

Financing infrastructure projects based on risk sharing model: Istisna sukuk

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ABSTRACT

One of the basic needs of developing countries is the economic infrastructure that is the basis of growth and development in other sectors of the economy. The lack of proper response to financing needs in this sector will result in economic development that faces major challenges and difficulties. Designing an optimal solution to financing these types of projects is thus, a fundamental need. These projects have two main characteristics that should be considered in the financing method. The first is long-term period to constructing and the second is the high cost of implementation. The use of Islamic financial innovations based on Islamic contracts can meet many of these needs. States in developing countries have so far preferred to raise fund based on debt, ignoring the fact that this kind of financing and choice of method will cause many problems for the economy. Financial crises and economic stability, creating a leverage in the economy, budget deficit, inflation and the distribution of risk among economic agents are the issues that affect the structures and models of financing. Istisna Sukuk has the potential to be used for infrastructure project financing and can be combined with other contracts, including Ijarah and Musharakah, for these types of projects. In this paper, various models are presented and examined to show that by adapting the financial flows of state-owned projects with real economy, especially in the field of infrastructure, the macroeconomic imbalances can be avoided. This is most relevant in the "Istisna-Musharakah-Stock" model.

1. Introduction

There are some reports from international institutions which indicate developing countries have issue to financing their infrastructure projects. These types of project have two key elements: long-term and high cost. Generally, there are two methods to financing projects. 1. Debt financing. 2. Equity financing. The states of these countries usually provide funds based on debt financing. Unfortunately, the states make a lot of problems in their economy by choosing this approach.

Nowadays, the main problem has involved the global economy is increase in unrestrained debt and the more important factor is risk of repayment by the states. The risk of payment by the state not only has bad effect on recession, but also it can create a systemic risk and by contagion exposes the other sectors of economy. According to the unfavourable terms prevailing in economic growth, the ability to repayment

debt is suspected. Regarding to this point 75% of financial products are debt based. Usually the states face budget deficit and they cannot settle their commitments. In this situation they choose borrowing by the debt instruments or print the money. For the first option, the consequences are explained earlier. The second one creates some problems in the economy as well as the first one. It means that by printing new money, it increases inflation in the economy and the consequence is the loss of fixed income instrument owners. This is only one of the effects of the high inflation in the economy and other effects are ignored here.

Therefore, the idea is that financing based on equity is better for all stakeholders in society; because the economy does not have imbalance as a whole and the investment follows the real economy without any crisis in the financial system. Hence, this paper focuses on a method that it does not have the problems of debt financing and it is useful for the states, especially for Islamic developing countries. As a case, there are a lot of infrastructure projects in Islamic Republic of Iran and the state has some issues to financing these projects. As the financial system of Iran is integrated Islamic system since 1979 (Islamic Revolution) the state has issued Musharakah Sukuk to complete or construct the infrastructure projects, however, these instruments are based on profit loss sharing but in operation they are similar to conventional bonds.

2. Literature Review

Many researchers have examined the ways in which a government can enhance the provision of infrastructure in various sectors through private sector participation (Akindele&Iwisi, 2006; O'Neill, 2010). In recent years, many researchers exploring new instrument from Islamic finance (Rosly, 2010; Al-Salem, 2009, Maurer, 2010), but most of them are related to the banking sector. However, some of researches focus on analysing the Islamic project financing in infrastructure (Wilson, 1998; Camacho 2005; Alexander 2011; Hassan et al, 2006; McMillen, 2007) and discuss the participation of the government and private sector. In accordance with shariah for financing major projects, most of them are descriptive in nature and remain limited. However, some researchers (Alexander, 2011; Amin, 2008; Gavin, 2010) developed Islamic project financing for housing and energy project. Financing based on sukuk applied to a broad variety of projects (Zarqa, 1997; Kordvani, 2009; Maurer, 2010) that discuss the innovation in Islamic sukuk and its capability for financing infrastructure and some aspects of this sukuk.

2.1. Istisna contract

An istisna agreement is a deferred delivery contract, where one party provides investment capital and the other agrees to deliver a specific asset to a purchaser, in turn, makes a separate arrangement with the investor to pay for the asset plus a pre-agreed profit. Istisna contracts offer some flexibility- financing may be delivered up front or in installment, and the delivery date does not have to be fixed. In addition, these contracts may be revoked up until the time that the party receive the financing has begun to manufacture the goods or to begin construction. In the other words, Istisna refers to a contract to sell to a purchaser a non-existent asset that is to be constructed, built or manufactured according to the agreed specifications and delivered on a specified future date at a predetermined price of the istisna' asset. (Bank Negara Malaysia, 2014).

Istisna contracts are useful when an individual wants to borrow money to build a home. The home cannot be considered a tangible asset until it is built. With no basis in an asset, the transaction would be considered a riba-based loan. Istisna contracts allow a homebuyer to finance the project and eventually take ownership of the newly constructed house (Morris & Salam, 2009).

2.2. Definition of Sukuk

An Islamic financial certificate is similar to a bond in Western finance, that complies with Shariah, Islamic religious law. However, the traditional Western interest paying bond structure is not permissible. Sukuk involves the selling of Islamic bonds by the bank to an investor group that then rents the bonds back to the bank for a predetermined rental fee. The bank also makes a contractual promise to buy back the bond at a future date at par value (Mirakhor and Zaidi, 2007; Hakim, 2007; Saadallah, 2007; Mcmillen, 2007; Sidani, 2007; Salim, 2015).

Sukuk offers a number of solutions in Islamic project finance. One structure of particular interest in project finance is sukuk istisna' a (SAI) or commission to start the project. This structure allows project sponsors to leverage their project in an Islamic fashion and is useful where pre-delivery financing is required (Merna, Chu and Al-Thani, 2010).

2.3. Sukuk al-Istisna

Sukuk al-istisna is the certificate of equal value that is issued for the purpose of mobilising funds to be used in the production of the goods owned by the certificate holder. The funds raised from subscription are the cost of products and intended products became owned by the certificate issuers, producers (seller/supplier) and subscribers. The certificate holders own the product and they become entitled to the sale of a parallel istisna. Sukuk al-istisna is very convenient for financing huge infrastructure projects (Dincer and Hacıoglu, 2014).

Istisna' sukuk are only redeemable at maturity but they can be transferred at face value before that date. As always with Islamic financial products the purchasers of the sukuk run the risk of certificates losing value if market price for the produced items falls. This is unlikely in the case of long-term infrastructure products (Spoors, 2014).

The structure of sukuk al-istisna has not been that widely used. Although, at first glance, the structure appears ideal for the financing of greenfield development, certain structural drawbacks have proven difficult to overcome and, as a result, sukuk al-istisna has not featured as an alternative source of Islamic funding on multi-sourced project financing in the manner once predicted. In addition to this, the different approaches taken by Shariah scholars to advance rentals and istisna termination payments have also led structures to consider other more 'flexible' structures (such as sukuk al-musharaka)*.

There are varieties of methods that can be adopted in structuring sukuk (Islamic financial certificates) using istisna' contract. This article will give a brief explanation on how istisna' contract is employed in sukuk structure by illustrating two samples of istisna' sukuk models.

In the modern day context of Islamic finance, the istisna' has developed into a particularly useful tool in the Islamic funding of the construction phase of a project – it is often regarded as being similar to a fixed-price 'turnkey' contract. In order to enable investors to receive a return during the period where assets are being constructed under an istisna arrangement, some Shariah scholars have permitted the use

* <http://www.islamicbanker.com/education/sukuk-al-istisna>

of a forward lease arrangement (known as *ijaramawsufah f al-dimmah*) alongside such *istisna'* arrangement.

In other words, the sukuk evidence financial obligation of the sukuk issuer to make payment to the investors at an agreed future date. It is also common that *istisna'* sukuk are issued by issuers to represent the undivided right and ownership of the investors over the underlying asset in the *istisna'* transaction.

3. Operational Model of Istisna' Sukuk

3.1. Istisna' sukuk to represent istisna' selling prices

As mentioned above, the issuance of *istisna'* sukuk indicates the right of investors, that is sukuk holders, over the selling price due to deferment of price settlement. This can always be seen in a parallel *istisna'*, which involves two contracting parties in both transactions. In the first *istisna'* contract, the originator (issuer) agrees to construct *istisna'* asset and deliver it to the investors on a future date. In return, the price settlement by the investors is payable by lump sum or in phases, according to the stages of completion of the asset. Subsequently, both parties sign separate *istisna'* agreement, in which the investors agree to construct the asset and deliver it to the originator. In the second *istisna'* contract, the *istisna'* sale price, which comprises purchasing price plus profit, will be paid by the originator on a future date. The deferment of price settlement renders the originator indebted to the investors. Pursuant to this, the originator-cum-issuer will issue sukuk as evidence of the originator's responsibility to fulfill its financial obligation to the investors. The issuance is also to represent the investors' ownership over the receivables owed by the originators. The basic structure is illustrated in the following table (Badri and Mikail, 2014).

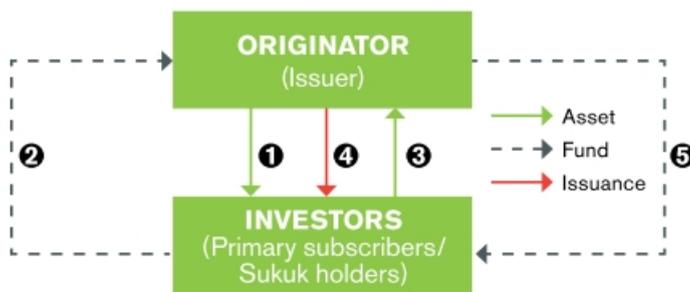


Fig 1. Istisna' sukuk transaction structure (Model 1)

1. Under *istisna'* purchase agreement, the originator (issuer) agrees to construct an identified *istisna'* asset and deliver it to the investors in consideration of an agreed *istisna'* purchase price.
2. The *istisna'* purchase will be paid by the investor in one lump sum or by stages at a specified time. The proceeds will be used to finance the project.
3. Subsequently, the investors enter into second *istisna'* transaction (*istisna'* sale agreement) and agree to construct the identified *istisna'* asset for the originator. The selling price which is made up of the original asset purchase price and the profit margin is payable according to an agreed payment schedule.
4. The originator (issuer) will issue sukuk to the investors as evidence for issuer's financial obligation on the settlement of the price.
5. The payment will be settled in periodical basis, for example, semi-annual. The sukuk shall be redeemable upon maturity (Badri and Mikail, 2014).

3.2. Istisna' sukuk to represent istisna' asset

Some sukuk issuances represent a proportionate right and ownership interest towards the istisna' asset instead of evidencing deferred selling price. In that method, it is common that Special Vehicle Purpose (SPV) is initially established to act as a trustee to the investors (sukuk holders). Firstly, the SPV raises fund by inviting interested investors to finance a specific project. Upon receiving the proceeds from the investors, the SPV will issue sukuk to the investors. The flow of istisna' transaction begins with the SPV executing an istisna' contract with a contractor requesting it to manufacture the identified istisna' asset. Therefore, at this stage the sukuk holders possess a proportionate right and ownership interest over the istisna' asset. Hence, in this sukuk transaction, the certificates issued by SPV to the investors serves as right of ownership over the underlying asset of the istisna' transaction. Once the project is completed, the asset is sold to a third party, and the payment (principal plus profit) will be distributed to investors.

It is also a common practice that ijarah (leasing) arrangement is combined with istisna' arrangement. During the construction period, the third party will rent the istisna' asset under the principle of ijarahmawsufah fi dhimmah (forward lease). This combination enables the investors to enjoy periodical return in the form of rental fee during the construction of the asset. The flow of transactions is depicted in the diagram below (Table 2).

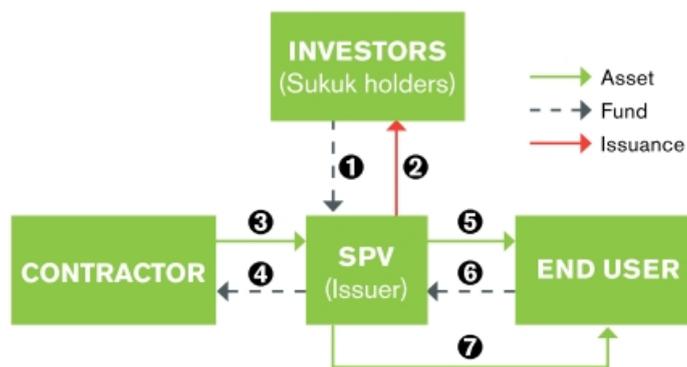


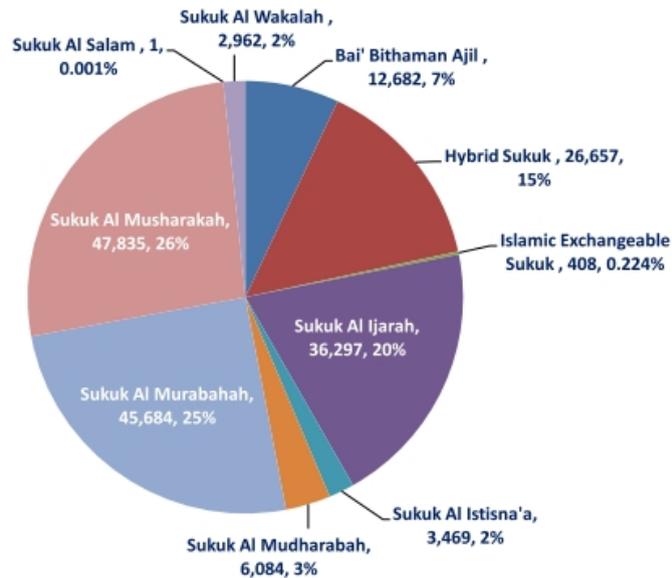
Fig 2. Istisna'a sukuk transaction structure (Model 2)

1. The issuance proceeds received by SPV (as trustee of sukuk investors) are used to finance construction projects.
2. Sukuk are issued to investors by SPV.
3. SPV executes an istisna' contract with a contractor to build an identified asset which is to be delivered on a specified future date.
4. The istisna' purchase price is settled on staged basis and at specified times.
5. During the construction, the SPV leases the istisna' asset under the principle of ijarahmawsufah fi dhimmah (forward lease).
6. The end user will pay the rental to SPV at an agreed formula. Proceeds received from the end user is distributed to investors periodically e.g. semi-annual basis until maturity.

- Upon completion of the project, the asset is sold and delivered to the end user (Badri and Mikail, 2014).

3.3. International istisna' sukuk issuance

Figure 3 shows statistics about Istisna' Sukuk issuance over fifteen years, 2001 to 2015. It is obvious that proportion of istisna' sukuk has been less than 4%. Also Figure 4 shows global sukuk issuance by underlying contract. Comparing both sides of Figure 4, evolution in contract is evident. Istisna based sukuk have fallen in proportion.



Source: IIFM Sukuk Database

Fig 3. Structural Break-Up of Domestic Corporate Sukuk Issuances (Jan 2001- March 2015, USD Millions) type

4. Infrastructure projects

The main factors of infrastructure projects especially in Iran are:

- They are almost monopolized by the states and they need huge funds to complete.
- After construction (setting up) period the projects make money for several years.
- High operation leverage; it means that the fixed cost is the greatest part of total cost here.

According to finance principle, it is not acceptable that such projects are financed by debt instruments or financial leverage. The best manner is financing through equity or quasi equity instruments. In absence of these types of instruments states shift to debt based instruments.

Obviously in a financial system that is based on obligation on a certain profit payment from the first day and through the construction phase that does not have any flow, produced by the project, the originator has to pay a portion of profit in mentioned period and in another side the total payment of the profit to investors usually are lower than their expectation.

Regarding to the points the following part describes a new model for financing infrastructure projects by the public sector. We define some different scenarios with a comparative approach to find advantages and disadvantages of them.

5. The Model

The key element of our model for different scenarios is based on issuing Istisna' Sukuk. As mentioned earlier by fixed income instruments, the states have to pay a huge amount of money just from the first phase of the project (during the construction), while the project has not have any payoff. Istisna' Sukuk without any payment (coupon) is the best method of financing to away from these unreasonable commitment.

- The constructor which is also the originator establishes SPV, as the agent of the investors.
- The istisna' contract is between the SPV and the originator.
- The SPV by issuing the IstisnaSukuk raises funds and step by step; according to progress of the project the funds are payable to constructor.
- During the construction, the SPV as the agent of the investors, is the owner of the project and the originator is the constructor (Diagram1).

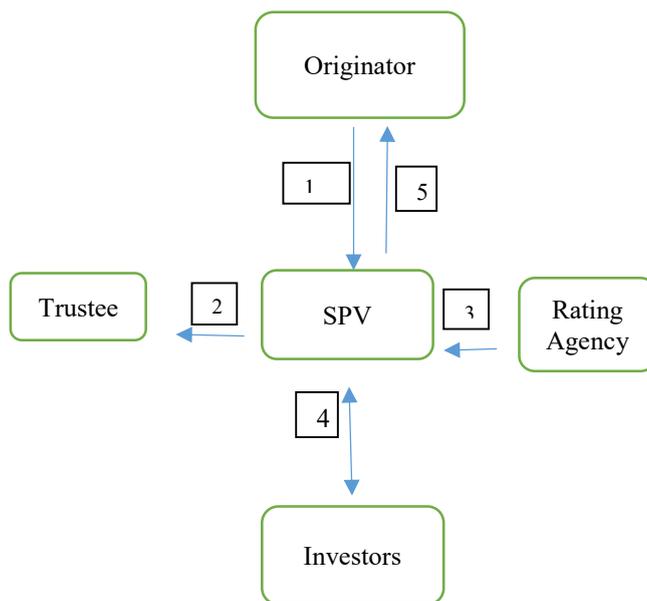


Fig 4. Issuing IstisnaSukuk

- In this stage the originator establishes the SPV.
- The SPV chooses a trustee, (a central securities depository can have this role).
- The Rating Agency rates the Sukuk.
- The SPV by issuing the Istisna' Sukuk raises funds.
- Step by step, according to progress of the project the funds are payable to the constructor. The SPV invests the residual in a secure way.

5.1. Different Scenarios

After construction under a new contract the originator and SPV agree to choose different scenarios:

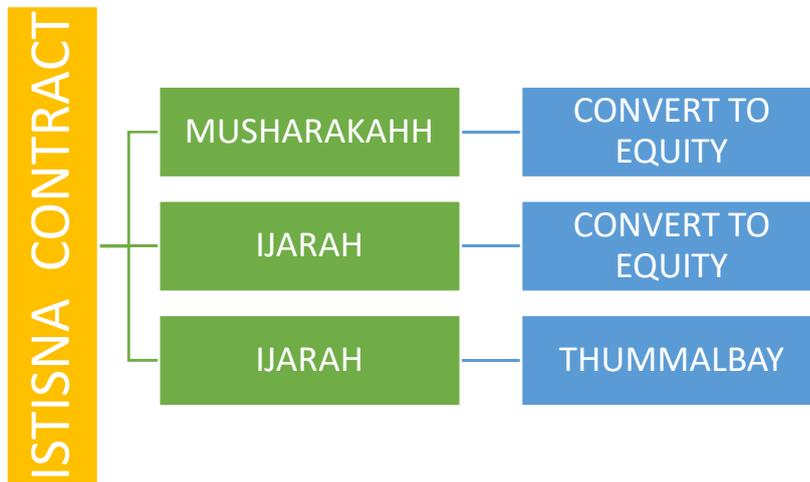


Fig 5. Different scenarios

As shown in Diagram 2, it can define three types of method to continue the process of financing. Exploitation phase is the second stage and IPO is the third one.

5.2. Musharakah-IPO

It means that after construction, under a new contract the originator and SPV agree to musharakah not based on initial investment but, the share of investor is more than the originator in profit, and also the loss is based on the initial investment in order to attract and encourage the investor.

Advantages of Musharakah-IPO:

1. As described in introduction, one of the problems of debt financing is lack of connection between the real sector and financial sector. In this way we have peer to peer connection by real sector and it is based on risk sharing fundamentals.
2. Flexibility of this process is another advantage by the originator perspective. It means that there is no fixed commitment through the project against the issuing conventional bonds. By the issuing of conventional bonds, the originator should pay a determined amount of money regardless of the situation of the project in reality.
3. As the project is based on Musharakah, the capital and profit guarantee are excluded. This subject causes the supervision mechanism by the third party and it declines the agency problem. Hence, there are no conflict of interest and asymmetric information; in other words, the supervision will be the pillar of the process.

Disadvantages of Musharakah-IPO:

1. Usually the investors are risk averse and maybe in comparison with other options they prefer to invest in lower risk options.
2. The monitoring in this method is costly if we do not have prerequisites of monitoring and supervision.

The process for this stage is shown in Diagram 3.

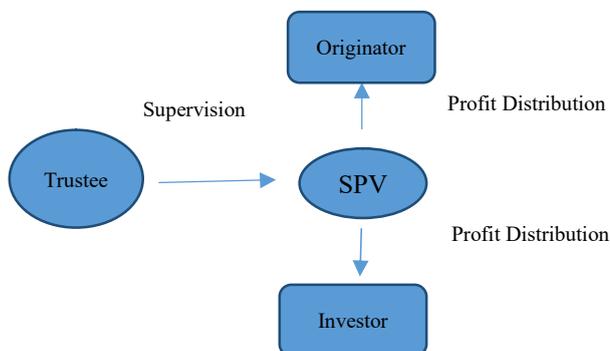


Fig 6. Musharaka model

Based on the primary agreement in accordance with project timing, the profit is payable. As said, for making sensitivity for the investors the profit is higher than the initial investment versus the originator, but the loss is based on the initial investment for two parties.

5.3. The third stage of the investment

Usually these types of projects have the maturity stage (for example after 5 years). In this level, the Musharakah Sukuk can convert to the stock. We define an embedded option for the third part of investment that the investor can convert its Sukuk to stock.

Advantages of IPO:

1. The size of government is a problem in economy, converting Musharakah to stock helps the efficiency of the government and finally the owners of the project are the private sector, so the government size is reduced. By this way, people who are the main stakeholder will be the stock holder.
2. We restrict the commitment payment of Sukuk all at once.

5.4. Ijarah- IPO

After construction under a new contract the originator and SPV agree to lease during this period. In this situation they have also put an embedded option for the investor to convert its Sukuk to stock.

Advantages:

1. Ijarah Sukuk is fixed income and in comparison with Musharakah is attractive for the risk averse investors.

Disadvantages:

1. The flexibility of Ijarah is lower than the Musharakah.
2. The Ijarah makes commitment for the originator and it will be concerned about paying the coupon.

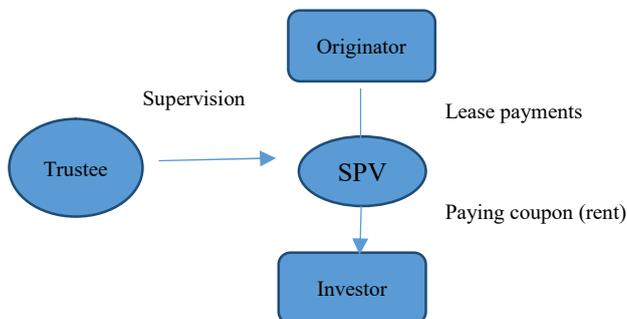


Fig 7. Ijarah model

By this approach after the exploitation phase, like the previous model the investor has the right of converting his Istisna- Ijarah Sukuk to stock.

5.5. Ijarah thumma al-bay

After construction under a new contract the originator and SPV agree to lease during this period. In this model the originator has to pay the rent of the project (asset) to the investors for 5 years (for example). By the last payment of the rent plus a premium, the originator acquire the asset and will be the owner of the asset. (Ijarah thumma al-bay).

Advantages:

1. The contractor is the last owner of the asset.
2. The investor receives the fixed income and the risk is lower.
3. The pricing of the securities is not complex.

Disadvantages:

1. The advantages that mentioned for risk sharing is fading out.
2. The nature of financing is similar to debt financing.

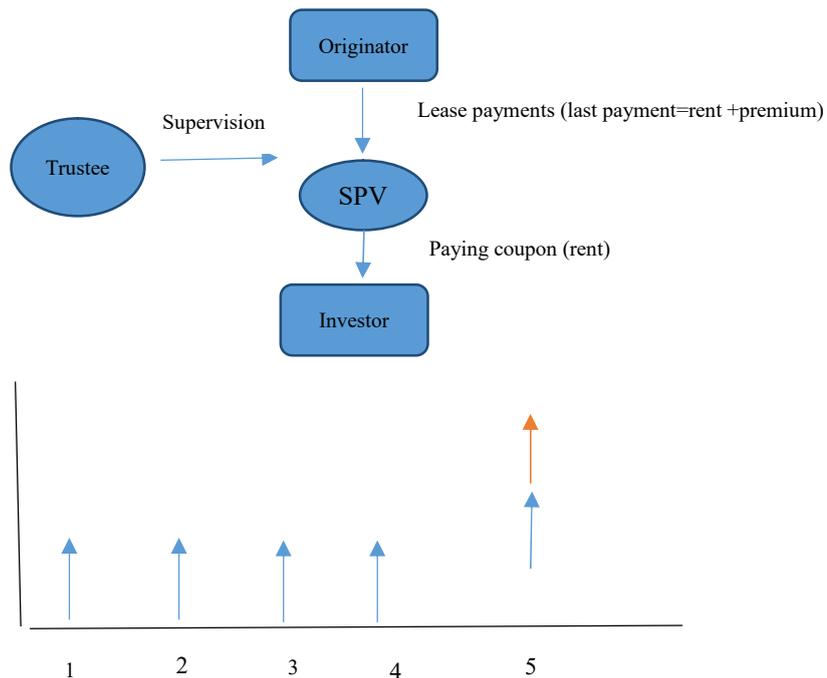


Fig 8. Ijarahthumma al-bay Model

The case:

Supposedly that the originator (Ministry of Petroleum) needs 400 billion Dollars to establishing and setting up a specific refinery, and the originator brings 150 billion Dollars. The project is expected to construct within 4 years. The originator negotiates with investors before issuance of securities. After the agreement, investors are committing to a syndicate of 8 investors. The investors according to work progression of 8 times provide the funds to the project (50 billion at each time); assuming that each Sukuk certificate value is 100,000Dollars. After construction period the exploitation of the project for 6 years is started. In this period the originator and investors unlike the initial investment (27%, 73%) agree to 10% and 90% proportion of profit. This amount of proportion is just for encouraging the investors, based on the agreement.

The 6 years exploitation period has been a period of Musharaktah. At the end of the 10th year, the project is prepared for initial public offering in stock market and the convertible Istisna-Musharakah Sukuk would be converted to stock. One of the advantages of this approach is awarding more stock to the sukuk holders. Finally, the third advantage is increasing the capital value at IPO stage. Indeed the pricing of this project in this time is completely different from the value of the initial price in the beginning.

Therefore, the investors and the originator at the end of 10th year not only depreciate the value of their capital, but also in addition to profit in exploitation period, they can gain from the value appreciation in IPO stage.

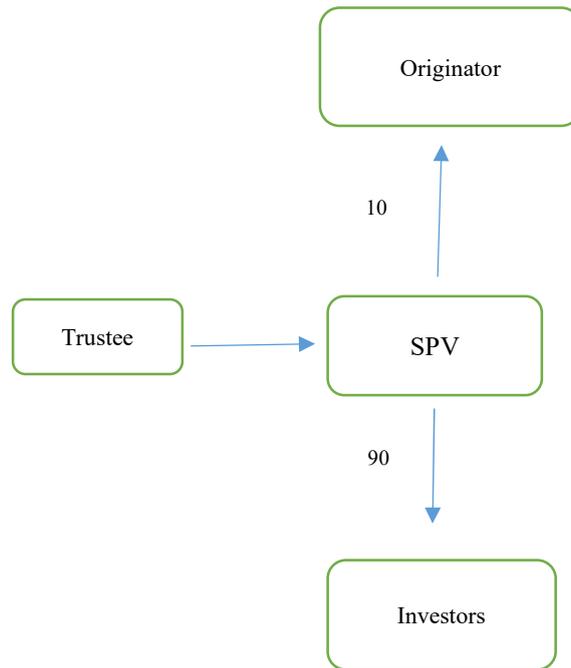


Fig 9. The case

6. Conclusion

States in developing countries have so far preferred to raise fund based on debt, ignoring the fact that this kind of financing and choice of this method will cause many problems for the stability of the economy. Considering the issues of financial crises and economic stability, creating a leverage in the economy, budget deficit, inflation and the distribution of risk among economic agents are the issues that affect the structures and models of financing.

Istisna' Sukuk is an Islamic instrument which has the potential to be used to infrastructure project financing. Istisna' Sukuk is based on the asset and the return of the project it is completely compatible with the infrastructure project specially in developing countries. Therefore, by presenting these considerations, the various models presented will be examined and we will show that by adapting the financial flows of state-owned projects with real economy, especially in the field of infrastructure, the macroeconomic imbalances can be avoided. This is most relevant in the "Istisna-Musharakah-Stock" model. The presented model is a sustainable option, could be chosen.

Generally speaking, the main problem of debt financing is disconnecting between repayments of loan on one side and the risk of the project and cash flow of the asset on another side. It looks like the states and the authority of the financial markets should choose different approach. To conclude the best way for financing infrastructure is using risk sharing financial instruments. By this approach these securities not only are the beneficiate instruments for the real economy, but it can also stop the current procedures of creating and accumulation of debt. In addition, they operate countercyclical instead of procyclical operation by the bonds and debt instruments.

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