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Design a Structured Financing Instrument in Iran's Downstream Sector of the Oil and Gas Industry

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ABSTRACT

One of the most critical bottlenecks in the country's oil industry is the lack of sufficient liquidity and a suitable and codified method for financing projects in the downstream sector of Iran's oil and gas industry. These projects include the construction of oil and gas refineries and petrochemical plants. Oil and gas projects require a very high volume of investment, and the limited financial resources and insufficient attractiveness of the currently defined instruments do not meet the new investment needs of downstream projects to achieve the 1404 vision. Therefore, in this article, due to the novelty of the issue, numerous interviews were conducted with staff and operational managers and other relevant officials in the field of financing the downstream part of the oil and gas industry. Then, with the help of Maxqda software, all independent ideas in the form of concepts and sub-themes were identified. With the help of the Delphi method based on the process of Islamic financial engineering based on responding to existing needs by identifying the needs of the parties to the transaction, asset base, and related cash flow analysis, appropriate structured instrument in this sector were designed in six instruments. From experts and related tests, as well as analysis and comparison of their various risks by AHP using Expert Choice software, finally based on the tests performed on the results obtained from questionnaires and interviews of experts, structured financing instrument in the form of convertible securities parallel Istisna Sukuk–Lease (Ijarah) and Sukuk–stock was approved.

1. Introduction

Undoubtedly, given that oil and gas projects require a very high volume of investment, and given the country's limited financial resources and insufficient attractiveness of the currently defined instruments to meet the existing and new investment needs of downstream projects, the need to design an instrument that takes into account the characteristics of the downstream sector of Iran's oil and gas industry, as well as other financial, economic, legal, risk, and sharia considerations, is fully felt.

Therefore, due to domestic and international restrictions and special conditions prevailing in Iran's economy, as well as double pressure on the economy by Western countries due to harsh sanctions, especially sanctions on oil purchases from Iran to create currency restrictions in the country and according to Article 10 of the Sixth development Program Law, one of the financing strategies in the field of oil and gas industry is the use of Islamic financing instruments (Sukuk). Therefore, to meet this need in this study, we decided to design a structured instrument for financing in this sector, in line with the macro goals of the country's economic system to meet domestic needs, relying on the potential within the country. Therefore, by examining the existing financing instruments and extracting their advantages and disadvantages, we moved to eliminate the shortcomings and strengthen the strengths. An overview of other conventional financing instruments reveals weaknesses briefly outlined below.

1. Lack of attractiveness for investors:

- Interest rate risk: the interest rate is fixed in the existing methods;
- Inflation rate risk: lack of attention to inflation rate risk in most available methods;
- High probability of default of the originator: due to the financial inability of the originator, there is a possibility of high default of the originator;
- Probability of project delay: in none of the existing methods, the possibility of project delay and the necessary measures to eliminate it have not been considered.

1. Lack of attractiveness for the originator:

- Financial burden after the construction of the project to settle the bonds;
- Possibility of prolonging construction and commissioning time (according to internal experiences);

2. Lack of attractiveness for the Intermediary Institution (or Special Purpose Vehicle[1]):

- Lack of liquidity and payment of guarantee (if it belongs to the Ministry of Petroleum);
- Default risk of the originator at maturity;

Finally, considering the importance of financing in the downstream sector of oil and gas industries and also considering the issues mentioned above, it has examined the types of Islamic financing instruments (Sukuk) according to the special conditions in the downstream sector of this industry and six instruments in two categories was designed. In one category, one of the state-owned companies affiliated to the Ministry of Petroleum was assumed, and in it was placed three special instruments following all relevant conditions (which in this article will be interpreted as instruments of group A). In the other category, three other instruments were designed with the relevant conditions and assuming that the founder is a nongovernmental company (which in this article will be interpreted as tools of group B). Finally, after collecting experts' opinions in the questionnaires form and analyzing them, we will introduce an instrument as a suitable instrument in this sector.

Due to the particular circumstances created in the Post-JCPOA[2] period and belonging to exit the United States from the Comprehensive Joint Action Plan, the Islamic Republic of Iran has entered the created phase of its economy. Further, before reducing oil production, some of the oppressive US sanctions in 2018 focused on Iran's oil strategy. The focus was on joint fields to increase crude oil production and exports; the former capacity is the best way to shift the created capacity to the downstream oil and gas industries and create more added value by relying on domestic financial resources. At the same time, with the approval of the Supreme Leader in recent years, more than before, domestic power has been used in all sectors, especially in the field of resistance economics. The issues mentioned above related to financing have been paid more attention than before. One of the most critical sectors is oil and gas, petrochemical, and energy, which has always been important as a forerunner of Iran's economy.

[1] SPV

[2] Joint Comprehensive Plan of Action

Moreover, the lack of necessary research and studies on structured financing in all fields, especially in the field of energy, is the motivation of the present research to enrich the literature.

The unique characteristics of the energy sector, especially the oil and gas sector, due to fluctuations in the global prices of these energy carriers and exchange rate fluctuations can add to the attractiveness of choosing or designing financial instruments.

In practice, considering the disadvantages and shortcomings of conventional financing methods in infrastructure projects in general and downstream projects in the oil and gas industry, designing a new tool that can have and strengthen their strengths and eliminate their weaknesses is necessary. The study of the possibility of implementing and considering possible new methods in the final operational model of the designed instruments is one of the innovations of this research, which is briefly mentioned in Section 8.5.

2. Literature review

Fabozzi defines structured financing as techniques and requirements by the owner or builder of an asset that must be considered in terms of financing, liquidity, and risk transfer. Existing instruments and products may not meet these requirements. Therefore, to meet this need, existing products and techniques must be designed in the form of a custom product or process. Thus, structured financing is a flexible financial engineering instrument (Fabozzi, 2006).

Abdo Tabrizi defines structured financing as an advanced sector of the financing industry that meets investors' financial needs by designing relatively sophisticated financing methods and using special financial instruments and securities in the form of market formation. The methods do not have a clear definition and limits, and this method depends on the conditions of the parties and the requirements of the project, the type of needs, and the type of agreements and is recommended for companies that have unique financial needs not met by traditional financing methods such as loans. Some of the features of structured financing are as follows (Abdo Tabrizi, 2012):

- A set of assets is collected in the form of a portfolio.
- Liabilities backed by assets are defined in different classified investment classes.
- By forming a special purpose legal entity with limited purposes, the credit risk of the asset is separated from the credit risk of the original obligor and is concentrated within the scope of the defined financial activity.

There are four fundamental pillars for structured financing in the financial literature, shown in Figure 1.

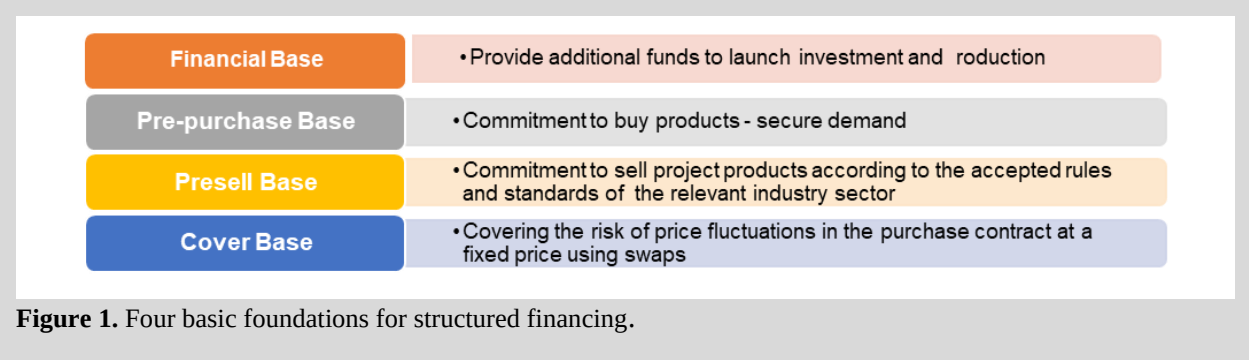

Figure 1. Four basic foundations for structured financing.

Andreas also stated that structured financing includes all the advanced private and public financial tricks that can effectively finance and cover any profitable economic activity beyond the balance sheet (debt, bonds, and stocks) to achieve lower capital costs. Furthermore, reducing agency costs hinders access to adequate liquidity. The superior form of structured financing is capital-based risk transfer (except for the sale of loans, asset swaps, and natural hedging through bond trading). The two main categories of assets, including asset securitization (mainly used for financing purposes) and credit derivative trading (as a support tool), allow issuers to access an unlimited number of methods of combining different asset classes. This transfers asset risk between banks, insurance companies, and non-financial investors to achieve greater diversification to reduce risk. In his paper, he describes the risk transfer tools in structured financing, as shown in Figure 2 (Andreas, 2005).

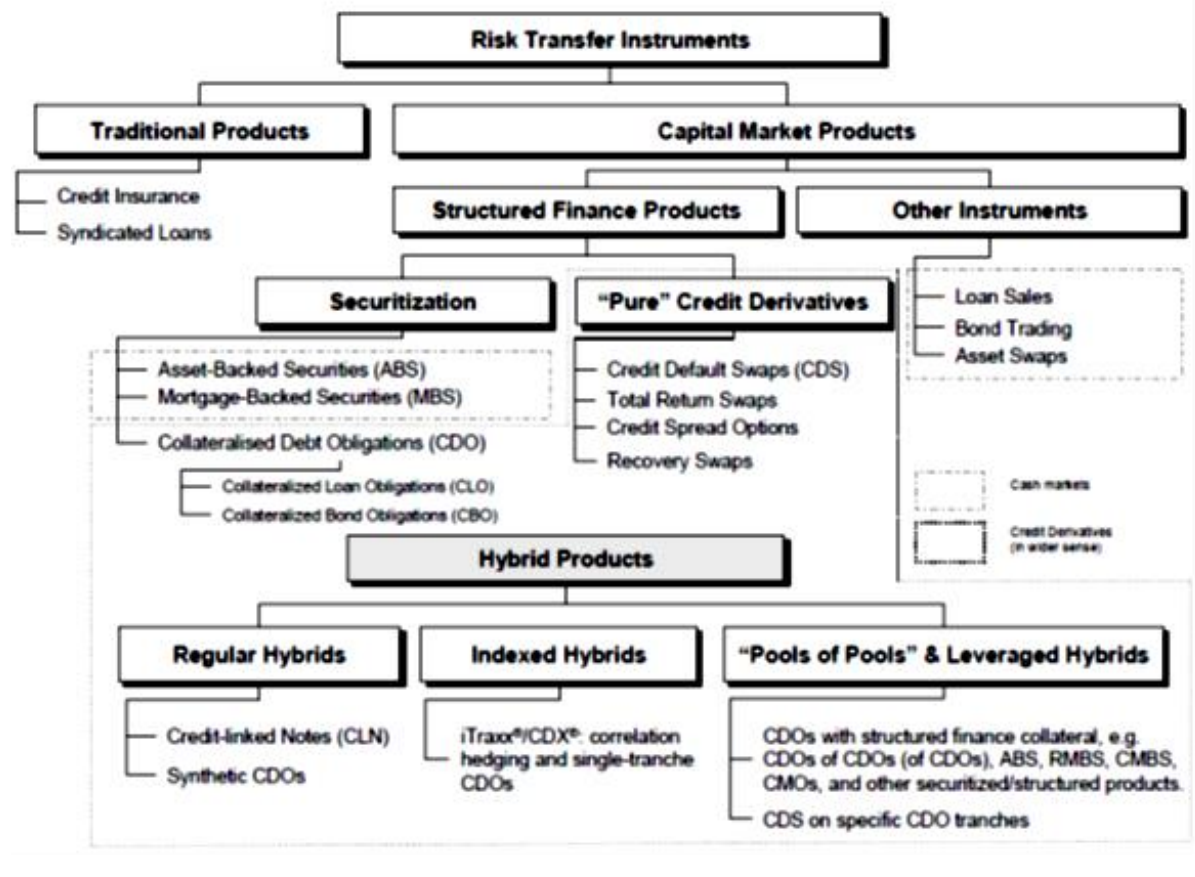

Figure 2. Overview of risk transfer instruments.

Salehabadi stated that project financing could be divided according to financing, being a project, loan or partnership, public–private partnership, corporate financing, letter of credit, buyer credit, international loans, and buyback agreements. Securitization is the process by which the assets of an institution's owner or organizer are removed from the balance sheet of that institution and made available to the SPV. International investors buy the bonds to finance the project. A financing company aggregates a set of financial assets and issues bonds to international investors to finance that set (Salehabadi, 2015).

Jingyi reported that convertible bonds are a type of bond-based financial instrument. Investors can convert the convertible bonds into the issuer's stock at a pre-agreed conversion price. Convertible bonds provide a flexible financing method for companies, making the corporate capital structure flexible (Jingyi ,2021).

Ab Aziz, M. R., Khalid defined the basic framework for the Islamic financial system as a set of rules and regulations, collectively known as the Shari'a, and governing the economic, social, political, and cultural aspects of Islamic societies. Shari'a derives from the rules of the Qur'an and its methods and the explanations given by the prophet (more commonly known as the Sunnah) (Ab Aziz, M. R., Khalid, 2021).

Botshekan, as defined by S&P, defined project financing as a combination of structured asset-based financing and corporate financing. Long-term financing of infrastructure and industrial projects is based on the cash flows of the project and not the cash flows of the project balance sheet. Structured project financing can be considered as a combination of two programs in the form of issuing securities and structured derivatives for project financing, which usually includes the following three types (Botshekan, 2015):

- Securitization of future cash flow;
- Prepayment, settlement, and payment plans commensurate with production (manufacturing);
- Collateralized debt obligation;

Saeedi stated in a report published by the SEO Research and Development Center for Islamic Studies on how to design new financial instruments that six steps must be taken to design new financial instruments (Saeedi, 2010):

1. Economic studies;
2. Jurisprudential and legal studies;
3. Financial conceptualization;
4. Instrument risk management considerations;
5. Financial reporting standards;
6. Tax considerations.

Sami Al Suwailem stated that one of the strategies of Islamic financial engineering is the strategy of responding to the current needs based on the present research, which starts from the real needs of customers and then goes back and seeks appropriate tools to meet those needs (Sami Al Suwailem, 2007).

There is no direct research on the design of structured financing instruments in the downstream field of Iran's oil and gas industry, but we will review the research in this regard.

Nazarpour studied the favorable financing model of Iran's oil industry based on Istisna's Sukuk and concluded that this tool is very desirable considering the positive economic results and control of related risks (Nazarpour et al., 2014). Nazarpour and Khazaei studied the risk of Istisna Sukuk and concluded that the coverage of these risks could be covered by the use of convenience methods (Nazarpour and Khazaei,2010). By examining the methods of structured financing, Botshekan concluded that one of the most important new methods offered by financial institutions is structured financing, which has been created and developed to meet the unique financial needs of companies. This method is relatively complex with financing using special financial instruments and is used to meet the financial needs of projects. When financial needs are not met by the financial instruments available in the market, the market moves toward using the unique tools of the project. Therefore, it can be stated that the target market of this method of financing is large companies and special projects. In other words, structured financing is the art of an innovative combination of financial instruments and institutions tailored to the requirements of projects (Botshekan, 2015). By stating the mechanism of Sukuk operation to support the development of non-oil exports of the country, Nadri and Kargar Motlagh concluded that, among the Sukuks in Islamic banking, Ijarah, Istisna, Mudarabah and Mosharekat, and Murabaha have more vectors to achieve the goals (Nadri and Kargar Motlagh, 2010). Haddadi introduced Islamic financing tools for daily financing in the upstream oil sector by explaining Islamic financing and project-based financing. According to the results obtained, Ijarah, Istisna, and Salaf Sukuk can be used by the National Iranian Oil Company (Haddadi, 2011). Nazarpour, after examining the jurisprudential validity of the Istisna agreement, concluded that these bonds could significantly reduce the lack of bonds in financing projects in the Islamic financial system (Nazarpour, 2013). Arsalan Tariq and Dar, examining the types of Sukuk risks, including rental Sukuk, concluded that the risks of these securities, including liquidity, market, and credit risk, can be covered (Arsalan Tariq and Dar, 2007).

Mashhadi and Ghani stated that the principles governing the financial system could be expressed in the form of ten principles that are interpreted as 10 Islamic financial orders (Mashhadi and Ghani, 2020).

Table 1. Ten principles governing the financial system

Fairness in financial affairs	**Financial transparency**	**Prohibition of gain property in vain**
Prohibition of *qarar*[3] in transactions	Reliance on territorial financial resources	Economic justice
Economic security	Development of prosperity	Public welfare
Supervision and inspection of finance		

[3] *qarar* in the word means danger, trickery and negligence. A *qarar* transaction is a transaction that is risky and the parties to the transaction are not able to determine whether the transaction is beneficial or harmful. Contrary to popular belief, instances of such transactions are transactions in which the subject matter is unknown or impossible to deliver.

Naimi stated that various financing instruments are currently used globally, but most are not usable due to usury and non-observance of religious considerations in Islamic Countries (Naimi et al., 2019). Christopher Culp noted that structured financing techniques have become more prevalent in financing oil and gas projects in recent decades. In particular, securities have played an essential role in project financing by increasing the access of oil and gas financiers to cost-effective financing of capital markets and assisting banks in financing their project loans (Christopher Culp, 2009). In a study examining the short-term and long-term plans of the Ministry of Petroleum to adopt a suitable site to allocate part of the investment costs to domestic producers, Arabi concluded that the application of the above policies leads to increased social welfare and creates employment, knowledge overflow, and development of domestic production capacity (Arabi et al., 2020). Rarasati and Bahwal stated that infrastructure development can be accomplished with a Sharia-compliant project financing plan. Sharia-compliant financing has benefits because it has been proven to withstand the global economic crisis. After all, the value of adding money from money without any effort (usury) ignores lending to loans and things that are profitable. So far, Islamic financing is very potential for growth (Rarasati and Bahwal, 2019).

Ebrahimi and Janfada, in a study, examined the legal-contractual position of income tax in the financial system of upstream contracts of Iran's oil and gas industry. They found that the role of income tax in determining the revenue of the host government and the profit of the contracting oil company in service oil contracts is less critical than its role in concession contracts or even in production (Ebrahimi and Janfada, 2020).

3. Status quo of financing oil and gas industry

3.1. Achieving maximum efficiency in the oil and gas industry

In addition to meeting the country's domestic needs and achieving sustainable exports and safe from potential threats, the need to invest in downstream industries, including refining operations in refineries and petrochemical facilities production of oil and gas products, should be considered more than ever.

Therefore, we need to know the current financing methods in this sector to achieve a reliable, attractive, and appropriate tool for financing this sector. The following methods usually do financing of oil and gas industries in Iran.

- Finance;
- Buyback;
- Domestic banks.

Therefore, due to the limitations of financing through the mentioned methods in the current situation, the growth of liquidity, and the existence of stray capital, the use of the capacity of micro-investors through structured financing tools in this sector should be considered. Attention should be paid to the upstream documents, especially following the provisions of Paragraphs 2 and 3 of Part A of Article 44 of the Sixth Five-Year Development Plan Law, which obliges the government to provide the necessary facilities to create crude oil and gas condensate refining capacity of 2.7 million barrels per day. Bringing the necessary platform to attract investment from the non-governmental sector to increase the production capacity of new petrochemical products to one hundred million tons increases the importance of designing this instrument.

3.2. Classification of Sukuk based on basic structure: the type of contract

If the method of division of Sukuk is based on contracts and basic contracts of these bonds, then according to the multiplicity of Islamic contracts, various types of Sukuk can be designed. Accordingly, the Accounting and Auditing Organization of Islamic Financial Institutions, in its Standard No. 17 of Sharia, based on the type of basic Sharia contracts, has introduced 14 types of Sukuk:

1. Ownership suite of leased assets;
2. Ownership of assets that will be created in the future;
3. Ownership of existing assets;
4. Ownership Sukuk of the benefits of assets that will be created in the future;
5. Salam Sukuk;
6. Istisna Sukuk;
7. Murabaha Sukuk;
8. Mudaribah Sukuk;
9. Musaghat Sukuk;
10. Participation Sukuk;

11. Farm Sukuk;

12. Investment representative Sukuk;

13. Service delivery Sukuk;

14. The right to privilege Sukuk;

Some of these bonds have fixed returns, and some have variable returns. From a religious point of view, there is no preference between the mentioned contracts. The choice of the type of contract is accepted according to the type of need for the issuance of securities. It is generally based on various factors such as economic goals, access to primary assets, company debt level, the credit rating of the publisher (publisher), the country regulatory framework issued by the publisher. Taxes are set. The most famous structures used in the world market are Murabaha Sukuk, rent, attorney, and partnership, while farm, Masakat, and morgue structures have almost no place in the global Sukuk market (Tohidi and Yarmohamadi, 2019).

3.3. Property-based or religion-based

- Property-based Sukuk: Ownership instruments are related to equity, and the ownership agency will be part of an organization (Raei and Saeedi, 2004). In fact, ownership-based Sukuk expresses individual ownership and can be traded in the secondary market at a price determined by market agents. Some types of Sukuk, such as participation and lease, are property-based securities. For example, in lease bonds that are of the ownership-based Sukuk type, the holder jointly owns part of the property transferred under a lease or lease agreement on the condition of ownership (Mousavian, 2008).
- Religion-based Sukuk: These instruments represent a loan that the owners of an organization take from individuals or legal entities. Some types of Sukuk, such as Murabaha and Istisna, are this type.

3.4. Sales, lease, participation, or agent

Sale-based Sukuk, lease-based Sukuk, partnership-based Sukuk, and agent-based Sukuk. Sales and rental Sukuks are structured using exchange contracts. Therefore, these structures are similar to bonds and are considered fixed income instruments, and the returns of these structures to Sukuk holders are fixed and predetermined. This type of Sukuk represents the debt obligations of the bond issuer, but in these structures, the debt arises from the sale of an asset or the lease of an asset, as opposed to the debt on bonds that results from an interest-bearing loan agreement.

Sukuk structures based on participation and agency are similar to stocks and do not represent the debtor's debt obligations. Thus, the return of shareholders based on participation or agency depends mainly on the performance of the underlying asset, and the capital is not guaranteed in principle unless the underlying asset has a guaranteed fixed income nature.

Sukuk structures based on participation and agency are similar to stocks and do not represent the debtor's debt obligations. Thus, the return of shareholders based on participation or agency depends mainly on the performance of the underlying asset, and the capital is not guaranteed in principle unless the underlying asset has a guaranteed fixed income nature.

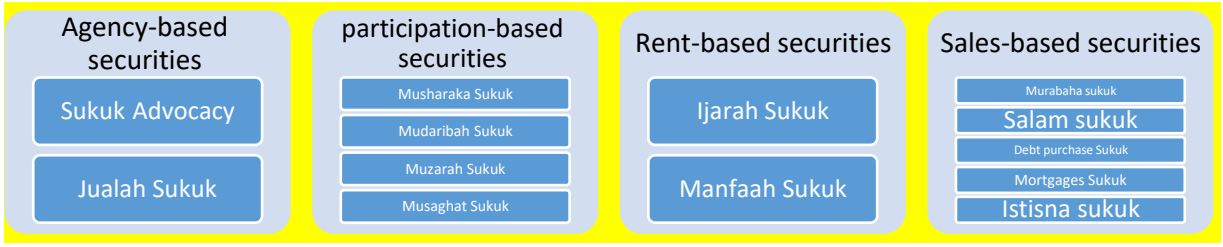

Figure 3. Classification of Sukuk based on sales, lease, participation, and agency.

3.5. Asset-backed or asset-based

Asset-backed Sukuk: Asset-backed Sukuk reflects the duplicate transactions as conventional securitization by which Sukuk holders are considered asset owners, and asset performance is the primary payment driver for Sukuk holders. On the other hand, asset-based Sukuk reflects the same as conventional bond issuance. The bondholders are the issuer of the creditors. Holders of Sukuk based on unsecured assets do not have any collateral that they can return to in case of default of the issuer. Holders of Sukuk based on assets with collateral can refer to collateral in case of default of the issuer.

Although asset-backed Sukuk is closer to the principles and spirit of Islamic law than asset-based Sukuk, the number of issuances of this type of Sukuk is much lower than asset-based Sukuk.

Table 2. Comparison of Sukuk characteristics with asset backed and asset-based Sukuk.

Type Criteria	Asset-based Sukuk	Asset-backed Sukuk
From an accounting perspective	They are usually designed as items inside the balance sheet (for the sponsor/oblige) (like a debt)	It can be considered as an item inside the balance sheet or outside the balance sheet (for the founder/committed) (similar to an actual sale that has outside balance sheet rules and rules)
Ownership	Transfer of only the beneficial ownership of the underlying asset (Sukuk holders receive only the beneficial ownership of the asset)	Complete transfer of legal ownership of the underlying asset
Source of income for Sukuk holders	The primary source of payment, usually from the issuer cash flow	The primary source of payment is the income from the fundamental assets of the Sukuk
The right to refer to the underlying asset	Holders of securities do not have the right to refer to the underlying asset, and the reference is made only to the issuer or its guarantor.	Holders of securities have the right to refer to the underlying asset, and the underlying asset plays an objective role in default.
Value fluctuation risk has a base	Sukuk holders are generally not exposed to fluctuations in the value of their underlying assets.	Holders of Sukuk are exposed to fluctuations in the value of their underlying assets.
Ranking the Sukuk	Depending on the rating of the Sukuk publisher	Depending on the strength of the cash flow from the underlying asset

3.6. Classification by type of application

The application of different structures of Sukuk is different, and the founders of Sukuk issuance can use a wide range of Sukuk, depending on their financing needs. Figure 4 presents the application of each type of Sukuk with an emphasis on Sukuk issuance instructions in Iran.

Figure 4. Application of each type of Sukuk.

3.7. Following the global growth and development of Sukuk In Iran

All types of Sukuk structures will be allowed to be published in the capital market after the approval of the jurisprudential committee of the Securities and Exchange Organization[4]. So far, except for the power of attorney, the structure of other papers has been examined. Nine Sukuk cases have been published in Iran, including participation Sukuk, interest Sukuk, debt purchase bonds, rental Sukuk, Murabaha Sukuk, construction order Sukuk, mortgage predecessor Sukuk, and Islamic treasury bonds. The rest of the structures are not currently operational, which requires the growth and development of the Sukuk market in Iran to further diversify the issued Sukuk structures. The following diagrams show the diversity of the structure of Sukuk issued in the world and Iran.

[4] SEO

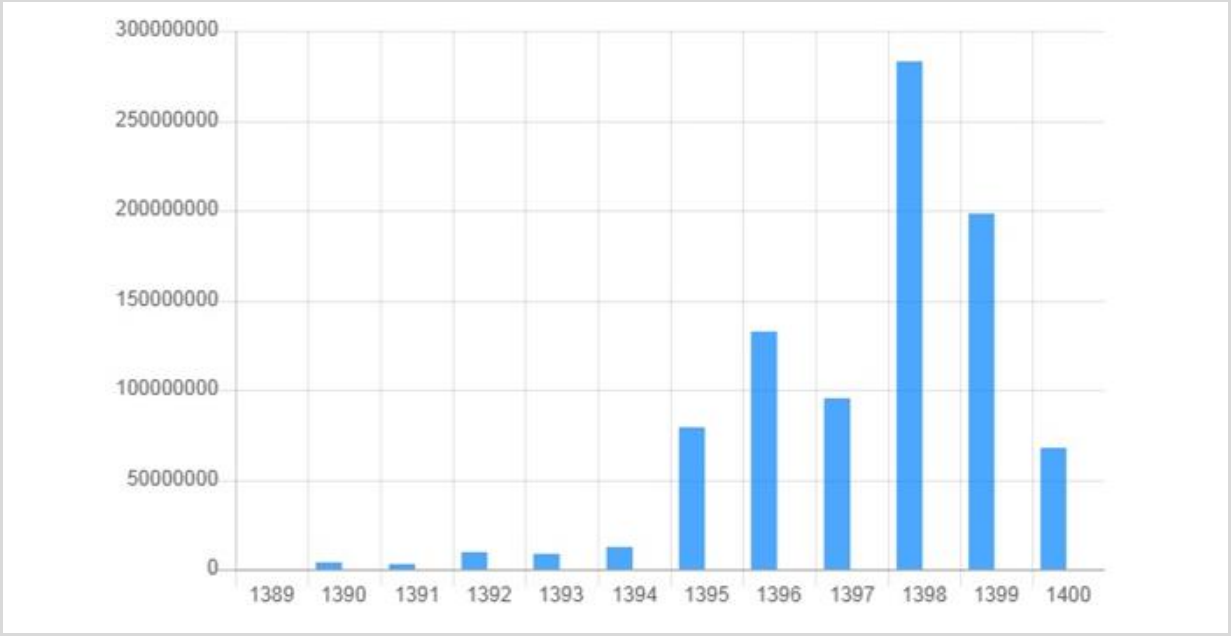

Figure 5. Rial volume of Sukuk issued in Iran from 2011 to august 2021.

Source: Capital market central asset management company.

With the approval of the law "Development of New Financial Instruments and Institutions" at the end of 2010, various Sukuks in the form of Ijarah, Marabaha, MBS, Manfaah, purchase of debt, and construction orders have been issued by financial intermediaries in the Iranian capital market. The Sukuk issued until August 2021 is also divided according to the type of papers according to Figure 6.

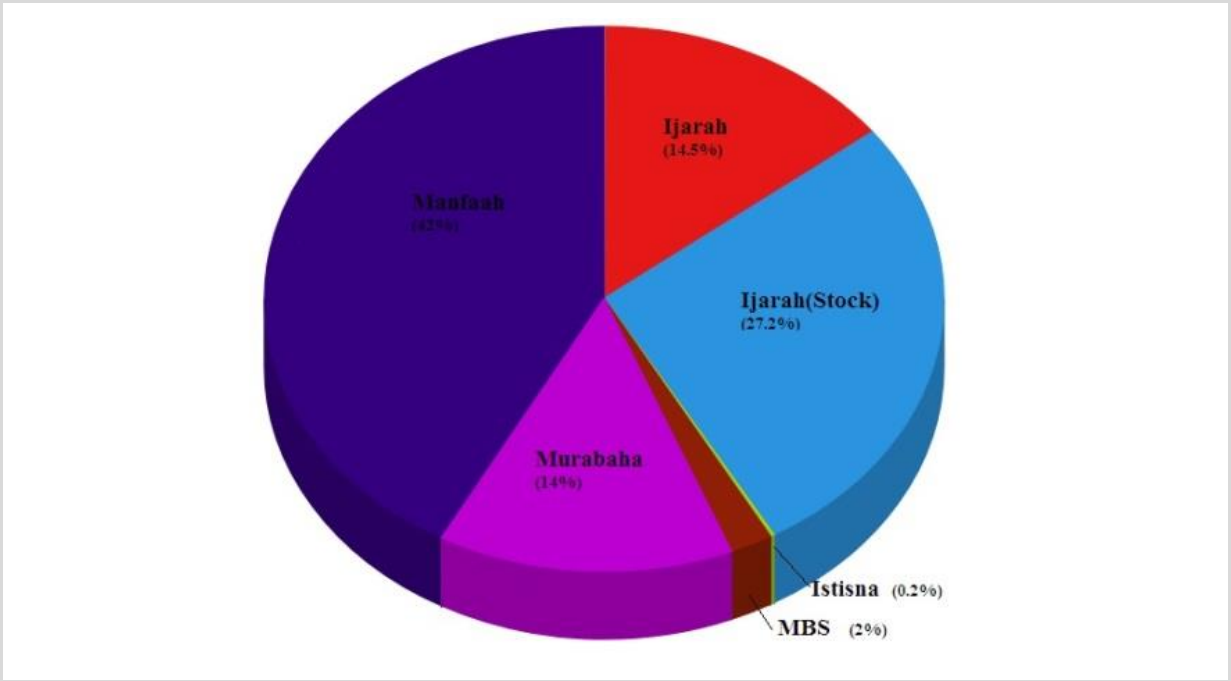

Figure 6. Rial volume of Sukuk issued in Iran from 2011 to August 2021 based on the type of contract.

4. Providing an operational model of the proposed instruments

As mentioned above, the six proposed methods are considered in the form of two groups of three (three sub-methods of group A) in which the founder of a state-owned company affiliated with the Ministry of Petroleum is assumed. Three sub-methods of group B are the founder of a non-governmental company (which may be part of the shares of that government), described below.

4.1. The first instrument: Istisna-Murabaha-convert to stocks (group A)

The process of forming this instrument is shown in Figure 7.

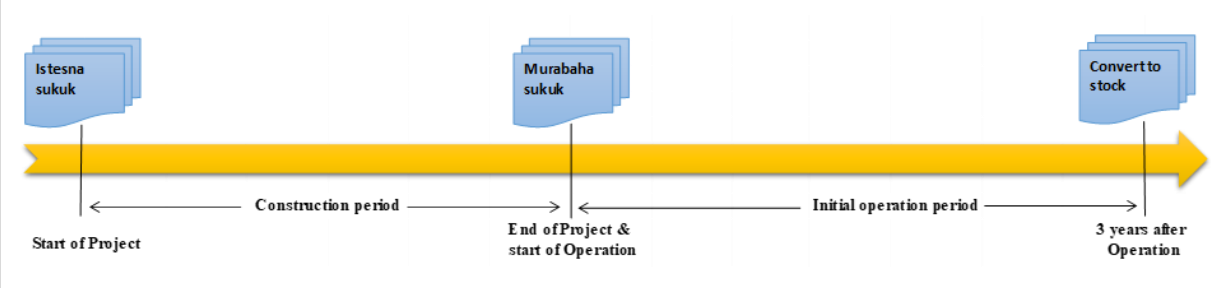

Figure 7. Istisna-Murabaha-convert to stocks (group A).

4.1.1. First stage: period of making and using parallel Istisna Sukuk

At this stage, the originator (state-owned companies affiliated with the Ministry of Petroleum) is trying to build a particular project and does not have the necessary financial credit to carry it out. In this method, by choosing an SPV, the originator entrusts the financing and implementation of the project through the Istisna contract and, instead of the project price, pays the Istisna Sukuk with specific maturities. The SPV, according to the second Istisna contract, orders the construction of the project to the relevant contractor and, in return, undertakes to pay the project price to him according to a specific schedule. Then, with the permission of the SEO, the SPV sells the Istisna Sukuk, which indicates the intermediary's debt to the people through a sales agent and pays its debt to the contractor. These are called parallel Istisna Sukuk.

Therefore, according to the originator described above, state-owned companies affiliated with the Ministry of Petroleum plan to build a refinery and do not have the necessary financial credit to refer to an intermediary such as investment banks or the Ministry of Petroleum. After that, the originator entrusts the construction of a new refinery/petrochemical plant by concluding an Istisna contract with it and, in return for the project price, pays the Istisna securities with a fixed maturity. It can be one of the development companies of the Ministry of Petroleum, such as Pars Oil and Gas Company. It transfers and undertakes to pay the project's price to him according to a specific schedule. Then, with the permission of the SEO, the SPV issues the Istisna Sukuk (discounted Istisna Sukuk), which indicates the intermediary's debt through the sales agent (which can be an investment bank) in the primary market such as OTC in a discounted form. It sells to the public below the nominal price (if the Sukuk are coupon bonds, the Sukuk are given to the investors at a nominal price with a particular maturity) and pays its debt to the contractor. According to the contract, the contractor must receive the project amount from the intermediary according to the specified schedule (based on the provisions specified in the contract) and deliver the project on time. The intermediary also delivers the refinery/petrochemical plant to the originator following the first Istisna contract with the originator.

4.1.2. Second stage: initial operation period; convert of parallel Istisna Sukuk to Murabaha financing Sukuk

Murabaha Sukuk is securities whose holders are jointly the owners of financial (religious) assets acquired under the Murabaha contract. These securities have a fixed return and can be sold in the secondary market. First, to clarify the discussion related to this stage, there is a need to review the types of Murabaha Sukuk. Types of Murabaha Sukuk are:

1. Financing Murabaha Sukuk;
2. Murabaha Sukuk provide liquidity;

3. Murabaha Sukuk for financing commercial companies;
4. Mortgage Murabaha Sukuk;

Considering the necessity of oil and gas projects in the downstream sector, the first type, namely financing Murabaha Sukuk, is considered in this research. In other words, after the end of the construction period and at the same time with the maturity of the discounted bonds with the people (by the SPV), the originator, to pay the original price of the bonds to the investors for their financing by referring to trustee institution, selects or establishes the SPV. By issuing Murabaha Sukuk through the investment bank, the intermediary collects the funds of financial investors and, on their behalf, supplies the raw materials required by the originator (crude oil or gas condensate as feed). Initially, the refinery is expected to be purchased in cash from the Ministry of Petroleum (International Affairs of the National Iranian Oil Company as the custodian of oil sales) for three years (based on a contract with the seller) and sold to the sponsor at a higher price. The originator also undertakes to deliver the credit price of the goods to the securities holders through the investment bank at a specific maturity. Holders of securities can wait until maturity and use the Murabaha profit or sell their Sukuk in the secondary market before maturity.

Thus, by issuing new Sukuk called financing Murabaha and selling them in the primary market from the funds that must be paid to the Ministry of Petroleum to prepare the project feed within a certain period, the founder settles the Sukuk with the investors or can replace them. An option for owners of Istisna Sukuk is to give Istisna holders the choice to convert their bonds into Murabaha Sukuk to finance food purchases through a specific mechanism.

4.1.3. The third stage: convert financing Murabaha Sukuk into stock

At the time of Murabaha Sukuk maturity and after all the preparations for accepting the new refinery in the capital market provided by its originator, the originator can settle the financing by selling a part of its shares in the capital market or by replacing an option for the holders of the Murabaha Sukuk. The possibility of settling and converting it into shares based on a fair price determined by the SEO is forecasted at the time of initial public offering. By entering the refinery into the capital market and converting it into a joint-stock company, bondholders can acquire a percentage of the refinery by converting Murabaha bonds into stocks and benefit from future accumulated profits (as well as future revaluations).

4.2. The second instrument: Istisna-Lease (Ijarah)-convert to stocks (group A)

The process of forming this instrument is shown in Figure 8.

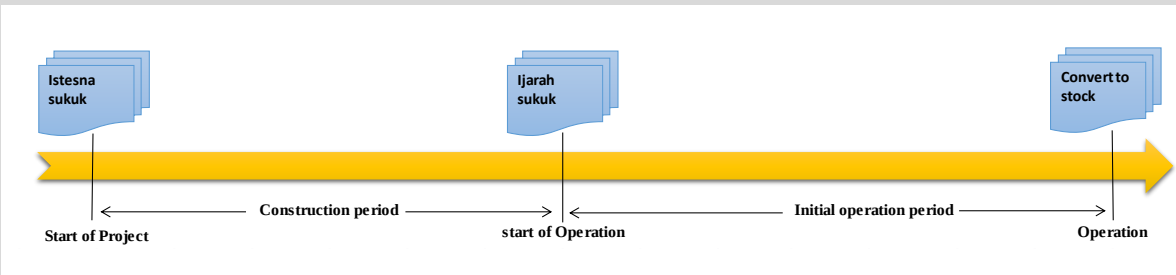

Figure 8. Istisna-Lease (Ijarah)-convert to stocks (group A).

4.2.1. First stage: period of making and using parallel Istisna Sukuk

In this step, completely like the first step of the first method, the mechanism of parallel Istisna papers is used.

4.2.2. Second stage: initial operation period; conversation of parallel Istisna Sukuk to Lease (Ijarah) Sukuk

Lease (Ijarah) Sukuk is securities issued based on a lease agreement and shows its holders' common ownership in the assets that are the basis for issuing the leased securities. These securities are for-profit and can be traded on the secondary market. Lease (Ijarah) Sukuk can be categorized in different ways. Based on the type of contract, these Sukuk can be divided into two categories: ordinary Ijarah Sukuk and lease (Ijarah) Sukuk, and based on the type of originator, into two categories: ordinary companies and financial institutions (banks, non-bank financial and credit institutions, and

leasing companies). Alternatively, lease(Ijarah) Sukuk can be divided into three categories according to the purpose of issuance, including asset lease (Ijarah) Sukuk, liquidity lease (Ijarah) Sukuk, and mortgage lease (Ijarah) Sukuk, which are defined as follows:

1. Asset lease Sukuk;
2. Mortgage lease Sukuk;
3. Lease Sukuk for cash supply;

Given the above and considering the necessity of oil and gas projects in the downstream sector, the third type, namely Lease Sukuk for cash supply, is considered in this research. This means that after the end of the construction period and at the same time with the maturity of the parallel Istisna Sukuk discounted by the people (by the SPV), the investor to pay the original price of the Istisna Sukuk to the investors for their financing by referring to the reputable trustee institution, selects or establishes the SPV, and announces its readiness to sell part of its assets to the SPV and then to lease (subject to ownership) the same assets from the SPV. Through a financing company, lease Sukuk, raises funds for financial investors, and, on their behalf, purchases part of the originator's assets (for example, a unit of a refinery unit) and then transfers it to the originator under a lease agreement, at maturity. Receives the rent, pays it to the securities holders, and at the end of the lease term, following the lease agreement, the leased goods are exchanged for a specific consideration (which is to minimize the time mismatch of the amounts due at maturity). Parallel Istisna Sukuk must be paid to the securities holders in exchange for the principal amount of the property (owned by the originator).

Thus, by issuing new securities called leases on the condition of ownership and sale in the primary market from the funds received, the originator settles the Istisna Sukuk with investors, or he/she can make this choice by placing an option for the owners of parallel Istisna Sukuk. If they own part of the project assets, they allow securities holders to convert their Sukuk into leases through a specific mechanism.

4.2.3. The third stage: convert lease (Ijarah) Sukuk into stock

At the time of the lease maturity and after all the preparations for the admission of the new refinery in the capital market provided by its founder, the originator can sell a part of its shares in the capital market to settle the lease Sukuk on the condition of ownership, or by replacing an option for the holders of the lease Sukuk, the possibility of settling and converting it into shares based on a fair price determined by the SEO. Securities are forecast at the time of initial public offering. By entering the refinery into the capital market and converting it into a joint-stock company, securities holders can acquire a percentage of the refinery by converting the lease into shares and benefit from future accumulated profits (as well as future revaluations).

4.3. The third instrument: Istisna-Manafaah-convert to stocks (group A)

The process of forming this instrument is shown in Figure 9.

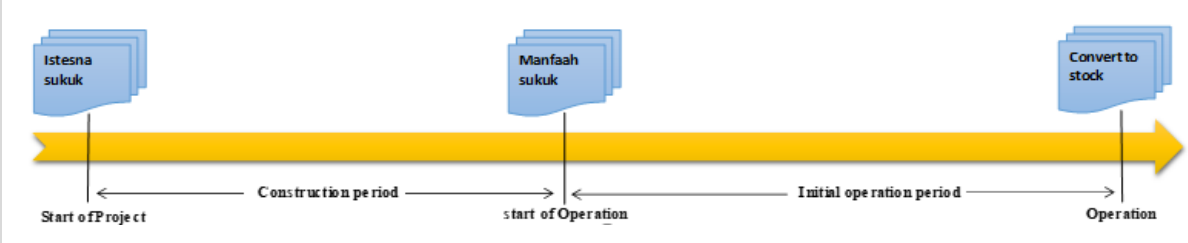

Figure 9. Istisna-Manafaah-convert to stocks (group A).

4.3.1. First stage: period of making and using parallel Istisna Sukuk

In this step, entirely like the first step of the first method, the mechanism of parallel Istisna papers is used.

4.3.2. Second stage: initial operation period; convert of parallel Istisna Sukuk to Manfaah Sukuk

Manfaah Sukuk is the security that indicates the holder owns a certain amount of services or future benefits of a durable asset transferred to itself for a certain amount.

At this stage, after the end of the construction period, the founder owes the amount of parallel Istisna Sukuk to the investors. Now, after valuing the daily price of the refinery, the originator proceeds to the following steps:

1. Originator (Ministry of Petroleum) identifies the plan to transfer the benefits of its sustainable assets (refinery built).

2. Originator, under a contract, transfers the benefits of its durable assets (refinery built) to an intermediary for three years.

3. After obtaining the necessary licenses from the SEO, issuing Manfaah Sukuk, the SPV (issuer) transfers the purchased interests to investors (holders of Istisna Sukuk) and settles parallel Istisna Sukuk. Further, the Istisna Sukuk is automatically converted into Manfaah Sukuk. If the holders of Istisna Sukuk do not want to convert their Sukuk into Manfaah Sukuk as much as their debt, the originator can issue Sukuk and sell them in the primary market and settle their debt from the proceeds.

4.3.3. The third stage: convert Manfaah Sukuk into stock

At the time of the maturity of the Sukuk and after all the preparations for the acceptance of the new refinery in the capital market provided by its founder, the originator can settle the securities by selling a part of his/her shares in the capital market or by placing an option for the holders of the securities; the possibility of settling and converting it into shares based on a fair price is determined by the SEO in predicting the initial release time. By entering the refinery into the capital market and converting it into a joint-stock company, security holders can acquire a percentage of the refinery by converting Manfaah Sukuk into shares and benefit from future accumulated profits (as well as future revaluations).

4.4. Three instruments related to group B; originator is a non-governmental company

The conceptual model of the structure of this type of financial instrument is the same as the above three methods, with the difference that, unlike the above methods, it is the originator of one or more non-governmental companies that is the principal owner of the project according to the construction contract with the contractor. In this model, the Ministry of Petroleum is committed to purchasing services under a long-term contract under a BOO[5] contract, and during the operation period, it is obliged to provide feed following the rules and regulations of the Ministry of Petroleum. This group of instruments, in addition to the above, has the following features:

1. Transfer of project ownership to the private sector;

2. The possibility of receiving facilities by a private company concerning the ownership of the assets created and the guarantees issued by the Ministry of Petroleum in return for the service purchase contract;

3. Reducing the effect of sanctions;

4. Guaranteed purchase of originator service by the Ministry of Petroleum;

5. The possibility of reducing delays in project implementation due to the private sector involvement in investment and closer monitoring;

6. Better productivity of private management than public management (based on theoretical foundations of organizational management);

Due to the structure of the private ownership of the project by the originator and the unsuccessful experiences of conventional financing instruments due to the inability of the originator to pay the guaranteed interest periods (especially during the construction period), the following four methods can reduce some of the mentioned burdens:

1. Depositing the depositor (at least 20%) with the bank (provided that no withdrawal is made from the original deposit) and paying a part of the period owners' interest from the said deposit interest;

2. Certified originator (at least 20%) with the bank and receiving facilities as well as using a one-year breathing period;

3. Bank participation in the mentioned project from the place of the originator's share (at least 20%) in exchange

[5] Build-Own-Operate
BOO contracts have three stages, which include the construction of the project, its ownership to the investor, and finally the operation of the project by the investor company. The first stage of the contract: In BOO contracts, an investor, often a company or group of powerful private companies, enters into a contract with a government. The private company undertakes to build the subject of the contract (the establishment of a refinery) at its own expense and capital. Second stage of the contract: After the construction and commissioning of the project, according to the BOO contract, the construction company and the investor become the owner of the whole project and have no obligation to transfer the ownership to the public sector.
Third stage of the contract: Finally, the investor, who has acquired the project after its construction, will operate the project without any time limit.

for the payment of periodic interests to the security holders according to the bilateral agreement between the originator and the bank;

4. Using cumulative profit with the prize instead of dividend every three months during the construction period;

4.5. Special circumstances of the proposed methods

1. Issuance of parallel foreign exchange Istisna Sukuk, based on the model designed in the Ph.D. thesis of the economics of Tarbiat Modares University (2015) and the article entitled "Currency Participation Bonds Convertible into Stocks" (Zolfaghari et al., 2014) has also been questioned by experts.

2. In all the six proposed methods, the Ministry of Petroleum can establish an SPV initially;

3. Regarding the completion of the project by the contractor, there are three cases:

i. In the first case, the contractor completes the project before the planning time. Because security holders enter the next phase originator and their Sukuk automatically becomes Manfaah Sukuk, it is suggested that the contractor uses a formula based on a formula directly related to the reduced project start-up time based on activity-based profits. The refinery will participate in the same period, and the mentioned amount will be given to the manufacturer as an acceleration reward.

ii. In the second case, if the project ends according to the schedule (with a fluctuation of ± 6 months), we will enter the second phase (conversion of Istisna Sukuk to Murabaha) precisely according to the prospectus.

iii. In the third case, if the project is delayed for more than six months at the end of the construction period, the originator will consider a special offer to motivate the holders of Istisna Sukuk every six months' delay according to the formula. It is specified in the letter of intent to increase the interest rate of Istisna Sukuk based on a method such as inflation-free participation Sukuk with investors in proportion to the inflation announced by the central bank, and an alternative solution can deduct penalties for delay from the contractor upon arrival from the seventh month until the end of the project delivery and the distribution of the mentioned amounts among the security holders as a loyalty reward.

4. In all the six proposed methods, individuals who do not wish to convert their securities into shares can receive the original amount of securities after the transfer of the refinery or petrochemical to the stock exchange from the founder or new shareholders (such as the pre-emptive right mechanism).

5. Considering the proposed methods and designing a new model and the convertibility of securities, the risk of default is minimized, and his/her role as a legal entity with the task of financing required at each stage is less than the previous methods. The inflation rate risk has been practically eliminated to a large extent by anticipating two stages of revaluation (each time the Sukuk is converted). It is envisaged that the Sukuk will be divided or redeemed by the originator with a mechanism similar to the exercise of pre-emptive rights for shareholders in joint-stock companies. Regarding interest rate risk, an attempt has been made to eliminate interest rates by floating the interest rate after the end of the construction period and the possible default of the contractor in the delivery of the project.

6. Parallel Istisna Sukuk in the first stage, both groups A and B, can be a combination of currency-rial Sukuk, depending on the originator's needs.

7. Holders of parallel Istisna Sukuk can pre-purchase the manufactured product at the stage of operation, following the contract with the originator, in exchange for receiving periodic interest and the principal amount of the Sukuk.

8. Holders of Istisna Sukuk after the manufacturing period, in exchange for the cumulative profit of the manufacturing period or the original amount of their Sukuk, can act according to the pre-purchase contract of the product.

5. Research methods

The present study is hybrid in terms of application–development purpose, nature, experimental method, and data type. In developing the initial model in terms of data collection method, it is a field research project in which all technical documents available in the Ministry of Petroleum and other relevant departments, books and scientific journals in the field of research, and even interviews in public media, the text of which is available, were studied. Due to the novelty of the subject, several interviews were conducted with staff and operational managers and other relevant officials in the field of financing the downstream sector of the oil and gas industry. Then, after accurately implementing the text of

the interviews and taking notes from the library texts, by theme analysis, all the independent ideas were identified in the form of concepts and sub-themes, and a code was assigned to each of them. In this way, with the help of Delphi, based on the Islamic financial engineering process based on responding to existing needs by identifying the needs of the parties to the transaction, asset base, and cash flow analysis, the most appropriate Islamic financial model was selected to design instrument and understanding the risk and return characteristics of the transaction. The possibility of adding credit enhancement tools should be examined. A comparative study with existing and usable securities in the capital and money markets was also conducted. Experts were interviewed using a questionnaire and interviews. As the case may be, the survey questions were based on studies on the principles and consequences of jurisprudence, law, finance, and economics of the proposed instruments.

The present research method with the Delphi method is a flexible technique suitable for when our information about the phenomenon is incomplete. The Delphi method is appropriate when the goal is to improve our understanding of issues, opportunities, solutions, and forecasts. The Delphi method has been used to create and develop, diagnose, predict, and validate data (Skulmoski et al., 2007).

Due to the nature of the work and the novelty of the subject, and the lack of experienced people in the field, the snowball method was selected to determine the people. In statistical studies such as public opinion polls, participants represent a large community, while in Delphi studies, the selected individuals are not representative of a population but are informed individuals. In this research, experts have been selected from among jurisprudential experts as well as from the following individuals and groups:

- Members of the jurisprudential committee of the SEO;
- Senior, middle managers, and financial and legal experts of the Ministry of Petroleum;
- Board members and CEOs, senior and middle managers, and capital market experts;
- Faculty members and teachers of universities and higher education institutions.

6. Data analysis

6.1. The first part of the questionnaire

In the following, using Microsoft Excel and SPSS software, we will perform the following statistical tests:

1. Cronbach's alpha to assess the reliability of the questionnaire;

2. Binomial test to make sure the subjects agree or disagree with each question;

3. One sample T-test to know the degree of agreement or disagreement of experts with the subject of each question;

4. One sample Kolmogorov–Smirnov test for determining whether or not there is a consensus on any question;

6.1.1. The concept of validity deals with the extent to which the measurement tool measures the desired characteristic

It is worth mentioning that the validity of the questionnaires of the present study was reviewed and confirmed through a survey of experts.

The concept of reliability addresses how measuring instruments produce the same results under the same conditions. Cronbach's alpha test, the reliability of the questionnaire, is a statistical test that results in a coefficient called Cronbach's alpha obtained from the following formula. A questionnaire designed as a Likert scale with multiple-choice answers is used to test its reliability.

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{i=1}^{k} s_i^2}{s^2}\right) \quad (1)$$

where k is the number of questions, S_i^2 is the variance of each question, and S^2 is the variance of the total questions. If the alpha coefficient is greater than 0.7, the test has acceptable reliability. It is worth mentioning that the nature of the subject of the present study was complex, and the level of difficulty of the questionnaire questions was high. However, according to the following tables, Cronbach's alpha value in the questionnaire is 0.956, which is considered good and indicates the excellent reliability of the research questionnaire.

Scale: ALL

Case Processing Summary

		N	%
Cases	Valid	40	100.0
	Excluded[a]	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.956	65

Figure 10. Cronbach's alpha according to the output of SPSS software.

6.1.2. Binomial test: a binomial test belongs to experiments that have the following characteristics

1. Each test has only two states, "agreeing or opposite". Such tests, which lead to only two outcomes, are called Bernoulli tests. Of course, by determining a point in quantitative variables, they can be divided into two groups less/more (from that point).

2. All observations should be independent, and the response of one sample should not affect the response of another sample.

In general, the hypothesis of a binomial test is as follows:

$$H_0 : p <= 0.5 \quad (2)$$

$$H_1 : p > 0.5 \quad (3)$$

3. The test statistic is as follows:

$$Z = \frac{\bar{P} - 0.5}{\sqrt{\frac{0.5 \times 0.5}{n}}} \quad (4)$$

The above statistic has a normal distribution, so the acceptance/rejection range of the null hypothesis is as follows:

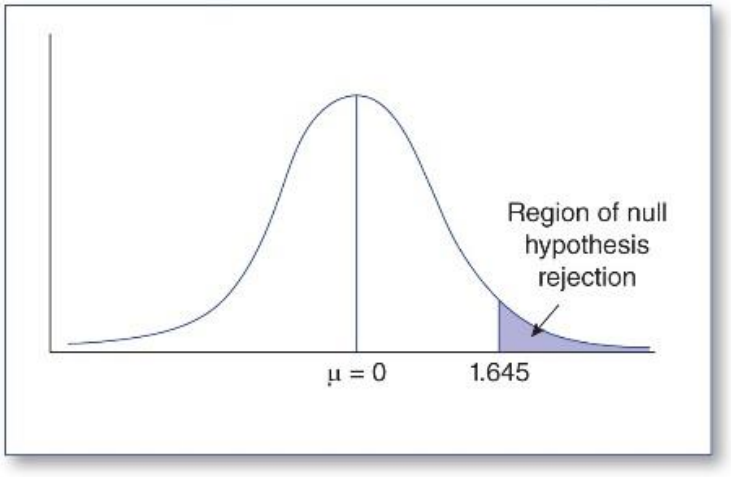

Figure 11. Region of null hypothesis rejection

The null hypothesis is rejected when at the 95% confidence level, the value of the test statistic is greater than 1.64. According to the test results, as shown in the below table, in all questions, the significance level is less than 0.05, the percentage of those who agree is more than those who disagree, and the test statistic is higher than 1.64. Hypothesis H1 is accepted in all questions except questions 1, 3, 4, and 64.

6.1.3. One-sample t-test

A one-sample t-test assesses the respondents' degree of agreement or disagreement with the questions. This test is used when the scores obtained from research are compared to a fixed number; for example, the average per question is equal to the assumed value of five. The number 5 is based on the scores listed in Appendices 1 to 10 for approval or disapproval.

Null hypothesis is H0: $\mu = 5$), and opposite hypothesis is H1: $\mu \neq 5$; the value of t is calculated according to the following formula:

$$t = \frac{x - 5}{s/\sqrt{n}} \quad (5)$$

Statistical indicators, significance level, or confidence interval were used to conclude each question:

1. If the value of the significance coefficient is less than 0.05, the null hypothesis with the mean of 5.0 is rejected.

- If two numbers related to the 95% confidence interval (upper and lower limit) are positive, it indicates that the average of the index is greater than 5, that is, the degree of agreement with the hypothesis at the 95% confidence level is significant; depending on confirming or rejecting a question in a two-sentence test, it is interpreted as strongly agreeing or strongly disagreeing.
- If the two numbers related to the 95% confidence interval (upper and lower limit) are negative, it indicates that the average of the index is less than 5, that is, the degree of opposition to the hypothesis is significant at 95% confidence level. Depending on the confirmation or rejection of the question in the two-sentence test, it is interpreted as low agreement or low opposition.

2. If the value of the significance coefficient is more than 0.05, the null hypothesis with a mean of 5.0 is not rejected. In this case, the two numbers related to the 95% confidence interval (upper and lower limit) are negative and positive. They indicate that the average of the studied index is equal to 5, that is, the degree of agreement or disagreement with the hypothesis at the 95% confidence level is significant, which is interpreted as relative agreement or partial disagreement depending on whether the question is approved or rejected in the binomial test.

6.1.4. One sample Kolmogorov–Smirnov test and summarization of test results

A one-sample Kolmogorov–Smirnov test determines the presence or absence of consensus (agreement) among experts on the questions. The null hypothesis and the opposite opportunity in this test are defined as:

H0: The data have a uniform distribution
H1: The data are not evenly distributed.

The evaluation method is that if the Z obtained is higher than 1.96, there is no distribution scatter, and it can be said that there is a consensus on the question in question. If Z is between +1.96 and –1.96, there is little consensus, and if Z is less than –1.96, the intensity of the agreement or disagreement is evenly distributed; therefore, there will be no consensus.

6.2. The second part of the questionnaire

Analytic hierarchy process (AHP) model: applying this method requires the following four main steps:

Step 1. Modeling: In this step, the problem and purpose of decision-making become a hierarchy of decision elements related to each other. Decision elements include decision indicators and decision options.

Step 2. Preferential Judgment: Comparisons between different decision alternatives are made based on each indicator.

Step 3. Relative weight calculations: The weight and importance of the decision elements relative to each other are determined through numerical calculations.

Step 4. Integrate Relative Weights: This step is done to rank the decision alternatives.

Problem modeling and hierarchical tree formation: The criteria used to evaluate and rank the methods (six designed instruments) as mentioned earlier are:

Table 3. Ten criteria used to evaluate and rank the methods

Capital market liquidity risk	Risk of devaluation of the securities market	Securities default risk (by the originator)	Risk of stock market price fluctuations	Risk of environmental considerations
Credit risk (originator)	Inflation risk	Interest rate risk	Exchange rate risk	Risk of fluctuations in oil prices and oil derivatives

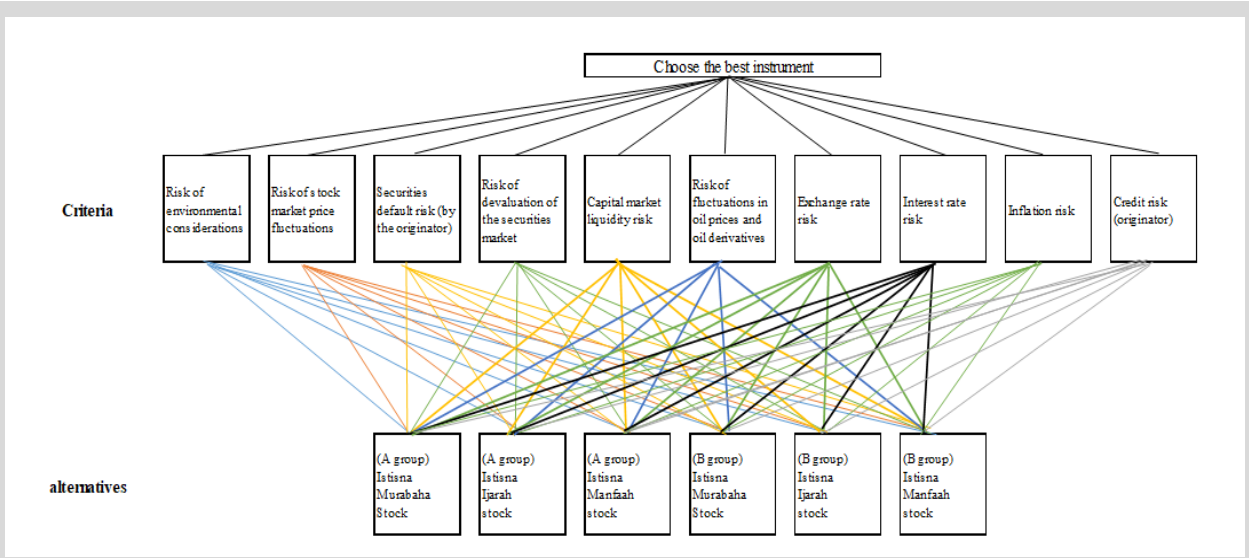

Figure 12. Criteria and alternatives for choice the best instrument

Formation of the matrix of pairwise comparisons, preferential judgments, calculation of relative weights, and calculation of incompatibility rate: After hierarchical modeling of the decision problem, the elements of each level should be compared to their respective element, at a higher level and in pairs.

Parallel comparison matrix of instruments based on liquidity risk criterion in the capital market: In this section, we form an even matrix comparison matrix for instruments based on liquidity risk criterion in the capital market. For example, to compare the two instruments of Murabaha and Ijarah provided that the ownership is proportional to their liquidity risk, we select a number from Table 1. The maximum and minimum data for other instruments should also be considered in this column to evaluate this box. Determining these numbers is a very complex and time-consuming task.

Valuations based on data on the liquidity risk of each instrument show that the liquidity risk of the leasing instrument is more important than the Murabaha Sukuk.

Therefore, after extracting the pairwise comparison matrix for the instruments based on the liquidity risk criterion with the help of Expert Choice software, we calculate the inconsistency of the above table. The software has calculated a mismatch of 0.05 for the above criterion, which is a good number. To determine the weight of the instruments based on the liquidity risk criterion, we add the sum of the numbers in each column and then the number of each component. We divide this results in a normalized matrix by the sum of the corresponding columns and finally find the average of each row, the number of which shows the weight of each instrument as a measure of the capital market liquidity risk. By doing these steps in Expert Choice software, the software output in calculating weights is as follows.

Next, we use Expert Choice software to calculate the weight of tools based on other criteria. Expert Choice software outputs related to the relative weight of each instrument for measuring risks are listed in Appendix.

Table 4. The final weight matrix of each instrument based on the liquidity risk index.

Murabaha	0.354
Manfaah	0.331
Ijarah	0.316

We summarize the weight of each tool based on the risks involved:

Table 5. The final weight matrix of each instrument based on the proposed risk index.

Murabaha	0.316
Manfaah	0.373
Ijarah	0.311

The matrix of pairwise comparison of Rial Istisna Sukuk versus non-Rial Istisna Sukuk based on exchange rate risk criteria is as follows:

Table 6. The final weight matrix of each of the above instruments based on the exchange rate risk index.

rial Istisna Sukuk	0.518
Non-rial Istisna Sukuk	0.428

The paired performance comparison matrix of cost performance (monitoring the contractor's performance in the project) between procedures A and B is given by:

Table 7. The final weight matrix of groups A and B.

Group A	0.466
Group B	0.534

The pairwise comparison matrix of the Sukuk acceptance in terms of the periodic interest payments (coupons) is defined as:

Table 8. The final weight matrix of each Sukuk.

Periodic interest securities A	0.644
Periodic interest-free securities B	0.356

The matrix of pairwise comparison of group B securities according to the five methods of reducing the repayment of dividends of the originator periods (in the construction period) is given by:

Table 9. The final weight matrix of each method.

Product pre-purchase contract	0.310
Use of cumulative profit with prize	0.269
Deposit brought by the originator	0.159
Bank participation in the project	0.142
Collateral brought by the originator	0.120

The paired comparison matrix of acceptance of group A and group B securities is defined as:

Table 10. The final weight matrix of each group.

group A	0.426
group B	0.536

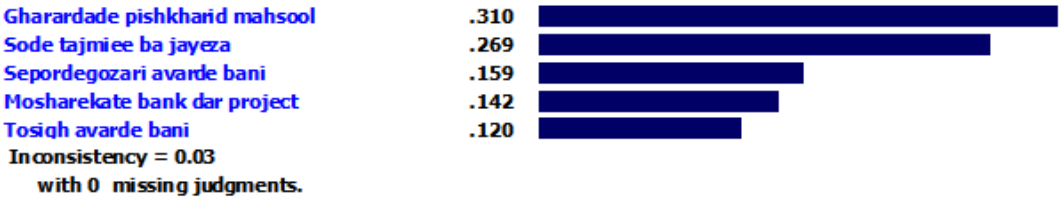

Figure 13. The final weight matrix of each method

6.3. Summary and statistical results

6.3.1. Summary of test results in the first part of the questionnaire

Considering the results of statistical tests (one-sample t-test and two-sentence test), the question were "Can using the capacity of existing financing sources such as banks, foreign investment, and cross-selling alone meet the needs of the country in the field of downstream industries?", "Have the upstream laws provided a good platform for the introduction of new financing instruments (especially in the downstream oil and gas industry) that welcome micro-investors?", "Given the current constraints, can the continued use of existing financing instruments meet the country's needs in the downstream oil and gas industry?" and "According to Article 3 of the Law on Encouragement and Protection of Foreign Investment, approved by the Islamic Consultative Assembly on 2002/05/25, in the meantime, are the conditions of the guarantees specified in this law sufficient for the development of downstream projects?". The experts did not approve and strongly disagreed with them, and the rest of the questions were approved by the experts and strongly agreed with them.

6.3.2. Summary of the second part of the questionnaire

According to Table 1, which shows the final matrix of each of the proposed instruments, lease bonds weighing 0.311 is less risky in all respects, so it can be concluded that the rank of this Sukuk is at the highest level. A second decision must be made, meaning from which group of instruments (A or B) the lease Sukuk should be used. To answer this question, we can conclude from Tables 5 and 8 that group B instruments are more appropriate due to better cost performance and are more welcomed by investors. As a result, it can be concluded that the lease Sukuk issued by the originator (private sector) in the second stage of converting parallel Istisna Sukuk will be more attractive and acceptable than other instruments.

However, according to the results shown in other tables, it is concluded that parallel Istisna Sukuk (Non-Rials) is more attractive than the Rial type and, from the perspective of investors with periodic dividends, is more acceptable. Also, according to Table 7, the originator in the private sector can use the mechanism of the product pre-sale contract to pay the dividend of the first period (manufacturing period) and is exempt from paying periodic dividends to the holders of their Istisna Sukuk.

6.3.3. Operational model of selected instruments (parallel Istisna Sukuk, conversion into Lease (Ijarah) Sukuk, and conversion into stocks)

Legal relations of parallel Istisna Sukuk, conversion into Lease (Ijarah) Sukuk, and conversion into stock:

1. The originator, a non-governmental company, receives the principled approval of the Ministry of Petroleum to build a refinery/petrochemical plant and supply its feed.

2. To build a refinery/petrochemical plant, the originator prepares the construction plan of the project in the form of a prospectus and negotiates with the reputable trustee institute to select the SPV to implement the plan.

3. The trustee institute, by accepting the project construction plan and accepting the responsibility of supervision by the securities holders (as an investor's lawyer) with the cooperation of the originator selects or establishes the SPV.

4. The originator announces its request for the construction of the project by the SPV in the form of an Istisna contract and against the payment of a certain amount and appoints the intermediary in the position of the contractor in the construction of the project.

5. The SPV will provide the necessary documents, including the letter of hope and the contract between the intermediary and the originator, to the rating institute to obtain a credit rating.

6. The SPV enters into a second Istisna contract (so-called parallel Istisna contract) with the contractor and entrusts the construction of the project to it at a particular time.

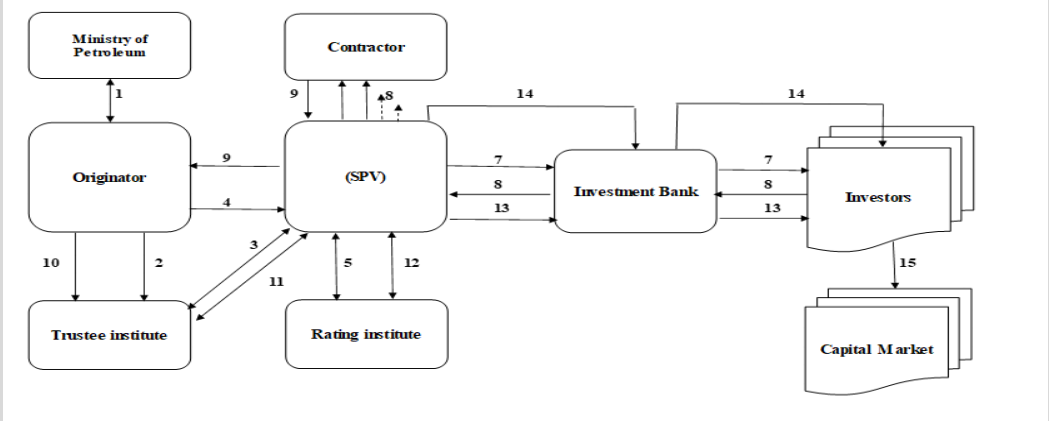

Figure 14. Operational model of selected instrument

Source: research findings

7. The SPV, with the approval of the SEO, provides the Istisna Sukuk to the financial investors through the sales agent (investment bank).

8. The SPV collects investors' funds by handing over Istisna Sukuk; gradually, with each step of the project, it pays the specified fee to the contractor.

9. Upon completion of the project, the contractor shall provide it to the SPV, and the SPV shall provide it to the originator following the initial Istisna contract.

10. At the end of the five-year construction period of the project, the originator requests the sale of a part of the completed asset (refinery/petrochemical plant) and the lease on the condition of re-ownership in the form of a prospectus and negotiates with trustee institute to select an SPV for the project.

11. The trustee institute, by studying the prospectus and with the coordination of the originator, establishes or selects the SPV (publisher) and agrees to supervise and control the publisher in using the funds, according to the prospectus to buy a part of the refinery/petrochemical from the originator; it announces the lease, provided it is owned by the originator and defends the rights of the securities holders.

12. The rating institute examines the operational plan of the prospectus of the cash purchase and lease plan on the condition of acquiring the property and announces its consent to implement the plan. It estimates the originator and the plan and determines the risk of the lease Sukuk accordingly.

13. After obtaining the necessary permits from the Central Bank and the SEO, the SPV shall issue lease Sukuk through the investment bank, if the investors wish, through the financing bank, and shall replace the parallel Istisna Sukuk with the lease Sukuk. Otherwise, by selling lease Sukuk in the capital market, it settles parallel Istisna Sukuk.

14. At the end of the three years of initial operation, the originator issues a Sukuk representing the ownership of investors in the refinery at the time of the transfer to the stock exchange and settles the lease Sukuk at the end of the three years of initial operation through the investment bank with a mechanism similar to priority.

15. Priority securities with investors are automatically converted into shares after the preliminary stages of the listing process.

7. Conclusions

In this study, we sought to eliminate the shortcomings and weaknesses of current financing instruments in the downstream sector of Iran's oil and gas industry and, considering that in-depth research has not been done in this sector, especially in structured financing in the country, we decided to provide instruments to design structured finance following Iran's economic, financial, legal, and religious characteristics. Therefore, after examining the instruments with appropriate characteristics in this field (either in terms of the type of business or having the vital characteristics of an instrument in an Islamic country), instruments with the necessary basic standards were identified and selected. Studies were conducted, and considering the theoretical foundations and background of literature in this field, three convertible instruments based on parallel Istisna Sukuk (first: parallel Istisna Sukuk-Murabaha Sukuk-convert to stock; second: parallel Istisna Sukuk-Lease (Ijarah) Sukuk-convert to stock; third: parallel Istisna Sukuk-Manfaah Sukuk-convert to stock) in the form of two approaches (group A: the originator of a state-owned company affiliated to the Ministry of Petroleum; group B: the originator of a nongovernmental company) were designed with a total of six instruments designed using a defined mechanism and legal relationship with other features (most of which are innovations of this research and are mentioned in Section 4.5) questioned and challenged with experts. Finally, the instrument of the originator of the nongovernmental section and a combination of parallel Istisna Sukuk-Lease (Ijarah) Sukuk-convert to stock was the most appropriate tool in all respects.

Considering the research conducted, it is suggested that structured financing instruments, which are less considered in Iran in various fields, including manufacturing industries, especially ferrous and nonferrous metal industries and other sectors of the economy, should be considered with a resilient economy approach to reducing the effect of the oppressive sanctions of Western countries. With the combination of different Islamic contracts that originate from the dynamic Shiite jurisprudence, the needs of financing should be reviewed regardless of the policies and demands of foreign countries, and new and innovative solutions should be presented.

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Appendix

Figure A1. Relative weights of each instrument for liquidity risk measure, Expert Choice software output.

Figure A2. Relative weights of each instrument for credit risk (originator) measure, Expert Choice software output.

Figure A3. Relative weights of each instrument for inflation risk measure, Expert Choice software output.

Figure A4. Relative weights of each instrument for interest rate risk measure, Expert Choice software output.

Figure A5: Relative weights of each instrument for exchange rate risk measure, Expert Choice software output.

Figure A6. Relative weights of each instrument for risk market value of securities, Expert Choice software output.

Figure A7. Relative weights of each instrument for securities default risk (by the originator), Expert Choice software output.

Figure A8. Relative weights of each instrument for the risk measure of the price of oil and petroleum products, Expert Choice software output.

Figure A9. Relative weights of each instrument for risk assessment of environmental considerations, Expert Choice software output.

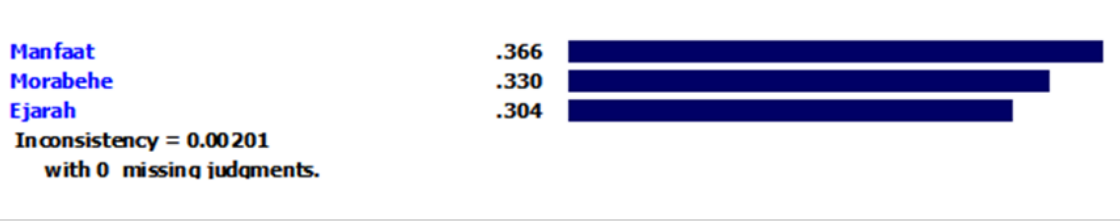

Figure A10. Relative weights of each instrument for the risk of price volatility of the stock market, the output of Expert Choice software.

Figure A11. Relative weights of each of the above instruments for exchange rate risk measure, Expert Choice software output[6].

Figure A12. Relative weights of each of the above instruments, the output of Expert Choice software[7].

Figure A13. Relative weights of each of the above instruments, the output of Expert Choice software.

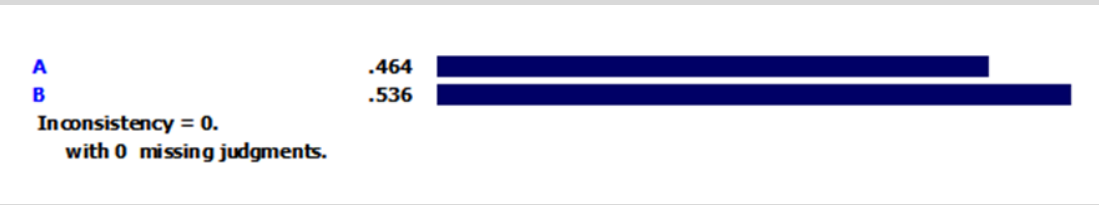

Figure A14. The relative weights of each of the above instruments, the output of Expert Choice software[8].

[6] A: Non-Rial Istisna sukuk and B: Rial Istisna sukuk
[7] A: Groups A and B: Group B
[8] A: Groups A and B: Group B