity/Credit Finance
- Revenue collection by grantors
- Periodic repayments
- Cost-plus

- Small-Medium projects
- Public/Private low risks
- Shorter concessions
- Higher user costs
- Demand risks/Public

This paper explains the application of Islamic finance into PFI/BTO and BOT schemes combined, considering solely the mode of capital repayments.

In the case of Islamic finance, the emphasis is given on possible alternative financing mechanisms rather than on religious or Shariah compliance issues.

The PPP financial procurement under conventional finance is briefly explained for comparing the suggested alternatives.

Versatility and flexibility of the Islamic financial instruments make their applicability take every possible form for project finance.

From a financing standpoint, the reference interest rate is normally 3-month/ 6-month LIBOR (Ismail, 2013), to which the loan margin is added along with a service charge and a commitment fee (as a percent of the margin).

Depending on the region, project type, lead time, risk profile and other incumbent factors, borrowing costs may form a greater part of the project repayment schedule.

Besides financial costs, the risk-sharing mechanism is more inclined to SPV, which is supposed to take and distribute risks with its responsibility. In most events, the sponsor and the investors keep themselves at a distance from the project risk matrix.

THE COST OF BORROWING: Interest earned is the central tool in modern investment practices. Future value of the investment is calculated as:

$$FV = PV(1+i)^n$$

Where i = interest rate

n = number of years

FV= future value

PV= present value

$$\text{Hence Total interest} = FV - PV$$

Transaction costs end at extremely higher ends because of longer lead time of PPP concessions. However, effective interest rates at continuous compounding terms may yield much higher future values.

A typical financial layout profile for a standard BTO/BOT concession under conventional finance is

depicted in Fig 4. The following phases are important to configure the financial obligations of the project.

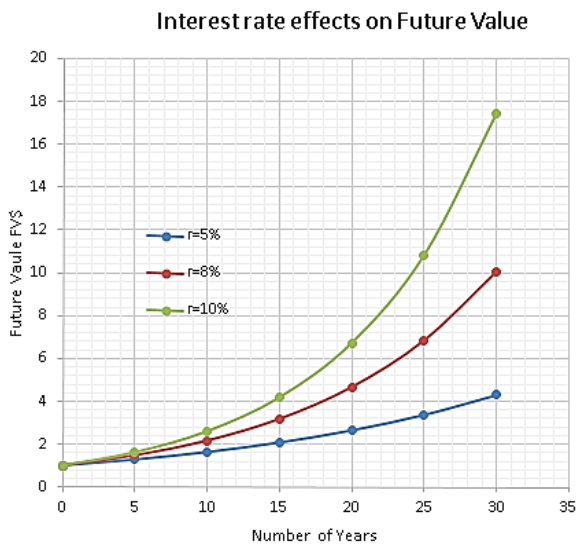
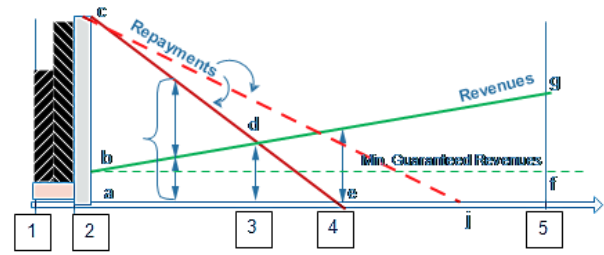


Fig.3A: Typical cost of borrowing for longer time profiles

Grace period time usually spans from project inception to commissioning and involves project planning, fundraising, design, and construction. Depending on the circumstances loan drawdowns are made as per requirements and in most of the cases, only interest repayments on drawdowns are serviced.

- At commissioning, the project has a predetermined repayment schedule with known revenues. The sponsor at this stage may lease the facility or can make other arrangements to take care of repayments. In most of cases, after commissioning for a considerably long period project revenue alone may not meet the repayments targets and further loans are arranged for debt servicing which in turn, stretches (cj) pressured revenue streams.
- Until breakeven, when project revenues are equal to expenditures, a debt of amount (shown by Δbcd) needed to be inducted. The project will exhibit its profitability after the complete repayments are made.
- The profitability regime ($\triangle defg$), also depends on the revenue stream. Considering a fixed predetermined revenue stream (provided with minimum revenue guarantees), growing at a given rate might help profitability. However, an uneven, unpredictable or diminishing revenue stream may put the project under severe repayments and profitability risks. This is one of the fear, investors are facing in an economy of declining population statistics.



Example

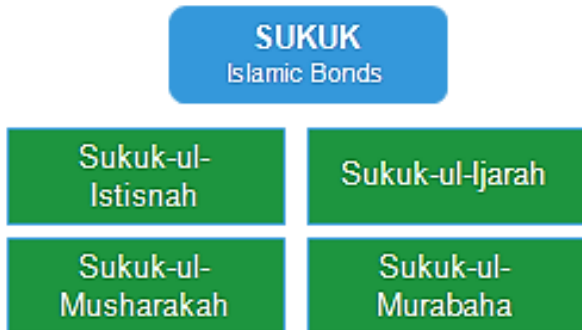
Capital Cost	100 M
Interest rate	6% annum
Concession	30 years
Revenues Guaranteed	10M/Y
Debt service loan	~200M
Total repayments	~450M
Payback time	~25 years

Fig.4 Life Cycle Cost LCC with Financial Layout BTO/BOT under conventional finance

- In general, value for money VFM or project sector comparator PSC is used to evaluate PPP performance. However, obtaining net present value NPV of a project's life cycle cost LCC can be difficult, and will often vary from industry to industry. The discount rate is also applied in accordance with the nature of cash flows e.g. either predetermined guaranteed cash flows or unguaranteed, unassured cash flows (Meysam Safari, 2013). The factoring of discount rates may further escalate repayments stream. Computing actual cash flows are extremely cumbersome and are not the subject of this paper, however, the table in Fig.4 gives a glimpse of a PPP project performing under normal financial circumstances.

PFI infrastructure projects procured under Islamic finance may consist of several alternatives. Until recently, the PPP scheme including BTO and BOT models have been successfully adopted in the Middle East, Europe and UK under a mix of Islamic finance instruments in PPP financing depending on prevailing circumstances. The worth mentioning of these is Queen Alia International Airport Project, Hashemite Kingdom of Jordan and Hajj Terminal, King Abdul Aziz International Airport Project with project costs of US\$680 million and US\$ 350 million respectively. The building blocks for the Shariah-compliant PPP finance are the independent Islamic financial instruments firmly interlocked within the financing plan. As a principle requirement, all interest-bearing transactions shall be eliminated and replaced by a risk-sharing mechanism. All transactions needed to be asset-based to ensure risk/reward environment. Sukuk is the Islamic alternative to conventional bonds and is commonly used

for fundraising for the project finance, simply speaking Sukuk are the “Islamic bonds”. Sukuk is also referred to as Islamic capital markets and is the Shariah-compliant alternative to interest-bearing investment certificates and offers Islamic investors a right to receive a share of profits generated by the underlying asset and could be traded in secondary markets as well.



Sukuk seems like conventional bonds for having a fixed term of maturity, a coupon, tradable in secondary markets with a normal yield price. However, by default, Sukuk is an exchange of an approved asset for certain financial considerations and allows Sukuk holders to earn profits extracting from the usufruct of the underlying asset while conventional bonds are merely an exchange of paper based on interest earnings

Sukuk is categorized based on the mechanism applied to generate income from the underlying asset during the Sukuk term. For PPP/PFI model, the use of the preferred instrument depends on an array of variables including, Infrastructure sector, operation phase arrangements and sponsor's share in equity. The most commonly implied financial structures are Sukuk-al-Istisna and Sukuk-al-Ijarah. The two shall be explained briefly in their order of applicability. It is a contract based on the sale of a nonexistent capital asset which is still to be manufactured or constructed and delivered at a future date. An approved asset is comprised of an income-generating unit held by either public or private entities. This instrument is preferred in construction activities, construction of social infrastructure facilities and provision of heavy equipment like turbines, machinery, etc. Istisna contract is an order to manufacture a specific good/facility for the purchase. The price and specification of the good/facility are needed to be agreed at the outset. It is supposed to be a useful tool for funding of the construction phase of a project. Systematically, the instrument may look like as in Fig.5. These transactions are based on a procurement agreement between an SPV as a purchaser and the project company, the borrower as the procurer (Christopher G. Cross, 2013). The Istisna agreement operates for the construction phase of the project. On delivery, the title and the possession of the assets pass to the SPV. An important feature of this structure is the use of the SPV to act on behalf of the Islamic financiers as the

purchaser. This structure has benefits for both the financiers and the project company. In the case of the financiers, they are protected from the risks associated with the ownership of the assets, for example, environmental liability. In the case of the project company, because the assets are not held by the Islamic financiers directly, the project company and the assets are isolated from the risk of insolvency of an Islamic financier (Christopher G. Cross, 2013)

APPLICATION: This financing instrument is best suited for small to medium size PPPs with comparatively shorter construction periods such as water utility, health, education, and similar social sector projects. The instrument is limited to be used for the construction of the new facility and cannot be applied for operation or servicing purposes. As is the case, the underlying asset doesn't exist but to be constructed, the usufruct of an imaginary asset can only be realized with a forward lease contract

FINANCIAL PROCUREMENT: An SPV is formed via the originator's deliberation to Sukuk issuance. SPV offers Sukuk certificates to investors and performs as a Sukuk issuer as well as a trustee for the investment. The proceeds are utilized for the construction of the subject/underlying facility (Mohamed, 2008). The contractor may also be the originator of the Sukuk if asked to raise funds independently. In case, if local government LG prefers to invest for a project or the LG may take up the role of the originator. It all depends on the PPP project outline. After the project, has been commissioned, the SPV may take up the project title and will lease it to the operator. The lease/rental proceeds are then distributed as coupon money to the investors. The issue of distributable coupon money during the construction phase of the project is usually managed by entering a forward lease contract with the originator.

Key Features of Istisna Structure

- Sukuk offerings
- Cash proceeds
- Undertaking to complete the project in future
- Periodic advance proceeds
- Project commissioning
- Lease agreement with obligor undertaking
- Lease rental proceeds
- Profit (Coupon) distribution to investors
- Lease terminates, obligor purchase
- Cash proceeds
- Redemption of Sukuk

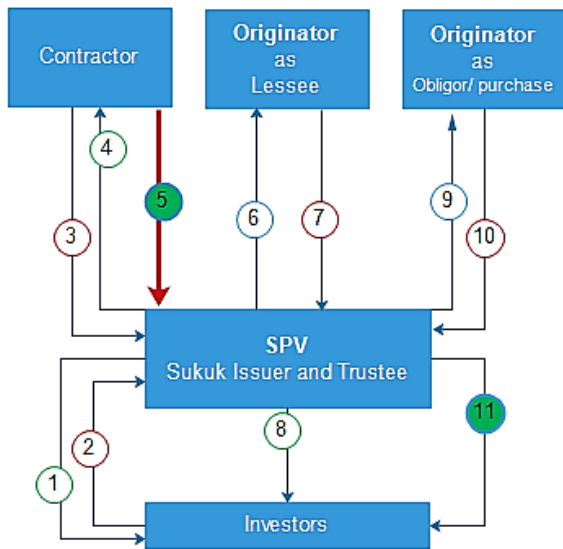


Fig.5 Systematic layout of Sukuk-al-Istisna for project finance

The maturity term of Sukuk is predetermined and is in line with the lease termination. The lessee has a mandatory obligation to buy the asset at a price equal to the redemption cost of the Sukuk payable to the investors. Sukuk-al-Ijarah is commonly used to raise funds through Islamic bonds for project finance. Ijarah Sukuk is also recommended as a favorite form of project finance by Shariah scholars because of its simplicity (Mohamed, 2008). The term “Ijarah” is to mean the ‘transfer of the usufruct of an asset to another person in exchange for a rent claimed’. To generate returns for Sukuk holders, all Sukuk structures imply the performance of an underlying asset. The Ijarah can provide a regular source of income to facilitate coupon payments to Sukuk holders (Global, 2013). It has inbuilt flexibility to tailor the Sukuk repayment profile.

APPLICATIONS: Sukuk al Ijarah is a preferred option for capital raising for project finance. The instrumental and the contractual structure is the simplest in form and are highly suitable for the construction of new infrastructure facilities (Sharifah Nurul azlin Bt, 2013). It is equally good for long-term concessions with direct revenue collection rights. Sukuk al Ijarah is a preferred Islamic instrument for social infrastructure development and maintenance by local governments in sectors like water supply, sewage, education, health and social services (Sharifah Nurul azlin Bt, 2013).

FUNCTIONAL PROCUREMENT: As a standard Sukuk procurement, an SPV is formed via the originator’s intention to raise capital via Sukuk issuance. The originator of the sponsor will sell its assets to SPV and the SPV offers Sukuk certificates against the purchased asset. The SPV will take the role of a trustee for Sukuk holder over the term of the Sukuk certificates.

The proceeds are utilized for the purpose. The SPV will enter a lease contract with the originator against the underlying asset over the Sukuk term. The proceeds arising from lease/rental payments of the leased asset shall be passed on to the Sukuk holders as coupon payments. The lessee must enter an obligor contract to buy the asset at the lease expire at a price equal to redemption claims of the Sukuk holders. Hence at the end of the Sukuk term, the obligor/originator may assume ownership of the asset at the price of original Sukuk issuance. Other intermediate arrangements are also possible to buy back the asset at an earlier point. Such as, the lessee can buy asset’s Sukuk whenever the project cash flows allow doing so. A typical layout of the financial arrangements under Sukuk al Ijarah is shown in Fig.6.

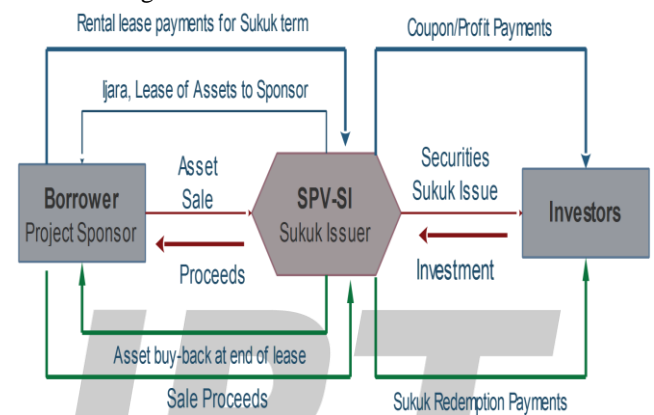


Fig.6 A typical financial layout for Sukuk-al-Ijarah for project finance

Other Sukuk arrangements include Sukuk-al-Musharakah, Sukuk-al-Mudarabah, and Sukuk-ul-Murabaha. These financing tools also have unmatched and positive applications for raising capital for project finance, however, they are not covered fully in this paper. For instance, Sukuk-al-Musharakah is useful for partnerships and accommodates equity contribution to the project’s financial health. Similarly, Sukuk-al-Mudarabah would be a choice where investor/sponsor needs technical experts to operate the project.

IV. STRUCTURING OF PPP PROJECT ON ISLAMIC FINANCE

PPP/PFI/BTO Schemes: Infrastructure projects are mainly comprised of two phases, namely the development and the operation. In Islamic Finance, the two phases would be treated as separate activities as far as financial procurement is concerned. In conventional finance, on the contrary, the whole project is taken as one but divided into smaller components. The basic structure for Islamic financial procurement for PPP project finance could be visualized as an SPV which would hold separate smaller SPVs to take care of constructions and operation phases of the project independently, existing one at a time. In Phase-I, SPV-

P may take up the role of sub-SPV created to issue Sukuk-al-Istisna for the construction of the facility. At this point, SPV-O doesn't exist. Sukuk of an amount covering the capital cost of the project and expected returns to Sukuk investors over the construction period are issued. At the completion of the project, SPV-O shall be formed to issue another line of Sukuk, Sukuk-al-Ijarah, of an amount equalizing redemption cost of Sukuk issued at Phase-I plus initial operating costs. This issue of Sukuk would be based on a lease contract against the facility developed in Phase-I. From here on the Phase-II of the project will commence. In phase-II, SPV-C shall be dissolved and no more exist after redemption of Sukuk-al-Istisna has completed.

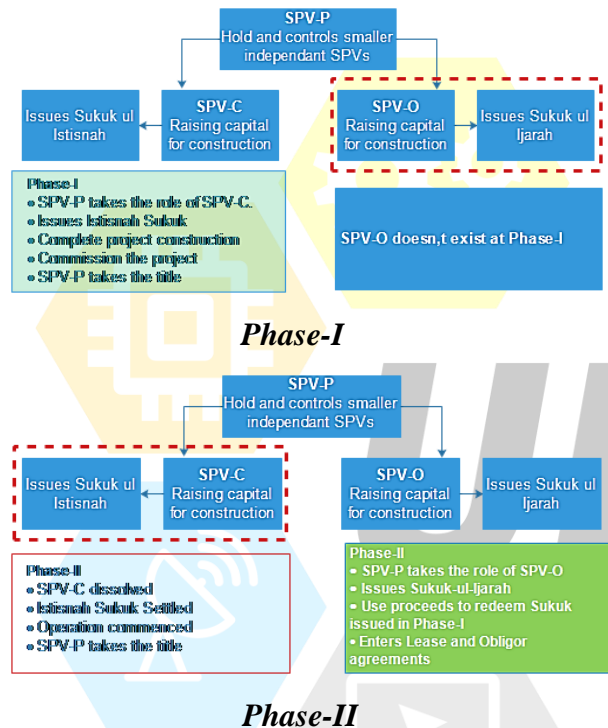


Fig.7 PPP/PFI Financial structuring under Islamic Finance

SPV-P: Special Purpose Vehicle for the overall project
 SPV-C: SPV for Construction, SPV-O: SPV for Operation

There are certain advantages of raising capital through Sukuk-al-Ijarah specifically in the operation phase of the project. Ijarah contract is designed to assure coupon repayments for the Sukuk holders. The lessee enters an obligor contract to buy the assets at the redemption cost option to buying back the asset at an earlier date if the project is profitable through buying its Sukuk from the secondary market at a nominal market price. This financing structure does not put direct repayment pressure on the development project but instead, all the dividends and profits are shared with Sukuk holders from the underlying assets through Ijarah rentals. This indirectly improves project feasibility parameters and

assures lower consumer charges of the facility after the project has been fully paid back.

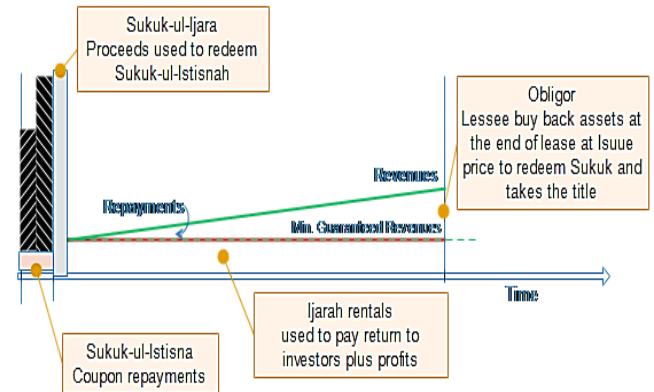


Fig.8 Life Cycle Cost LCC with Financial Layout BTO/BOT under Islamic finance

V. COMPARISON OF TWO FINANCING OPTIONS

While implementing the same PPP scheme under Islamic Finance, the whole project needed to be two distinct but interlocked subprojects as already explained i.e., (1) raising project finance via Sukuk-al-Istisna and (2) Project operation via Sukuk-al-Ijarah. The financial procurement replacing conventional finance into Islamic finance is reflected in Fig.9.

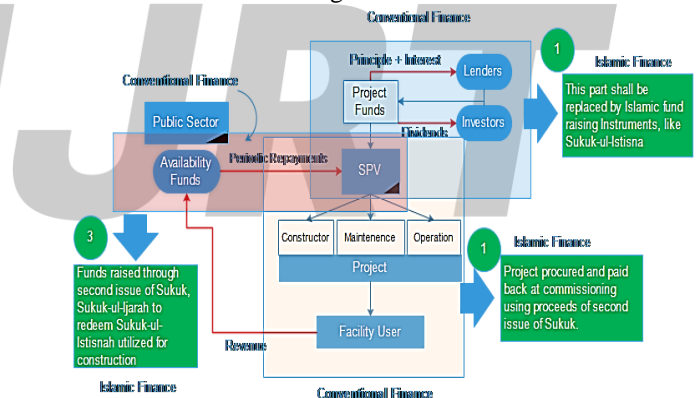


Fig.9 Breaking up conventional PPP finance structure into alternative Islamic finance

The Islamic financial structuring, simply, is based on underlying core principles and instrumental building blocks to replace undesired elements from conventional financing techniques. As the core principle requirement, all interest-bearing transactions shall be eliminated and replaced by a risk-sharing mechanism. All transactions needed to be asset-based to ensure risk/reward environment. The depicted PFI structured finance in Fig.9 would look like an interlocked distinct financing sub-structures under Islamic finance. In conventional finance, the cost of borrowing poses extreme pressures on the project operation phase. For instance, a borrowing of \$100 million for 30 years at 5% continuous compound gross interest rate (Libor plus %age cost) may result in total repayments of over \$400 million spanning a significant part of the operation phase. It

simply means that a sum of \$300 million is transferred to future generations payable through user charges in some form. Even if the project cost has been recovered, users are supposed to repay the predetermined costs directly or indirectly until the end of the concession. To meet debt servicing obligations, mid-term financing is needed which poses an extra negative pressure on the revenue stream. In Islamic financial arrangements, in Phase-I of the project, clean predetermined profits are distributed to investors which of course needs to be a market competitive. Beside these coupon payments, the project suffers no extra repayments. At the completion of the project, all the capital costs are paid back through the redemption of Sukuk-al-Istisna issued to facilitate the construction of the project. For instance, the capital cost shall be \$100 million-plus return on investment say at 5% per annum, \$15 million in the case of Sukuk issuance. The project would be debt-free at the start of its operational phase and the only obligation to meet shall be the repayments to the Sukuk-al-Ijarah investors. These repayments are made through receivables from Ijarah rentals amounts. The lessee enters an obligor agreement at the start of the lease to buy the assets at redemption cost of Sukuk-al-Ijarah at the termination of the Sukuk term. The termination of the Sukuk term usually coincides with the concession term. Cash flows throughout the project life are predetermined, smooth and a lesser element of ambiguity. The salvage value of the assets is assessed at obligor agreement even before the start of the operation phase with clauses to adjust inflation and related economic variables.

VI. CONCLUSION

The critical issue, currently being faced in developed as well as developing economies is to ensure positive revenue streams over a longer period for the successful implementation of PPPs. Restricted fiscal environment and shrinking demographic changes are making the participation of the private sector in public infrastructure more difficult. The real challenge occurs in suburban regions where the demand for the facility/services exists without an adequate market to support it. Evaluating the most appropriate financial arrangement for Public-Private Partnerships (PPP) is a prime task to address the feasibility of the concession over the longer periods of time. The current global economic environment encourages governments and public bodies to search for ways to find alternative financial resources to assure the lowest possible capital costs. Several PPP financing mechanisms exist; however, the emphasis of this study is to compare conventional interest-bearing financial arrangements with interest-free Islamic finance.

Islamic finance could be a source of least expensive capital for project finance and if appropriate plans are

drawn, it may result in financially high-performance PPPs. Because of the novice subject, it was imperative to detail out the most relevant Islamic financial instruments. For general-purpose, among efficiently designed financial instruments, Sukuk-al-Istisna and Sukuk-al-Ijarah are highly adaptive for PFI/BTO as well as long term lease and BOT concessions. Islamic financial engineering is about arranging basic building blocks to assure Shariah-compliant capital flows. Islamic finance is comprised of several financial instruments, which operate with no interest but an effective risk/reward mechanism to assure the sustainability of the project. These instruments form building blocks for Islamic financial engineering. The most important aspect of Islamic finance is the flexibility and adaptability of these instruments. In the current era, where capital is getting scarce and demand is shrinking, Islamic finance can offer a variety of solutions that would not only be sustainable but financially efficient. This study doesn't comprehend all available instruments but emphasized the most commonly applied mechanisms. A parallel simulation study is in progress which might further be able to enhance and confirms the remarks made in this paper.

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