
# Journal of Economics and Business

**Rabiei Majd, Saeid. (2020), Investigating and Comparing Petroleum Contract Models from Effective Control Lens in Contracts. In: *Journal of Economics and Business*, Vol.3, No.4, 1398-1431.**

ISSN 2615-3726

DOI: 10.31014/aior.1992.03.04.289

The online version of this article can be found at:
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Published by:
The Asian Institute of Research



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The Asian Institute of Research
Journal of Economics and Business
Vol.3, No.4, 2020: 1398-1431
ISSN 2615-3726

DOI: 10.31014/aior.1992.03.04.289

# Investigating and Comparing Petroleum Contract Models from Effective Control Lens in Contracts

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**Abstract**
Selecting the suitable petroleum contract pattern is one of the most sensitive in oil activities after the initial petroleum negotiations, whereas different petroleum contracts have emerged due to the willingness of the host government to grant control and oversight of petroleum activity to the International Oil Company. The right to control effectively is the key to earning more and longer-term profit and impact on project economics for each of the parties. Occasionally, this right to effective control creates a major challenge for host countries and international and transnational oil companies. In the meantime, domestic law requirements play an important role along with the willingness of governments to maintain or grant effective control.

**Keywords:** Petroleum Contract, Effective Control, Host Country, International Oil Company

## 1. Introduction

Always determine the contracting pattern of oilfields is very important for host countries, especially when foreign investors and international oil companies are interested to cooperate in these contracts. This is because of the countries' sensitivity to the features and privileges that this mineral can provide to tank owners and products produced from oilfields, such as political, economic, and even military interests in the regional or international arena for oil field stakeholders.

Determining the right to control plays a key role in oil contracts because effective control is important from the point of view that if each party to the contract has sovereign control and control over the contract, it has the ability to control the capital, extracted product, profits as well as the market finally. This in itself creates a high score along with the strategic points mentioned for the controlling party.

Our assumption in this investigation is that one of the main determinants of choosing the type of petroleum contract model is determining which of the parties can obtain effective control over petroleum contracts?

**2. Define effective control over petroleum contracts**

A review of various legal texts and legal documents shows that there is no complete and independent definition of the right to effective control over petroleum contracts.

From the examination of numerous international judicial and arbitration procedures, it can be inferred that the exercise of the sovereignty and effective control by the contracting parties (host government and foreign investor) of oil contracts depends on the fulfillment of three effective conditions for the International Court of Justice that include :

1. Appointment of Managers (ICJ, 1983) (ICJ, 1986a)
2. Control over the Board of Directors
3. Amount and Percentage of shares (ICJ, 1986b)

In the International Court of Justice view, the appointment of directors and control of the board of directors can be proven and reliable when it is directly ordered by the parties to the contract and included in official documents. It is not a prerequisite for effective control by the host government, whether it is a private or public company if the above condition means the exercise of sovereignty by the government directly.

It should be noted, however, that the appointment of directors and control of the board of directors should not be made because of emergencies, According to Dickson Car Wheel Company Case 669 (Commission, 1931), the Court notes that government has taken control of this company (Dickson Car Wheel Company), But the court declared the Mexican government had taken over the management of the lines to respond to an emergency to control public order and the danger that endangered the country's independence. But the court declared the Mexican government had taken over the management of the lines to respond to an emergency to control public order and the danger that endangered the country's independence and on the basis of this argument there is no responsibility for the Mexican government. Having a majority stake in one of the parties to the contract can be another reason and authority factors for effective control of the holder of the shares.

Accordingly, it can be noted that the Committee on Human Rights (Hertzberg and Others v. Finland, para. 9-1) (UNHRC, 1982) has stated, Because the government holds a majority stake in the company (90%), the company was considered to be under special government control. Another document to examine is the effective control of the internal laws of countries, among the domestic laws of the countries can be mentioned in terms of effective control, Israeli Petroleum Regulations (Principles for Offshore Petroleum Exploration and Production) are approved (2016) (Hukim, 1952a), which one of the issues of the authority to exercise effective control is to have means of control by the company. Including having the right to vote in the company's general assemblies or organs parallel to another company, as well as the right to appoint a director in the company or its general manager or officeholders in parallel to another company (Hukim, 1952b). It is also stated in these Regulations (Control of a Corporation) that Ability to perform actions to guide the company's activities and Rules of Control of a Corporation also defines the ability to perform actions to direct the activity of a company and to participate in a regular partnership, either alone or with others.

It also sets out the rules for expressing one's control over participation has expression, Having half or more of a particular type of control within the company, as well as the ability to make fundamental decisions about the company and partnership, such as petroleum right or the ability to prevent decisions in a particular area (Hukim, 1952a).

The importance of the above classification will become clearer when the ownership rights in the oil activity, each of which has great financial and strategic value, are negotiated between the International Oil Company (IOC) and the host government. The right to control can be examined in several parts of the oil contracting activities and patterns, which are discussed further in the contract patterns.

The survey consists of five general categories:

1. Control over ownership of oil in place or oil reservoirs

2. Control over ownership of oil and oil products
3. Control over ownership of oil in place or oil reservoirs
4. Control over ownership of information and data
5. Effective Control

***3. Concession regime***

The Concession contract (CA) was the first system adapted to the petroleum industry, and it is still one of the most popular and widely used systems throughout the world (Meuers, 1988).

Professor A.A. Fatouros has been defined a concession agreement; an instrument is between a government and a private person and provides for the grant by the government with an individual of exclusive right or authority that is usually own to the government and expected from it (Fatouros, 1963).

The granting of concessions by the host country (HC) is not mean transfer the owner of a natural resource to the concessioner, but also authorization to IOC for enjoying the exclusive right to operation and marketing (Carlston, 1958).

The Concession is an arrangement whereby the IOCs have granted the right to explore and operate petroleum in exchange for the payment of all costs and also specific taxes related to the operation (Wells et al., 1987).

Under a Concession arrangement, the HC grants the contract holders exclusive exploration rights (exploration license), as well as exclusive development and production rights (lease or Concession) for each commercial discovery. In other words, the term Concession has, in this context, the same meaning as license and refers to a contract between the HC and an IOC granting exclusive rights to the IOC to operation for petroleum within a particular region and for a determinate duration of time. This kind of contract grants ownership rights to oil and gas to foreign oil companies, IOCs also have effective control over operations and associated risks (Al-Emadi, 2010).

The Concession usually gives all producing oil and gas to the IOC, while HC is imposing the commensurately royalty and tax rates.

According to Clause 2.2 of the Brazilian Concession Agreement (Annex I), IOCs must pay:

a) Signature bonus;
b) Royalties;
c) Special participation;
d) Payment of the occupation and retention of the area

The Concession is an arrangement whereby IOC has granted the right to explore and exploit hydrocarbons in exchange for the payment of all operating costs (Capex & Non-Capex) and all specific taxes (Duval et al., 2009). The Concession agreement in the petroleum industry gives the contracted company the HC as the owner and gives him the right to keep the hydrocarbons. The IOCs have exclusive right to explore and produce hydrocarbons, at his own expense and risk, becoming the owner of the oil and gas produced according to the contracts and taxes have been applied.

This is the beginning point of elements evaluation and identifies what are the significant differences between this petroleum contract regime in relation to others.

The main elements in this type of traditional concession contracts (CAs), including:

1. Granting licenses and exclusive exploration rights through a license to an IOC.
2. Payment of royalties, surface rental, and taxes by the foreign investor (IOCs) for the use of this privilege to the HC.
3. The vast territory of the land of the HC has been let under the control of an international investor for oil

operations.

4. The CAs were usually long-term. For instance, Article 3 of the 1980 Abu Dhabi concession provides for a 35-year term. Also, In the 1980s Norway had granted Licenses that during this license were provided for a six-year term with a "period of lengthening" of 30 years (Peter Cameron, 1984)
5. HC's non-interference in operations and lack of facilities for monitoring.
6. Creating an ownership right for the IOCs on reservoirs discovered (Najafabadi, 2014)

Post-World War II developments, factors such as the recognition of the sovereignty of countries over natural resources and the expansion of the nationalization movements of the oil industry led to the creation of a new generation of CAs (Shiravi, 2014).

Generally, in the Concession, the role of HC is to regulate and monitor Exploration and Production (E&P) activities by the IOC.

Usually, developed countries with high technology, expertise, and experience in the oil industry are interested in tax collection systems. For instance, the United States and Norway tend to use the Concession system (Ellsworth, 2005).

A modern score is probably called a "license." In the American legal regime, it is a common practice called this contract lease. Also, terms in the modern system have been modified. For example, the traditional concept of multinational companies that breaking and trampling the rights and interests of indigenous people has not been accepted in the modern world.

The elements that have been changed in the modern system include the parties to the contract, the method of the award, the extent of the rights granted in the contract, the duration of the contract, and the status of government (government takes or oil company takes) this is perspective about the division of benefits, royalty, and tax (Smith, 1991)

The feature of the modern generation of CAs, including:

1. Reduced operational area (blocks) under the control of foreign companies;
   In Norway, in 1988, based on the twelfth issue of licensing of oil products, each company was allowed to operate in independent and small projects in Conoco, Esso, and Elf Aquitaine. Norway's State Oil Company (Statoil), this company had 50 percent participation in petroleum activities to each of the sixteen blocks licensed (Smith, 1991)
2. Restricts the activities of the foreign company to the upstream activities;
3. Reducing the duration of long-term Concession contracts;
4. Cancel IOC ownership of tanks and oil in place;
5. the usage of penalties and the right to cancel the Concession Through continuous inspection by HC ;
6. a plan of development in the areas not utilized;
7. Contractor's commitment to using aboriginal forces, obligation to lease national companies for services and equipment;
8. The requirement of the IOC for training and job creation for workers and indigenous people engaged in the oil industry;
9. Modern contracts usually allow the concessionaire to obtain owns of equipment had installed;
10. After producing and extracting oil, the owner of a concession can obtain ownership of the oil in the at the wellhead;
11. Increased government control and control over oil operations;
12. Increased government receipts from Royalty interest and taxes (Shiravi, 2014);
13. Run split formula based on 50 -50, According to this method, the government receives half of the pure benefits of the company under the name of the tax (madrese alie hoghogh, 2014);
14. Under the United Nations, 1982 Convention on the Law of the Sea ,ownership of hydrocarbons (found in sea or land) is at the disposal of the government ,but if hydrocarbon has found on the continental shelf, the government can only grant the oil company a license under the 1982 Convention (Park, 2013);

15. In the modern system of concessions, they granted a license to the contractor by these methods (competition, individual negotiations, tendering, discretionary licensing). These methods allow sovereignty to consider various factors in choosing an award (Smith, 1991). Most North Sea countries have been using this system (Peter Cameron, 1984). In 1985, at the 9th round of licensing in the UK, it was an excellent example of using these systems. The modern system of concessions has been used in marine areas, especially at a depth of more than 200 meters.
16. "Government take" has several models there, as well as royalties and taxes. Some licenses may contain terms of direct payments such as bonuses and delay rentals payments (Vagts, 2015). The creating requirements for a contractor through licensing for training and employment of workers and indigenous peoples of the HC or the specific technology must have transferred to the HC (Smith, 1991).

Typically, this type of upstream oil contract system is used to explore and develop deep-sea who high-risk fields that require high capital and technology.

The HC or IOCs can adopt many methods for royalty calculation, including pre-tax profit-based royalty total revenue-based royalty, lump-sum royalty, royalties based on reward, etc (Kang, Chao-Chung, Cheng-Min Feng, 2011).

### *3.1. Control over ownership of oil in place or oil reservoirs*

The HC grants a concession to a concessionaire who invests and maintenance control rights and cash flow rights for a period specified in the contract. During this period, the HC has no responsibility for the IOC's profits and losses (Auriol and Picard, 2013). Because the HC has transferred all rights, responsibilities, and the right to effective control over the tank to an IOC, through a CA including ownership of oil has been the hydrocarbons extracted and the right to authorize oil reserves in IOCs books.

This view was based on the fact that the IOC pays the costs, royalties, and taxes to the HC .Instead, the IOC acquires effective control and full ownership of the tank and oil production .The HC does not have access to (ownership) oil, although it is the owner of the land that contains the oil (Al-Emadi, 2010).

However, the modern concession agreement has canceled of IOCs ownership of the tank and oil in place.

### *3.2. Control over ownership of oil and oil products*

A CA is a legal concept, which investor is allowed to carry out activities exclusively in the geographic area concerned under the right to exploration, production, and development of oilfields (Zhiguo Gao, 1994). In the regime of concession, the HC has ownership of oil in place, and the IOCs have only the right to operate within a specified period (Keith Blinn et al., 1986). The IOCs will be the owner of the oil at the head of the wellhead with the exclusive license for exploration, extraction, but IOC must acceptance of all contract risks and pay taxes and royalties to the host government during the contract period (Smith et al., 2010).

According to Article 20, item IX of the Brazilian Federal Constitution and Article 3 of the Law of Oil 9.478/97, one of the main features of the law of Brazil is that hydrocarbons are generally owned by the federal government until they have extracted from the oil Well .When Condensate Oil and Natural Gas have extracted from the subsoil, they become the possession of the IOC.

Federal Constitution -Article 20. The following are the Union's property:
IX - the mineral resources, for instance, subsoil;
Law N. 9.478/97- Art. Three combined with the alterations imposed by Law N. 5.938/09. The (E&P) of petroleum (Crude oil and natural gas), and other Hydrocarbon materials in the pre-salt zone and strategic fields will be contracted by the Federal Union under the regime of Production Sharing, based on this Law (Silva, 2010).
In the modern concession agreement, oil ownership has been determined often divided based on an agreement between the IOC and the HC that, in some cases, the share split is 50 -50.

### *3.3. Control over ownership of oil in place or oil reservoirs*

IOCs, at the end of the contract, must transfer ownership of all equipment and supplies to the host government (Keith Blinn et al., 1986) by means of public interest.

According to the laws of Brazil, ownership of the facility is the holder of the Concession by the licensor until his lease expires. After installation of facilities and equipment may then revert to the HC without compensation for the concessionaire. The IOC possesses the total responsibility of obtaining and the installation of the equipment necessary to carry out the activities. Therefore, the IOC protects the proprietary responsibilities of the facilities and equipment. Under the Brazilian Oil Act, only the return of property and equipment to the government is required to be reversible. This property includes immovable and permanent property as well as movable equipment, existing in any the installment in the area of Concession (Silva, 2010).

Under the Norwegian Oil Act:
The right to revert the property and equipment of the installation apply in the oil activities after the license has also terminated, another condition that the installation facilities and equipment must be in a suitable situation in order to guarantee safe operation also after the property and equipment have returned (Business, 2001)[1]

### *3.4. Control over ownership of information and data*

Indeed the owner of a concession is ownership of the production of crude oil, natural gas, information, and data from the field and reservoir; this ownership has made due to contractual obligations and the requirement to pay taxes and royalty.

### *3.5. Effective control*

Indeed in the Classic Concession, The HC did not right to participate in management and control decisions. IOC has been all of the instruments of legal and contractual and financial to effective control. Accordingly, the IOC must pay HC for the duration of the period, royalty and tax.

In the modern concession system of contracts, the terms of the contracts have been intended to provide for the host government the right to participate in the management or control of oil activity. Usually, the effective control has been utilized at the time of granting the license by shortening the duration of the contract, limited the phases and operating blocks by the HC.

## *4. Production Sharing Agreements (PSAs)*

Production partnership contracts have first used in Indonesia in the agricultural sector. It was later used in the oil and gas industry (Babusiaux, 2007).

PSA is the type of contract between the HC a National Oil Company (NOC) and an IOC or consortium, which allows authorized companies have been qualify to carry out exploration and extraction of oil by the terms of the contract (Pongsiri, 2004).

The benefits of oil production have been divided between the two companies (Barrows, 1988); this partnership in the production of oil between the IOC and an HC will lead to joint ownership of the oil produced by the parties. In this way, the costs and risks of doing so are borne out by both parties (Daniel Johnston, 1994). The authority of the HC has typically based on Exclusive rights; it was based on Legislation on Oil, Gas, & Mines of the HC, which has given to the IOC (Taverne Bernard, 1996).

[1] The Norwegian Oil Act 29 November 1996 No. 72 relating to petroleum activities. Last amended by Act 14 December 2001 No 98, 28 June 2002 No 61, 20 December 2002 No 88, 27 June 2003 No 68, 7 January 2005 No 2, 30 June 2006 No 60 and 26 January 2007 No3, Section 4-3.

One of the main aims of the PSA is to attract multinational companies in the Petroleum Industry, in which they are interested and willing to risk capital and utilize technological expertise to develop the oil tanks in the HC (Silva, 2010). The IOCs, as investors, must have the holders of the necessary expertise. Countries with moderate experience prefer to use PSA due to these types of contracts are simple and require less state control. Often, these types of upstream oil contracts have been used by developing countries in Africa and Central Asia with unstable states and weak rules of law (Ellsworth, 2005).

The host countries, through the utilization PSAs, has been looking for full ownership of technical expertise and effective control over operational skills, production, management and marketing, and related risks, as well as meeting financial needs (Al-Samaan, 1994).

If the IOC succeeds in discovering and producing a commercial field, they can have a share of production and recover all costs and return on the investment (Bindemann, 1999).

The main elements in PSAs include:

1- cost recovery;
2- The division of production between the HC and the IOC;
3- Income taxes.

Oil policies may vary from country to country; most of them aimed at maximizing revenues and minimizing financial risk in oil operations (Silva, 2010).

A variety of methods and mechanisms of the HC could get remuneration in the upstream oil include:

1. IOC must be paid a bonus for certain events specified in the contract;
2. The IOC must pay the operating area rent or the right to maintain the area specified in the contract during the duration of the contract at all stages of operation or production in offshore or offshore;
3. Production royalty;
4. A great benefit to get exclusive rights IOC;
5. Divide oil profits;
6. IOC revenue from fields during the production has a direct impact on profit tax (Silva, 2010)

Usually in the PSA is not expressed the concept and royalty rules because of the issue of ownership. However, there are PSAs with royalties in the financial system. For instance, Article 42 of Law 5938/09 has been approved in Brazil. The HC is allowed to use royalties as revenues to compensate for oil exploration. The royalty mechanism has never been necessary for PSA because the cost recovery constraint mechanism has been guaranteed the income of the HC during the first years of oil production, mainly when the company is benefiting from a position of non-tax (Nakhle, 2008).

In the PSAs, the IOC is entitled to recover costs based on a benchmark and a predetermined proportion of the produced oil; this proportion has been called the cost oil.
In general, PSAs can have divided into two major groups:

1. The first model, The IOC first receives a portion of the production to pay off costs and expenses, Receives a certain percentage of the remaining oil production from the oil field, this model is known as "Indonesian PSAs."
2. The second model, IOC, receives a specified percentage of the oil field production as payment for the costs, expenses, and profit. This model is known as "Peruvian PSAs" (Silva, 2010).

The IOC has the right to receive the share of produced oil (oil cost) to cover investment costs in the HC; these costs include capital costs (Capex) and operating costs. According to the Brazilian Bill of law 5938/08, Production Sharing Contracts (PSCs) ar a "regime of (E&P) of oil, natural gas, and other fluid hydrocarbons" whereby oil companies will have granted rights to explore for, develop and produce petroleum reserves, at their cost. In the event of a commercial discovery, costs incurred will be reimbursed to oil companies through an entitlement to production referred to as "cost oil." The remaining petroleum, after deduction of cost oil, is considered "profit oil."

This profit oil has been shared between the IOC and the HC in the percentages set forth in the PSC (Silva, 2010). According to Brazil Bill of Law 5938/09 –E.M.I n.00038 article 14. 31/08/09 Features of the PSAs include:

1. The IOCs has been accepted all operate risks before beginning the operation and IOCs must be under the supervision of the HC;
2. Responsibility for providing equipment and personnel necessary to carry out operations with IOCs;
3. HC owns all oil and oil products production;
4. the IOC can use the product belongs to the area specified in the contract for recovering their investments;
5. after the IOC has recovered all costs, the remainder of the production will have shared between the IOC and the HC, in proportions previously established in the PSC;
6. The IOC must pay taxes to the host government from their income;
7. The NOC has the authority of the HC to determine the selection of the IOC and particular contract for a specific region and the determined duration of time.

Another feature of the PSA is the issue of the government's effective control over the oil sector, which has an impact on E & P activity and hydrocarbons. The government gains more influence directly or through the NOC for better control and more detailed inspection of oil activities. NOC, on behalf of the government, has the role of regulates and inspects the operations and activities of E & P directly, which can be the operator or not (Silva, 2010).

The main methods of ownership and the amount of oil produced in the system of PSAs are:

1. Ownership of oil in a fixed proportion to the parties to the contract, this system HC has ownership of 85% and IOC ownership of 15% on oil production. For example, Indonesia.
2. Ownership of oil based on progressive share or in daily production or production accumulation, for example, the HC will take a higher share if the progressive oil production.
3. The ownership share of oil produced between the parties to the contract depends on:
   3.1. Operation profitability;
   3.2. Some variables in the contract, for instance, production operations, were onshore or offshore, either oil or gas production, etc (Silva, 2010).

According to Angolan PSAs (the Law 13/2004 for the "Taxation of the Oil-producing Activities) have imposed Special taxes law (the tax income has set to 50%) on the activities of the oil for all national and international oil companies that operate in the territory of Angola.[2] Angola is the only major oil producer in Africa to use the "return rate" as the basis for calculating "oil profits." In other countries such as Qatar, Gabon, and Ivory Coast, this rate is very low and about 30% (Silva, 2010).

Indonesia was the first country to pass the PSAs. Malaysia has been changed the legal, regulatory structures in the first half of 2000. The major alteration has made that regulatory agency to decentralize power Pertamina (the stately belong Oil Company).

The oil profit-sharing system has created in Indonesia that the IOC must split the first 20% of the oil production with the NOC. This system has been called "First Tranch Petroleum" (FTP). The FTP is a way to cost recovery. These changes have removed regulatory and economic responsibilities from the NOCs.
According to Iran's petroleum law of 1957, two types of partnerships with foreigners were possible:

1. An independent Iranian company (a joint venture),
2. Unregistered civic participation (mixed system).

1. In 1957, Iran signed the first PSA with Agip Company (Azienda Generali Italiana Petroli - Italian General Oil Company). The company, ENI, was an Italian agent. This PSA was the type of joint venture (JV) (Mina, 1998). The Iranian National Oil Company (INOC) was an agent in Iran. INOC and Agip Co have been established as a joint venture. Equal capital was one of the features of this joint venture. This JV is called Societe-Irano-Italienne des Petroleos (SIRIP).

[2] See more, www.minfin/gv .Downloaded 09/2010.

Other features of this JV were: one Iranian was the chairman of the board and also the equal number of board members (SIRIP) in this JV. Each party owns 50 percent of its shares, but the IOC had to pay half of its profits to the Iranian government as taxes, which resulted in the actual share of the profits of each party accounting for 75% to 25%. The share of HC was equal to the total royalties and half of the profit from the sale of oil .As a result, the IOCs held 25 percent of the total oil revenues (Ahmadian, 1999).

The scope of this JV has been determined in three parts of Iran, including in the Persian Gulf, on the eastern slopes of the central Zagros Mountains, and in the coastal region of Oman (NIOC, 2010).

To paragraph C of Article 12 of the JV, that SIRIP must be obliged to supply all oil quantities for sale to the NIOC and Agip before others.

2. The second PSA was signed in 1958 with Pan American Petroleum Corporation. The contract of the National Iranian Oil Company (NIOC) with Pan American Company was mixed participation (Mohebi, 2007). The contract was made up of a nonprofit company called Iran Pan American Oil Company (IPAC). The company (IPAC) has considered as the agent of the parties, and its capital and management were fifty-fifty with each other (Article 3, Contract of the National Iranian Oil Company and Pan American Petroleum Corporation of Corp, 1337). Two areas in the Persian Gulf have been included in this mixed partnership. Ownership of oil production has been transferred at the wellhead. Also, the share was equal to parties .(Article 23-25 of the contract of the National Iranian Oil Company and the Panamerican Petroleum Corp. 1337) (Mafi, 2008).

3. A PSA signed between NIOC and Sapphire Int'l Petroleum Ltd on June 16, 1958; this corporation has been called IRCAN. Under the agreement, the two parties formed a JV for the exploration and exploitation of oil in the Iranian offshore areas and management of the operations. The net profit was to be divided 25 % for Sapphire and 75% for NIOC and Iran. The carrying out of oil operations was in two parts of the Persian Gulf of the continental shelf (Judiciary, 1958) .The general principles of this contract were consistent with the Pan American Agreement. The contract has never been implemented because sapphire Petroleum Co did not do anything to start it (S Ripinsky, 1963).

4. Six contracts were signed in 1965. Profits on these contracts based on the criterion of 25% - 75% have divided between the parties. In this history, it is possible to say that the NIOC has been governed by the Iranian oil industry. Because the contracts of this period were generally contracts for the purchase and sale of Iranian oil. Six contracts were signed with Ashland USA, Agip Italy, CFP France, Altramar UK, and two contracts with German Dummies for areas of Shiraz and Abadan. These contracts were never carried out with the establishment of the Islamic Revolution in Iran (Muhammad and Mohammad Reza, 2007).

5. On December 27, 1971, three contracts were approved by the Iranian parliament. These three PSA contracts have based on the 50-50 formula. Since 1966, part of the consortium was handed over to the NIOC. After that, auctions have been held for those regions, which resulted in the conclusion of three PSA (Rouhani, 1978).

According to the contracts, joint ventures have been created. Bushehr Oil Company (BUSHCO) and Mobil Oil Corporation, a JV company, Hopeco Oil Company. PSA contracts for the exploration period were up to six years. The advantages of the three partnership contracts are: The supply of crude oil needed for domestic consumption has been the priority over crude oil exports.

In the case, if the contracting party does not intend to express your will or plan to operate your share of gas to the NIOC within six months, there will be no contracts right to the gases for them, and all the gas produced will belong to the NIOC (NIOC, 2010).

Among the operational and administrative areas assigned to the NIOC by signing new contracts was including: Income control and operations such as operational plans and budgets, the Abadan refinery, exploration, and refining operations carried out by the NIOC, before which the NIOC was solely responsible for non-industrial activities and domestic broadcast operations. These changes took the situation as a NIOC, and the adoption of the

second petroleum law in 1974 has occurred in a period close. According to parliament, Law passed the Prohibition of transfer of ownership of oil to IOCs. Moreover, only contracting contracts were allowed as a suitable template for the cooperation of the NIOC with foreign companies to explore development and production (NIOC, 2010).

### *4.1. Control over ownership of oil in place or oil reservoirs*

The system of PSAs has been to attract foreign investment with respect and attention to the preservation of public ownership, PSAs regime has used to attract foreign investment with respect and attention to the preservation of public ownership, and in all PSAs have been mentioned to the owner of oil is HC including the oil in place or the oil reservoirs. Also, in the PSAs, it is possible to get a reserve for fluctuations in the price of oil provides. These reserves are due to maximizing HC share (Zhiguo Gao, 1994) . In PSA, oil and gas always belong to HC; in this way, part of the oilfield production to the IOC will belong based on recovery to the risk of exploitation and investments made in the contract process (Silva, 2010). In a PSAs, IOCs will be able to list only the barrels it keeps. This means that if the contract has determined the share of HC is 60% of oil production, IOC will only be able to book the remaining 40% of oil production.

### *4.2. Control over ownership of oil and oil products*

Oil production has owned by the HC, and the contractor under his supervision performs his duties. The IOC obtains ownership of the share of crude from oil at the point of export of oil. Based on contractual obligations has been created the right to share oil for oil companies.

In other words, as long as the hydrocarbon is underground, it belongs to HC, but when it reaches the wellhead, IOC will be the owner automatically (Bunter, 2002).

IOCs will be owner oil production if:

1. Succeeding to discover the oil field
2. The oil production should be at the limit and percentage specified in the contract.

The IOCs ownership of that percentage oil production, but HC will pay this percentage to IOC (Al-Emadi, 2010).

### *4.3. Control over ownership of oil in place or oil reservoirs*

The equipment used in the project has divided into three categories:

1. Equipment belonging to IOC (service provider) without the possibility of transferring the installations to the government (Daniel Johnston, 1994);
2. Equipment that has been leased or bought by the contractor and they entered the country. This equipment will remain in the ownership of the HC both before and after Exploration and Production (E&P) (Fabricant, 1975); For instance, In Indonesia, the facilities and equipment used by the IOC are automatically transmitted to the HC at the beginning of the operation.
3. The equipment purchased is transferred from IOC to the government after being used in the project. Indeed, the government is the ultimate owner at the end of the contractual period (Keith Blinn et al., 1986); For instance, in Angola, the IOC equipment used in the project must be transmitted to HC at the end of the contract period.
4. Equipment is shared own between the HC and IOC, at one percent of the preset for each section; in the case of a joint venture, facilities and equipment will have transferred to the HC at the end of the contract period (Silva, 2010). For instance, in Venezuela, the JV regime has been approved, IOC's equipment and facilities as long as they are active, but they must transfer all installations and equipment to HC at the end of the project. One of the features of the PSCs is this at the termination of a contract must be transferred all the facilities and equipment to HC, at no extra charge. An example of this can have noted in the case

of Angola.[3] Also, article 57 of the "Law of Oil Activities" (Law 10/2004, of 12 of November of 2004) expresses clearly that, at the time of the termination of the contract, all of the equipment, instruments, material, and any other property acquired for the operations during the PSA (Angola, 2004).

### *4.4. Control over ownership of information and data*

In the PSA, all data and information will have owned HC, including all geological information, seismicity, reservoir layout, and ..., in such a way, the oil company must be obliged to submit their reports to the government in their annual reports (Fabricant, 1975).

It has also been mentioned in the other part of the Angola case, all the information on economic and technical nature should have passed to the nation (Sonangol) without any payment or refund (Angola, 2004).

HC is the owner of all of the information acquired through the license or by activities of E&P. as well as IOC permitted to use such information only during the validity of their contract (Article 20 of the Indonesian Oil Act) (Angola, 2004).

### *4.5. Effective Control*

IOCs are responsible for the management and control of exploration and exploitation operations. The full control of the IOC has based on the assumption that the host government does not decide to participate (Al-Emadi, 2010).

## *5. Service Contracts (SCs)*

The first service contracts have signed between 1991 and 1995, Venezuela (1991), Kuwait (1992), and Iran (1995). Subsequently, Iraq, Mexico, Bolivia, Ecuador, and Turkmenistan were also interested in using these types of service contracts. There are two types of well-known service contracts, “Risk Service Contracts” (RSCs) and “Pure Service Contracts” (PSCs). The difference between these two types of service contracts is in the type and method of reimbursement. According to this type of contract, IOCs must carry out a specific duty or technical service for the HC that is provided or completed within a specific period.

### *5.1. Pure Service Contracts (PSC)*

Indeed, the HC contracts with IOCs to carry out a determined service for a flat fee. Service contracts, in general, has been designed to develop oil reserves with risk.

There are two categories of PSC:

a. The service contract running parallel, this type of PSC has not connected purchase contract for part of the oil has produced from the field of operations to which the service contract relates.
b. This type of PSC not accompanied by any access to the oil has been produced under such a contract.

Some of the Persian Gulf countries and companies have used these types of contracts have included:
Saudi Aramco Company has been utilizing the type of a Risk Fee contract for exploration and Net Fee contract for production in this country. Abu Dhabi oil companies use contract type based on per barrel fee plus the right to buy part of its production. In Kuwait, the IOC provides technical support and support to the HC. The oil company will receive a discount on the purchase contract per barrel. Qatar pays for the technical and support services oil company through the produced barrels.

### *5.2. Risk Service Contracts (RSC)*

[3] The Sociedade Nacional de Combustiveis de Angola or Sonangol was created in 1976 as the national oil company of Angola. It is 100% owned by the State and serves as the business arm of the Angolan Government, being responsible for co-ordinating and controlling all petroleum activities. The enactment of the Petroleum Law (Law 13 of 1978) made Sonangol the sole concessionaire for oil exploration and production in the country. (http://www.mbendi.com/cosg.htm, downloaded 01.10.2010)

In short, an IOC agrees to explore a specific region and evaluate its potential for exploration. In RSC, the contractor accepts all costs and capital payments as well as operational risks. All costs will recover through field production. Possibly, in Latin America, these types of contracts are more popular (Coelho Neto, 1985).

The RSCs will be paid to the IOCs if oil operations lead to oil production. Although it does not have access to its production. Some lawyers consider the difference between these two types of contracts based on the type of payment received (for example, profit or fees). The method of remuneration, on the other hand, is either a percentage of the production (in-kind) or a fixed amount (cash) (D. Johnston, 1994).

Service contracts are the types of oil contracts in which IOC has considered as a contractor. In the event of the exploration of a commercial oilfield and the commercialization of oil production to the IOC is entitled to reimbursement of costs and receive profits for investments and services. However, if the oil is not exploration, the contract ends with no payment to the IOC; In this type of oil contracts, international oil companies accept all obligations, including Investing and providing services in the oilfield as well as accepting all financial risks of services in the contract, also They will not lose ownership rights in the oilfield or production of oil and gas. (Mikesell, 1984) Indeed, ownership of oil resources and reservoirs has belonged to the government or NIOC (Smith et al., 2010).

RSCs are similar to production sharing contracts, which means reimbursement of IOCs depends on the production (Rosado de Sá Ribeiro, 2001).

In the service contract, the HC has no control over the operations and has no role in investing. RSCs and PSCs have the same status in terms of operational control and oil ownership. One of the most important features of service contracts is that all petroleum deposits and oil produced have belonged and property of the HC at the wellhead. In this contract system, the IOC never obtain "property rights" in the reservoir. Accordingly, the legal position is similar to the US drilling contractor (Coelho Neto, 1985).

The IOCs act as contractors for the HC and as such, carry out in the name and on behalf of the (NOC), all operations necessary for the exploration and development of oil deposits. Also, the oil company must accept all financial risk. Based on Article 7.1 of the Argentine Risk Service Contracts:

"[t]o provide at its own risk and for its exclusive account the technology, capital, equipment, machinery and any investment that may have required for the due performance of the [c]ontract" (Smith, 1991).[4]

Early examples of SCs have created by Petroleos Mexicanos and Yacimientos Petroliferos Fiscales in the fifties, and by Iran and Iraq contracts in the sixties (Bindemann, 1999).

Service contracts, "the investor provides the entire risk capital for exploration and development, which is reimbursed with interest, in cash or part of the oil produced, if the field proves productive. it is a form of production sharing where the contractor is compensated only upon discovery" (Khan, 1988). The HC has the legal authority to attend in petroleum activities directly through its NOC. Also, HC can choose subcontract companies who have to specialize in E&P activities. At the time of signing a service contract, all risks of the exploration contract have been transferred to the IOC (Silva, 2010).

Article 2 of the 1957 Iranian Petroleum Act was a license for the use of date contracts in 1966 was an authorization for the use of service contracts in 1966.

Article 2 (*New directions in the law* of the *sea*309 (1973)) holds that:

> "[i]n execution of the provisions of this Act, the National Iranian Oil Company may negotiate with any person, whether Iranian or foreign, whose technical or financial competence shall have established,

[4] Risk-Bearing Service Contracts in Brazil, 3 J. ENERGY & NAT. RESOURCES L. 114 (1986)

> moreover, may conclude with such person any agreement which it deems appropriate, based on the terms and stipulations of this Act and other conditions not inconsistent with the laws of the country" (Judiciary, 1958).

The first service contract was signed between the NIOC and a French government agency (Enterprise de Recherche et d'Activite Petroliere (ERAP)) in 1966. Also, ERAP establishes a non-profit company under the name of the French company of Iran (SOFIRAN). Under the terms of the contract, SOFIRAN was called a general contractor, and it had been specific responsibilities (Article 2). According to article 3 of the contract, (ERAP) was obliged to pay the contractor's fees for financial and commercial technical services. The oil field was part of the Persian Gulf plateau and as well as three-part of the onshore. All oil produced under the terms of this contract will be owned by the NIOC at the wellhead (Article 6).

The second contract was signed in March 1968 between the NIOC and five European state-owned companiesو which have become known as the European Consortium. The sum of these companies was named European Group Oil Companies (EGOCO). In the case of structured ownership, they were utterly similar to the contract with the company (ERAP). Also, the operational area specified in the contract was in the Persian Gulf (Kashani, 2009). The third contract was signed in March 1969 between the NIOC and the American Continental Company.

Later, two other companies joined the second contract. In the triple contracts, the role of oil companies has considered as the contractor. (Rouhani, 1978) The significance of these contracts can have attributed to the fact that it was the basis for the 1974 Petroleum law and the buyback contracts after the revolution in Iran. The 1974 Petroleum law was a comprehensive law passed by the parliament. According to the third paragraph of Article 8 of this law:

The contracting party must establish an Iranian subsidiary. The Iranian company will carry out as the "General contractor" of the NIOC. The General contractor will be responsible for the exploration and development operations in a nonprofit and under the terms of the contract.

In Article 1 (3) of the Petroleum law of 1974, the ownership rights of hydrocarbon resources are as follows:
Iran's Oil resources and petroleum industry has been national. National Iranian Oil Company has the responsibility exclusively as an agency to the state to the governing of Iran's right to Iranian oil resources in the fields of exploration, development, production, exploitation, and distribution of oil throughout the country and the continental shelf. Hence, the NIOC can take action either directly or through its agents and contractors.

In paragraph 2 of Article 3:
The NIOC can enter into negotiations with any person, both Iranian and foreign, in order to carry out exploration and development of oil in the sectors of the country, and the (NOC) must sign contracts as contractual contracts. Therefore, according to this law, the only allowed pattern is the pattern of service contract (contractor). Moreover, from this date onwards, responsibility for approving and authorizing oil contracts from the parliament was delegated to the Council of Ministers.

In Article 19 of the Petroleum law 1974 has been stated about the ownership of the oil in the reservoir, all of Oil produced from Iran's oil resources owned by NIOC, Ownership of the not extracted from oil (In the tank) is not transferable to others by the NIOC.

Therefore, after the passage of the petroleum law in 1974, Contracts were signed under the title of the Sixth Contract of Service. The structure of these contracts was similar to the structure of the three previous contractor contracts. In these six contracts were a party to the NIOC. In all of them, it was stipulated to remain oil owned by the NIOC (Rouhani, 1978).

In this part, l have compared the contracts discussed above:

Table 1: Comparison of Oil and Gas Contracts

| Comparison Of Oil And Gas Contracts | | | | | |
|---|---|---|---|---|---|
| Contract-Type | Effective control of the production of petroleum | Management and supervision | Sharing interests | Major methods of technology transfer | The ownership of the facilities and equipment |
| Production Sharing Agreements | The contractor has ownership of part of the oil production (shared) | Government (only in regulatory terms) | The profits of the contractor are ownership of the part of the oil produced by the provisions of the contract | Participation and turnkey | ownership belongs to NOC after entering the country or installing equipment |
| Service Contracts | The host government has ownership of oil production (shared) | Jointly between the government and the contractor | The oil owned by the government and the contractor's cost has paid from the proceeds from the sale | Participation and turnkey | All equipment imported into the country will have done on behalf of the NOC |

Table 2: Comparison of Petroleum Contracts

| Comparison Of Petroleum Contract | | | | | | |
|---|---|---|---|---|---|---|
| | | Ownership of petroleum resources | Ownership of petroleum production | Control/field Operator | Risk | Compensation to oil Company |
| Concession contracts | | IOC | IOC | IOC | IOC | Not Applicable being Owner |
| Production Sharing Agreements | | IOC/HC | IOC/HC | IOC | IOC /NOC | Profit-sharing with HC |
| Service Contracts | PSC | HC/NOC | HC/NOC | HC/NOC | IOC has Exploration Risk | Flat Fee |
| | RSC | HC/NOC | HC/NOC | HC/NOC | HC has full Risk | Flat Fee |

**5.3. View of Religious Governance - Republican and Constitution from 1979 until now.**

The 1979 Revolution against the last Shah of Iran, which led to the establishment of a government focused on religion. This religious structure had a profound effect on all aspects of the system of government & law of Iran. Due to the formation of a new constitution have been creating significant limitations to the participation of the private sector in general, & foreign investors in particular, in economic activities. According to Article 44 of the Iranian Constitution, many sectors of the economy have nationalized (Ebrahimi and Nasrollah, 2006).

Factors such as previous experience in the oil industry during the last years of the Pahlavi regime, the historical roots of service contracts & oil production participation contracts ،as well as the religious structure of Iran's government & constitution are cause led to the emergence of buyback contracts & Iran petroleum contract (IPC) in Iran.

**5.4. Constitutions & supplementary laws derived from the religious view**

One of the essential principles that have changed with the establishment of the Islamic Republic of Iran & the constitution is the sovereignty & ownership regime of mines. These changes are the basis for the creation of

contracts in Iran after the 1979 revolution. Under Article 45 of the Constitution, Anfal[5] & Public wealth & property ..., Mines are in the hands of the Islamic government that utilizes them by the public interest.

According to Article 2 of the Law on Amended Petroleum Law, adopted by the Parliament on February 22, 2011, all oil resources are Anfal & public wealth. By Article 3 of the Act: The Supreme Council for Oversight of Oil Resources, Responsible for monitoring the exercise of sovereignty & public ownership of oil resources. Ownership of oil resources is Public ownership & private property is not possible & it is not possible to do it for private individuals to own itBy Article 44 of the Constitution, Major mines, including oil & gas, are part of the public sector, which is Public ownership & is at the disposal of the government. The implementation of general policies of Article 44 of the constitution in 2008: Oil & gas mines are part of the economic activities of the "3" group which according to paragraph (c) of Article 3 of the aforementioned law, it is exclusively for the government to investment, ownership & management of activities & institutions in Article 2 Group 3 (Shiravi, 2014). By Articles 2, 3 & 4 of the Mines Act of 1988 & revised in 2011, the concept of sovereignty has separated from the acts of ownership. Mines have divided into four classes. Applying Governance to Mines is in the sense of policing, regulation, & enforcement of them. The Ministry of Industry & Mines issues licenses for the use of mines, which Include exploration licenses & operation licenses. This license has given to individuals or legal entities authorized & competent. In this way, the legislator has tended in its evolutionary process, in the sense of public ownership & the Anfal of mines generally. From religious jurists suggests that there are several theories regarding the ownership of mines, which include: The theory of the separation of mines based on its location, mines (on the surface of the earth) & mines (the depths of the underground).

Mines on the surface of the earth (MSE) (معادن الظاهريه):

Mineral matter is on the earth, & its achievement does not require additional action or cost (Karaki, 1990).
Mines in the depths of the underground (MDU) (معادن الباطنيه):

To determine the nature of the material extracted from the mine requires special operations; this mineral is mixed with other materials to obtain it requires a lot of cost & effort (Al-Shafi al-Sahhir, 2012).

Some of the mines that are apparent such as the spontaneous outflow of oil from the ground, which is located in the lower reaches of the earth, & extraction of these requires the earth drilling; these mines fall into the category of (MDU) (Najafi, 2012).

Ayatollah Khomeini's view is that oil mines are (MDU) (Khomeini, 2013).

In total, oil mines are Anfal & they are at the disposal of the Imam (Islamic leader). The view of the jurisprudential regime has been emphasizing oil & gas mines are the Anfal. & the Islamic leader can allow another for the operation & extraction. This license is granted to another because of the public interest (Abdolrahim Moradi and Ranjbar, 2016).

Based on the interpretation of Jurists, Anfal perspective as Anfal & ownership of Imam on Anfal is due to the position of leadership & community management which is similar to the views expressed in the Common law & modern theories about regarding government ownership of the public property; it has interpreted as administrative ownership. Also, the theory is more compatible with Article 45 constitution (Katouzian, 1999).

With the interpretation provided of Ownership in Anfal, It is closer to the concept of ownership in common. The administration of both the regime (Anfal & the common public) by the Islamic ruler. It has been interpreted (public benefit) in modern rights (Abdolrahim Moradi and Ranjbar, 2016).

[5] In the definition of Anfal, it is said that the property assigned to the Prophet Muhammad & the Imams is called Anfal. The jurisprudential regime says about mine Anfal: 1. Private ownership of the mine is the ban, 2. because of Anfal belongs to the Imam, & Imam's permission is needed to use them.

Iran's supreme leader Ayatollah Ali Khamenei's statement on the general policies of Article 44 of the constitution & paragraph (c) the date 22/05/2005 & 23/02/2007: It has mentioned in the statement emphasis on the exclusion of Mines oil & gas, from the category of Privatization & private sector investment, especially the upstream sector oil & gas (Behrooz Akhlaghi, 2013).

It was during these challenging years that the United Nations passed its first Statement of permanent sovereignty over natural resources in 1952 (Schwebel, 1963). In another legal resolution, natural wealth has recognized as the national interest of that country in 1962. Because permanent sovereignty over natural resources, in addition to preserving national interests, It also causes safeguard the rights of all future generations & indigenous people, economic & social development, sustainable development, & the right to development, that all are by the principles of the United Nations (Miranda, 2012).

From the analysis of these events, it is clear that in global crises, it was presumed that IOCs would enter such crises & secret oil wars against the interests of HC. So it is a legitimate concern for governments to preserve ownership & sovereignty over oil resources because of their willingness to avoid engaging in a Cold oil crisis. Hence, the tendencies Resource nationalism & the establishment of National oil company's (NOCs) can be considered as a national response to the inappropriate influence of some of the great IOCs that threaten the sovereignty of countries (Madelin, 1974).

### 5.5. The historical trend of service contracts (contracting) & the emergence of new contractual generations after the 1979 revolution

Iran has a long history of oil contracts. In a classic classification of contracts, include Systems Concessionary, Production Sharing Contracts, & service contracts. The study of Iran's buyback contracts has shown; these contracts have been inspired by the pattern of pre-revolutionary (1979) service contracts. Service contracts have been introduced since the year 1966 in the Iranian oil industry, & since 1974, they have been considered as the only model of the authorized contract of Iran. The pattern of buyback contracts, influenced by three factors: the historical roots of contracts, religious views regarding sovereignty & ownership of the oil, & reform of the constitution after the revolution (Principles of the Constitution, Articles 80, 81 & 44).

After the Iranian Revolution from 1978 to 2018, we have faced with about four decades with two types of contracts based on the three above factors. Including

1. The first three decades - generations of buyback contracts 2- Fourth decade - The emergence of the (IPC) contract.

### 5.6. The first three decades - generations of buyback contracts

After the victory of the Islamic Revolution, due to the desire of the leaders to views the sources of nationalism, the attitude of the foreign investment relation was considered harmful. During this period, there were many requirements & restrictions on Iranian oil contracts. Between the years 1357 to 1373 were not signed, any contract for the upstream oil & foreign investment was only applicable to the downstream oil contracts sector.

The factors that caused the adverse effects & increased investment risks in Iran include US economic sanctions, executive constraints, & laws of Iran. During the Iran-Iraq War of 1980, the first attempts after the revolution to attract foreign investment to improve oil production (Azadi and Yarmohammad, 2011).

The 1977 Oil Act can have considered as the basis for buyback contracts. It was the beginning of the use of buyback contracts to preserve the principles of religious governance, the constitutional limitations, Annual budget Acts & rules of the five-year development program as well as the Petroleum Law, especially the Petroleum Law of 1987. Finally, in 2011, Article 9 of the Law on the Amendments to the Petroleum Law, canceled the Petroleum Law of 1977.

Permission to use buyback contracts has given in the budget Acts of 1993 to 2000, the rules of the second, third & fourth development plans, as well as the rules of the budget of 2000. The term buyback has first mentioned in the budget Act of 1994, which authorized the NIOC to use it (Ebrahimi and Nasrollah, 2006).

### 5.7. Generation of buyback contracts

A buyback contract is one of the type's service contracts. In this type of contract, the method of reimbursement of contractor costs is selling products from the field. Methods buyback in Iran is as a Non-borrowing investment method; it is a modified version of the buyback in other countries which conforms to the interests & needs of Iran & motivates IOCs to transfer their capital, technology, & know-how to Iran (Fard and Kavyar, 2010).

Types of buyback Contracts

1- Development or exploration contracts, the main feature is Contract cost has been determined constant & it has considered for the exploration or development of fields.
2- Combined Contract Exploration & Development of fields, Contractor of Exploration Projects will earn to authorize entered into development operations directly & without a new contract if they succeed in discovering the hydrocarbon reservoir (Green Field) & the oil reservoir be commercial. (The maximum cost of the contract has been determined & fixed).
3- Development contracts & Combined Contract Exploration & Development of fields that the amount of the contract will have determined by holding tenders at a specified time after confirming the validity of the contract (Fard and Honary, 2016).

### 5.8. Ownership & sovereignty in buyback contract

According Article (3) of Iranian Petroleum Law Approved(1974) Oil & gas resources & the petroleum industry have nationalized in Iran, & that all activities include exploration, development, production, distribution of oil & gas & the marketing must carry out exclusively by NIOC throughout Iran, the NIOC must act directly or via its agents & contractors.

IOCs must accept the primary condition in the contract buyback for cooperating in the oil fields of Iran including Condition of Supply & pay all costs of the project Capital costs (Capex), Non-capital costs (Non-Capex), Operating costs (Opex), Bank charges) & accept all operational risks. Finally, the Iranian government will pay off the profits from the production field to the IOC. In Section 3, Paragraph (c), Article 3, One of the Responsibilities & Authorities of the Ministry of Petroleum (2012) in investment & financing:

Attracting & directing domestic & foreign capital to develop hydrocarbon fields with the priority of Common fields via the use of new contractual patterns, including co-operating with investors & domestic & foreign contractors without transferring ownership of oil & gas in reservoirs.

The analysis of these Acts shows that

1- Ownership of hydrocarbons owned by the state until it is in the tank (underground).
1. 2-The ownership of all products resulting from the operation belongs to the NIOC.

By the pattern of buyback contracts, Ownership of oil products in the fields of Iran has been transported to IOCs neither at the wellhead nor at an export point (Ebrahimi and Nasrollah, 2006).

Because the legislator's assumption of buyback contract is a type of service contract. According to Article 153 of the Iranian constitution, any form of the agreement resulting in foreign control over natural resources... . is forbidden. One of the examples of controlling natural reserves is the possibility of booking petroleum products by IOCs. Thereby there is no possibility of booking oil reserves in the assets of IOCs. The first Iranian buyback contract was between the NIOC & an American company (Conoco Oil Co). However, this contract canceled because of the sanctions against Iran by the United States as of President Clinton. The French company (Total SA)

accepted the American company under contract with the new terms; it has carried out the first Iranian buyback contract (J.H. and van Groenendaal, 2006).

The Sirri (A) oil field project was the first major project of the type of contract buyback; it was carried out in Iran (Amani, 2009).

**5.9. Technology transfer in buyback contracts**

1- First & second generation buyback contracts

The transfer & development of technology in the first & second generations of the buyback contracts have only contained in article 13, & it was very brief & there was much ambiguity (Ebrahimi and Khoshchehreh, 2015). Accordingly, the IOC is required to do the following in the contract:

A. Priority employment of local experts & Human resources (Guidance, training, & promotion of technical knowledge & skills of Iranian trainees);
B. Provide a training program tailored to technology & technical knowledge;
C. Agreement on the type of training & level of training with the HC;
D. Provide conditions for the supply of materials & services for goods based on a comprehensive development plan designed to maximize the use of domestic capacity.

2- Third generation buyback contracts

Includes the following two attachments:

A- First appendix, IOC must the transfer of technology to the HC This method has been used for the first time in the Yadavaran field contract; the appendix has provided a list of the general needs of the upstream technology of the oil industry.
B- In the second appendix, IOC must use the maximum of the domestic capacity of the HC. Based on this, domestic companies will be corporate & carry out with IOC in the exploration & development of Iranian oil fields.

A committee has been set up with the purpose of monitor the good faith of the contractor's obligations. The committee responsible for scout, control & monitor the program by the appendix (Ebrahimi Seyyed Nasrallah, 2014).

**5.10. Analysis of the weaknesses of buyback contracts**

1. The fixed rate of return on capital;
2. Non-flexibility of the terms of buyback contracts & their lack of anticipation;
3. The short period of buyback contracts, for this reason, IOCs did not the motivation for technology transfer;
4. Because the HC takes control of production & exploitation, IOC reluctant to use superior technologies;
5. The contract duration is 7-5 years. The contractor could only be present at the stage of development & exploration, & at the stage of exploitation of the field carrying out by the NIOC;
6. After the product reaches the specified level specified in the contract for 21 days of 28 days, the contractor will have not responsible for the drop in production during the operation period. In practice, the IOC to achieve the level stipulated in the contract may be used inappropriate & Non-standard in Maximum Efficiency Rate (MER) reservoir protection methods to production, Due to the short time that has been set in the contract.

Table 3

| Generations buyback | Year | Duration of contract | Contractor Operations Center | Maximum use of Iranian experts | Transfer of technology | Maximum Efficiency Rate (MER) |
|---|---|---|---|---|---|---|
| First-generation | 1994 | Development Contract 4-5 years, Repayment of Cost 7-9 years from the end of the development operation, Exploration operations for 3- 4 years. | The IOC must register a branch office in Iran for doing business, such as tax & office administration. | The IOC is required to do it. However, there is no encouragement or penalty for the IOC. | Not specified | The IOC is only must use conventional international methods in the oil industry to produce hydrocarbon at the most efficient & effective level. |
| Second generation | 2003 | Combined with the exploration & development of 25 years | The IOC must register a branch or company in Iran in order to manage all petroleum operations in Iran, Management & administration of operations & maintenance of offices, accounts & taxes, duties, etc. | The IOC must fulfill the condition of the assignment & use of (Capex) of the contract for this division. (Maximum of 51% of the capital costs). & just a penalty has been set for the IOC to Breach of obligation. | The main contractor & subcontractors must be required to transfer technology during the contract period to the NIOC. | The IOC is only must use conventional international methods in the oil industry to produce hydrocarbon at the most efficient & effective level. |
| third generation | 2007 | The contract for the development of the field in a phase of about five years With a repayment period of about 15 years | Only Iran will be the center of all operations (administrative, executive, financial, technical, etc.) | The IOC must fulfill the condition of the assignment & use of (Capex) of the contract for this division. (Maximum of 51% of the capital costs). & penalty & rewards have been set for IOC. | The IOC must transfer the latest technical & industrial achievements, including technical knowledge, or transfer the technical knowledge in the property, by the instructions set out in the annex to the contract. | Conditions have negotiated before the contract With the title of Total Reservoir Management, optimizing reservoir management & (MER) items will be agreed upon by the parties. |

### 5.11. The fourth decade- the emergence of an IPC contract

Iran accordance with paragraphs 14 & 15 of the document approved by the cabinet, titled "General Conditions, Structure, & Pattern of Upstream Petroleum Contracts" (2016), Government policies are increasing oil & gas production capacity to influence the global oil & gas market. As well as emphasizing the preservation & development of oil & gas production capacity, particularly in Common oil fields. The government also seeks to increase value-added through the completion of the value chain of the oil & gas industry, the development of products with optimal performance based on energy consumption & increase electricity exports, petrochemical products, & petroleum products emphasize the MER of resources & technology transfer. Accordingly, IPC contracts in the fourth decade after the Iranian revolution have been designed to achieve these goals.

IPC is the latest type of upstream oil and gas fiscal regime; it has described as the contract is a combination of Buy-Back (contract services) and Production Sharing Contract (PSC).

Transfer of technology & Create local capacity are among the strategic objectives of the IPC. To achieve this goal, IPC has a basic reward system that allows increased costs per barrel will pay to the IOC. This model has been designed to encourage the IOC to extend the latest technological advances in field management, optimization & production. The term of the contract is 25 years. The ownership of petroleum products belongs to the Iranian government. Ownership of Common property belongs to the project. In the IPC contracts, the NIOC & the IOC have been a (JV) & operate jointly. NIOC has the role of manager & monitoring operations as the project owner. IPC contracts have used the structure of JV for carrying out petroleum operations. Its duration is between 7 & 9 years in the development & production phase that has considered between 20 & 25 years. & in the mechanism of reimbursement of costs, the structure is similar to the participation in production (Allocate a portion of the oil produced has intended for payment to the contractor). Indeed, with the establishment of numerous companies, efforts have been made to reinforce learning in practice, whereby the HC will achieve aims related to oilfield management training & technology transfer (Norouzi, 2015).

Table 4

| **Contracts based on the IPC** | | | | | | |
|---|---|---|---|---|---|---|
| | Date | Party company Contract | The share of the parties | Oil fields | Goals Contract | Contractual feature |
| 1 | 2016 | NIOC & Persia Oil & Gas Industry Development Co (a subsidiary of the Executive Committee of the Comm& of Imam Khomeini) | ---------- | Oil fields: Kupal Asmari; Kupal Bangestan; Maroon Bangestan; Joint area of the Yaran (with Iraq Majnoon oil field). | Recovery recovery; The development of joint oil & gas fields. | Iranian companies should choose foreign partners, IOCs tender winners are required to introduce an Iranian company as a partner. |
| 2 | 2017 | NIOC & a consortium of companies Total & CNPCI & Petropars Company | Total (50.1%) CNPCI (30%) Petropars ((%19.9 | the 11th phase of the South Pars | Oil Field Development | Remove stage (FID) of the contract; The right to withdraw due to lack of an economic feasibility plan is not possible for foreign companies after signing the contract; If IOCs, without the enforcement of (U.N.) Security Council sanctions, announces that it has the intention to leave the contract, no capital has returned to this company & no sum has transferred to the company. |
| 3 | 2018 | Between the NIOC & the Consortium consisting of Zarubezhneft & Dana Energy Iran | Zarubezhneft (80%) Dana Energy Iran (20%) | Aban oil field & Paydar-e Gharb field (Both fields are jointly owned by Iran & Iraq) | Improved Oil Recovery (IOR) & increase production fields | The main purpose is Technology transfer; Knowledge management & financing; plans to increase production through Improved Oil Recovery (IOR) |

### 5.12. Causes & objectives designing of IPC

*5.12.1. Non-attractiveness of buyback for foreign investors*

The buyback contracts have not enough attractiveness for foreign investors, Because of the presence of models of more attractive contracts in the area such as Iraq contracts. It has caused new model contracts to has placed on the agenda of Iran; firstly, they have enough attractions for foreign investors; second, those contracts can compete with regional countries, especially for the development of common oil fields. Some experts believe that the IPC contract of Iran is such as the Technical Service Contract (TSC) of Iraq. Because of the similarity in the distribution of benefits in the contract (Sahebonar et al., 2016).

Because in this contract, the contractor's payments are made solely on the oil field's income. It is somewhat similar to the contract of PSC, although ownership has not been transferred.

The contractors will receive all operational costs of the contract (operating costs of the prime period of development & Capex & Non-Capex) & the period of exploitation from the oil produced from the field until the end of the contract period. The reason is the encouragement of the contractor to carry out the best ways to recovery & efficiency factor of the field (Abbaszadeh and Abbas Maleki, 2013).

In contrary to Buy-back contracts in which the IOCs were absent in the production period, in IPC the IOCs will be present in all of the exploration, development & production phases (Sahebonar et al., 2016).

Also, the parties' contract will establish a joint operating company (JOC) for carrying out the production stage. These contracts are applicable & suitable for Greenfield & Brown Fields.

In a simple analysis, one can say, the essential aspect of the IPC's differentiation with buyback contracts is the presence of the contractor during the operating period as well as the long-term duration of the contract period & these contracts are applicable for high risk, medium risk, & low risk. The contractor's wages have based on the amount of production from the field, which is related to various factors such as oil price, R-factor, production level & type of field (Fard and Honary, 2016).

*5.12.2. Create effective contracts for technology transfer & Maximum Efficiency Rate*

According to Paragraph 7 of Article 1 of the Law on Amended petroleum Law, adopted in 2011:
MER & production of hydrocarbon reserves include all activities & operations that lead to the optimal & maximum economic recovery of production from the country's oil resources over the lifetime of the resources, & these activities will prevent the loss of reserves in the oil cycle based on approved policies.

Some factors that reduce the annual production of reservoir oil are including
Increasing the age of the tanks & entering the second half of their lives, failure to implement appropriate technical & management policies to maintain reservoir pressure & Keep up the pressure in the tank (Abbaszadeh and Abbas Maleki, 2013).

The IOCs reasons for being the impossibility of optimal production & long-term reservoir development in the buyback contracts are as follows:

1. Buyback contracts are for exploration or developing the field (build & transfer (B &T)) until the time of production oil, & after this stage, the IOC must leave the project & NIOC will become as an operator, & the role of the IOC will reduce & limits as a provider of services & technology.
2. NIOC has incapacity & Lack of sufficient knowledge in the management & preservation of the oil field.
3. Tanks always have required new investments due to changes in the behavior of the reservoirs during the production phase (J.H. and van Groenendaal, 2006).

To address these deficiencies in the IPC contracts have been the following is predicted:

1. IOC intervention in the production phase;
2. Contract duration is Long-term;
3. Cooperation & participation of the Iranian company in all stages.

These conditions are the mechanism to ensure the correct & complete transfer of technology to Iran by the contractor. The contractor is present in the operation stage & they will enjoy the fee this step. The fee & profit of the contractor is related to the amount produced from the field directly. The contractor must carry out best efforts to maximize the cumulative production of the field during the duration of the contract by the standards of field protection.

Also in the IPC will be used to improve & enhance the recovery process from the reservoir (Improved Oil Recovery (IOR) / Enhanced Oil Recovery (EOR)).

The EOR methods have been divided into primary & secondary recovery processes, including tank pressure stabilization with water or gas injection & recycling processes of mixing & non-immersion injection methods, chemical methods & thermal methods & the different use processes to increase retrieval.

The IOR is all the processes, including technologies, intelligent reservoir management, & control, advanced reservoir monitoring techniques that accelerate the production & enhancement of withdrawal of residual oil (Alvarado and Manrique, 2010).

**5.13. Advantages & features of the IPC contract**

- The program & budget of the project are determined annually based on the reservoir behavior & project realities;
- All projects & (Capex) will pay off the oil produced from the field. The maximum payment time will be between 5 & 7 years;
- In the contract has been created a positive balance between the risks & revenues of the parties in the project;
- The investor's profit (bonus) will be paid for production & calculated based on per barrel of oil or one thousand cubic feet. Due to fluctuations in the price of oil in the market, a percentage (amount) of the contract has been intended to control it. Given the fact that each oil field has different risks & conditions, the profit level of the fields will also be considering different.
- This type of contract is usable in high-risk areas & deepwater (exploration, development, production);
- IOCs have a chance of exploration in the side blocks in the event of the failure in exploration;
- The flexibility in the contract means is Long-term cooperation through the formation of a joint venture, the operation structure, & joint management by the joint management committee of the contract;
- Flexibility to increase collaboration time at the production & development stage will be through the carrying out of (EOR) techniques;
- It is possible continuity of all operational steps (Exploration, Development, & Production, EOR & IOR) in the contract (Fard and Honary, 2016);
- The IPC contract has dedicated some terms of Social corporate responsibility. IOC will be committed to building hospitals or centers of social services in regions & towns adjacent to the reservoir oil production (Talebian, 2015);
- In IPC, the exploration/evaluation phase is four years plus two years for the development phase;
- In IPC, the phase of development & production is 20 years (plus five years of development for IOR / EOR).

In general, buyback & IPC contracts have been classified in the service contract. Consequently, they follow the principles of service contracts.

### *5.14. Control over ownership of oil in place or oil reservoirs*

According to a Service, the Contract has determined total ownership of the petroleum resources and all assets with the HC. Economically, under Service Contracts, the HC gets the maximum return than other petroleum contracts because the government has exclusive power overproduction. In paragraph (c) of Article 11 are listed: oil, gas ، gas condensate, and other materials in the reservoirs based on the contract are wholly owned by the Iranian government. The right of sovereignty over and public ownership of all oil and natural gas fields or reservoirs is vested in and is to be enforced by the Ministry of Petroleum as the representative of Iran. According to Article 3 of the IPC by-law approved by the Council of Ministers on the general conditions, structure, and model of upstream oil and gas contracts (2016): The Ministry of Petroleum is the official representative of the government to apply sovereignty and public ownership over wholly Iranian oil and natural resources and reserves.

### *5.15. Control over ownership of oil and oil products*

According to IPC terms, in paragraph (c) of Article 11 are listed: oil, gas ،gas condensate, and other materials in the reservoirs based on the contract are wholly owned by the Iranian government. However, the oil, gas and condensate, and other products of production belong to the employer or client. In the IPC contracts, like other service contracts, the ownership of reserves and oil production will not be transferred to the contractor at the wellhead. However, this case can have examined in several ways.

1. Some analysts believe that in the Contract IPC have been implicitly mentioned Reserves Booking, and it is legally available to IOCs as well. Although Iranian officials have stated in this, the contract will be paid in cash (USD). However, the same as the buyback contract, this payment can be considered as a contract for the purchase and sale of oil, which is one of the annexes to the contract, it is a commercial transaction, and it has a delivery point. It means that it is not possible to transfer ownership of the oilfield and production ownership to the IOCs (Fard and Honary, 2016).
2. However, in paragraph 3.1 of Approved of the Cabinet of Ministers of Iran of 2016, the sovereignty and ownership of property are reserved for the government. However, it has not has determined, The costs and Compensation of IOCs caused by the actions of the government in the application of sovereignty and ownership on the property, which must pay all of these costs to the IOCbased on the principle of reasonable expectations. One of the essential reasonable expectations for a contractor in this contract is to receive a specific wage from per barrel of oil or condensate. If the government want to apply of sovereignty in contract, for any reason other than technical reasons, decides to reduce or stop the production of the field, it is possible for IOC claim & demand for all the wage that could have received during the period of production stoppage. It indicates that the IOC has a legal right to oil produced from the reservoir, which is proportional to the amount of volume of oil in the tank and the recovery factor. (Fard and Honary, 2016).

### *5.16. Control over ownership of oil in place or oil reservoirs*

According to IPC terms, In paragraph (g) reads: All operations of the contractor will have done on behalf of the employer on the date of commencement of the contract, all property as belonging to the employer from the date of the beginning of the contract, including buildings, goods, equipment, wells and surface facilities and subsurface. According to the IPC, technology and knowledge are in the category of property to be transferred by the IOC to Iran based on the contract. Consortium and JV contracts are among the best ways to transfer technology to upstream oil contracts. Establishment of Iranian and foreign joint ventures E & P has selected for technology transfer as the primary solution at IPC. it is the way to attend IOCs in all stages of exploration, development, and production integrated with the participation of Iranian companies. The creation of JV is due to cover the weaknesses in the supply chain covering the upstream oil industry. Impact of IOCs Obligations on Investment in Technology with the participation of Iranian companies, universities, and research centers of Iran is as follows:

1. The ability to transfer hard technology;
2. The possibility of transferring management of soft technology;
3. Merge of Mega petroleum projects through rotational management and E & P companies (Emadi, 2015)

Technology transfer in IPC contracts has predicted in four ways:

1. Cooperation and Participation of the Iranian party with a credible foreign company and the foreign company must provide a technology transfer and development program.
2. The foreign company must maximum use of the technical, engineering, manufacturing, industrial, and executive capacity of the HC (at least 51%).
3. The foreign company must use the maximum domestic human resources in the carry out of the contract; the foreign company must offer a comprehensive training program to improve the quality of these domestic human resources and carry out the necessary investments.
4. Management positions in the production period are circulation between the parties. Also, executive management positions must have gradually transferred to the Iran party.

IPC contracts have a new vision at technology transfer (soft and hard). Soft technology is the management skills needed to utilize the hardware. Soft technology is the conscious use of general laws or economic, social, instrumental, institutional, methodological, and procedural experiences, which contribute to the development, adaptation, or control of the internal and external world. However, hard technology without soft technology does not produce much-added value. Hard technologies need to be integrated with soft technologies to reveal their economic and social value (Jin, 2011).

### *5.17. Control over ownership of information and data*

The oil and gas industry can achieve innovation through "data democratization."

Usually, the data collected at the exploration stages are analyzed before the decision was made for drilling oil wells.

Data democratization is the process of creating value from all the data and creating an accessible database in order to create new patterns of data for obtaining more knowledge.

In the oil and gas industry, data has been considered as property, and data ownership has been identified in the contracts.

According to the rules of Iran and the terms of the IPC contract, data and information are the property categories. Due to factors such as bilateral or multilateral contractual agreements, storage policies, the fear of disclosure of information, and the access and profitability of competitors from data, data have been kept confidential usually.
Each oil tank has a life cycle. Using and connecting data from one or more wells in the same field (especially common oil fields), host countries, and IOCs can achieve better results and more valuable. (Bagherian, 2015)
In the IPC contracts, information and data ownership is owned by the NOC or the host government, like the service contract.

### *5.18. Effective Control*

Under IPC contracts, reservoirs, and all oil products have owned by the HC. Analogous to buyback contracts, the HC has the right to attend and monitor and manage all phases of petroleum activities. It is also the right to sell and sell petroleum products on the domestic and international markets for the HC or its representative. In practice, the IOC has the role of contractor in the oil project. Moreover, the ultimate and effective control belongs to the HC.

Table 5

| contracts | **The structure of technology transfer in Iran's oil contracts1901-2018** |
|---|---|
| Concession contracts | Not specified |
| Production sharing | The soft technology transfer |
| joint ventures | The soft technology transfer, but its speed was dependent on the operating agreement |

| | |
|---|---|
| Service contract | The human training resources |
| Buyback First-generation | Not specified |
| Buyback Second generation | In one of the terms of the contract, the contractor (primary and secondary) must transfer technology during the contract period to NIOC. |
| Buyback third generation | The contractor must carry out some subject, including :<br>Transfer technical know-how and the latest technical, industrial, and technical knowledge, human resources training, and the maximum use of the HC's capabilities in designing, constructing, and installing equipment and machinery.<br>For the first time, the instructions for this have been one of the annexes to the contract, and the contractor must perform this assignment, including :<br>Staff Training of NIOC;<br>Active participation of experts in various activities related to the agreement;<br>Recruiting Iranian experts;<br>Assignment of a license ;<br>Preparing documentation and booklets for activities;<br>Participation of Iranian contractors;<br>Joint Research and Development and cooperation with research centers of this field have been controlled by the Subcommittee on Joint Technology Transfer Management. |
| IPC | Establishment of a joint Iranian-foreign JV with the project's rotating management in (JOC) joint operation and soft technology transfer;<br>The presentation of the program of technology transfer and development as part of the annual operational, financial plan requires the maximum use of technical, engineering, manufacturing, industrial, and executive capacity of the HC under the law and rules;<br>The joint ventures of this model have shifted the direction of technology transfer from buyback to FDI;<br>Accordingly, it is possible to carry out research, development, production, and production through JV, also strengthening the networking process In the transfer of innovation by JV. |

**6. Joint Venture (JV)**

In 1957, the first generation of the JV in the Middle East was signed by the Italian National Oil Company through AGIP with Iran and Egypt (Suleiman, 1988).

Crommelin has stated the definition of a JV in the oil and gas industry:
"The mineral and petroleum JV is an association of persons (natural or corporate) to engage in a common undertaking to generate a product to be shared among the participants. Management of the undertaking has divided: specified activities are to be performed by a designated person (the operator or manager) as agent for the participants; the power to determine certain matters is vested in a committee (the operating or management committee) upon which participants are represented and entitled to vote in accordance with their interests in the venture, and other matters are decided at the outset by the participants as terms of the association. The relationship among participants is both contractual and proprietary: the terms of the association are fixed by agreement, and property employed in the undertaking is held by the participants as tenants in common" (Crommelin, 1986).

According to the Courts of Canada, a JV is:
"contemplates an enterprise jointly undertaken, that it is an association of such joint undertakers to carry out a single project for profit; that the profits are to be shared, as well as the losses, though the liability of a joint adventurer for a proportionate part of the losses or expenditures of the joint enterprise may be affected by the terms of the contract" (Barker, Graham Edward and Seccombe., 1973) (Grant, 2012).

JV has been made based on the concept of production partnership contracts. There are some components of production partnership contracts in the current JVs. For instance, the existence of a joint management committee in the structure of this partnership, which includes capital costs, operational costs, and control and monitoring of exploration and development activities. There is also an operational committee responsible for the implementation and coordination of oil operations. (Suleiman, 1988)The operator may be one of the participants. A subsidiary company is to act as an operator to implement a project or formation of the company. Each of the shareholders has a share in their interest in the project. Sometimes the operator in the JOA acts as an agent or representative of the participants. JV assets have considered common shares which maintained by the operator as a representative of the participants. The operator is an agent of the participants (H. Kevin McCann, 1982).

Some of the reasons behind the tendency of developing countries to abandon traditional CAs and tendency to other contracts, such as Joint Operating Agreement (JOV) are:

1- The flaw of the traditional CAs for the HC to have effective control over petroleum resources, products, and activities, Low-income HC of oil fields;
2- Increasing NOC Knowledge and Skills;
3- Establishing an OPEC organization and enhancing the negotiating ability of OPEC member countries, and the emphasis on the principle of "changing circumstances."
4- Approve the United Nations Resolutions on the principle of permanent sovereignty over natural resources.

From 1967 until 1973, the idea of “participation” in the oil and gas industry had received considerable attention by OPEC and its member states supported by UN Resolution 2158 (XXI) concerning the principle of permanent sovereignty over natural resources (Al-Emadi, 2010).

The aim of countries to use JV contracts has included

1- Sovereignty, ownership, and effective control over petroleum resources;
2- Control over oil operations;
3- Profit and more financial returns than sales of petroleum products;
4- Transfer of technology in petroleum contract;
5- Training nationals working in the oil industry;
6- Direct and easy access to international petroleum markets (Al-Emadi, 2010).

Elements of Joint Venture:

1- The venture should be a specific commercial project;
2- Joint Ownership of Assets;
3- Joint investors should be able to participate in managing and controlling joint ventures (Wilkinson, 1997).

there are different categories for Joint Ventures, including Considering legal issues, structure, and frameworks.
First- JV category included is:

1- 1-Incorporated joint ventures (IJV)
2- 2-Unincorporated joint ventures (UJV) (Bean, 1995)

Second- Joint Ventures can be divided according to the structure including:

1- 1-Contractual Joint Venture (CJV)
2- Joint Venture Corporation (JVC)
3- Joint Venture Partnership (JVP)

One of the reasons for diversification in the form of a JV is often to depend on considerations such as taxes and the ability to limit liability to third parties. (Grant, 2012) Activity petroleum operations business investment. This activity can be shared among IOCs to produce commercial oil (Kaasen, 2001). These business relations IOCs are based on an agreement between the parties with the HC and commonly known as the Joint Venture Agreement (JVA) or Joint Operating Agreement (JOA). JVA is a framework for conducting petroleum business, activities, and decision making through a JV management committee .The government grants a license to determine the scope of petroleum activity. This license is including the rights and interests of the partnership. JVA guarantees

that the rights and responsibilities associated with the license to share with members. JVA governs over the licensed petroleum through the appointment of an operator (Kaasen, 2001). Regularly JOAs used in offshore and international operations, where costs and risks are high, usually go much further in requiring non-operator approval or consent to decisions.

### *6.1.First- JV category*

6.1.1. Incorporated joint ventures (IJV)

Governments control this type of JV through the utilization of specific regulatory rules and regulations as a condition for issuing production licenses. These mandatory terms of the JOA are part of a regulatory arrangement that authorizes the HC to regulate all aspects of petroleum development and production. For instance, IOCs are authorized to operate in Norway by Section 3-3 of the Petroleum Activities Act 1996 joint operation agreement (Norway). These activities have been controlled by the government through the issuance of production licenses. (Directorate, 2008)

Norway's most significant regulatory issues are:

1. The JV was formed by the Norwegian government. Through the JOA, the government determines all oil activities conditions, including JV management, oil activities, responsibility, risks of the field, and financial facilities development;
2. The government determines the operator for the joint venture; the government will be able to control the development of oil resources.
3. The government has the legislative capacity to select the participants of a license. Companies authorized to develop and produce oil have been selected by the Norwegian Petroleum Directorate (NPD). The NPD examines environmental and socioeconomic factors in exploiting oil resources section 3-4 and 3-5 of the Petroleum Activities Act 1996 (Norway);

The Norwegian government can regulate petroleum activities in the sustainable exploitation of oil resources in compliance with Norwegian oil policy to increase by utilization of JOV (Hunter, 2010) (Arnesen, 2007). The Norwegian government, through the JOA contract, to regulate and control the activities of oil as well as the relationship between the participants in the petroleum activities. ( Art. 15-17 of the Joint Operating Agreement (Norway)) (Directorate, 2008) A method of controlling oil activities is by the Norwegian government through the Management Committee, which is part of the Norwegian JOA.( Art. 1.3.) The Norwegian government regulates the activities of the oil industry through regulation of oil through regulatory powers, administrative bodies, as well as the licensing of participation in the oil industry activities in the Norwegian continental shelf (Nelsen, 1991).

6.1.2. Unincorporated joint ventures (UJV)

In this type of contract, the government does not participate in petroleum activities. The government has no legal role in regulating oil development. It means that (of an oil company or other organization) not formed into a legal corporation for activity petroleum. In this type of contract, all agreements have been privately negotiated between the JV parties, and the government does not have any role. There are no government regulations for the establishment of JV. For instance the Australian JV Agreement. The Australian Government has no role in the petroleum activities, but the JVA requires legitimate passage for the project and activity JVA has been under Legal obligations outside of the JVA, for example, Trade Practices Act 1974 (Cth), OPAGGSA, and common law fiduciary duties. JV marine development activity is under the auspices of the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth); after then, JV has been approved by qualified authorities. At this time, the JVA regulates the relationship between participants in the JV and the development of oil resources.

Model JV in Australia (UJV) is a legal relationship for oil activity in a specific region based on a special license in which parties to contract make a contractual relationship without forming a distinct legal entity. (Petroleum, 2009) In the Australia JVA, it has determined that the interests of the parties in the contracts, stocks, and interests

of the shareholders as well as the legal rights between the parties as joint tenants and determine the specific production ratio separately to the account of the parties (Jaques, 2005).

The Australian Government Parliament has passed regulations for offshore oilfield operations in Western Australia through non-compulsory State Agreements. These Agreements are a contract between the HC and supporters of major resource projects; this project is including mining and oil, offshore, and offshore. (Petroleum, 2009) These rules and regulations determine the framework of the obligations, terms, and conditions of project development for the continuous relationship and cooperation between the HC and IOCs. These governmental agreements are a mechanism that facilitates and guarantees long-term assurances, land tenure, the development of specific long-term projects, the security of tenure, and sovereign risk reduction for IOCs (Western Australia Department of Industry and Resources, 2007).

The goal of Australian oil policy is the sustainable development of oil resources; The Australian government has no legal capacity to influence the decision making, conduct, and policy of investors in the joint ventures (Arnesen, 2007).

The features of this type of government agreement are that:

1. Reduce a large amount of legal pressure and controls on IOCs;
2. Reducing the being responsible and costs of IOCs, These leads contribute to the sustainable economic development of offshore oil resources:
3. The government agreement encourages oil companies to invest in Australia due to a lack of legal, contractual relationships between the license and the HC. (Hunter, 2010)

There is a history of using these types of government agreements in other countries' contracts, for example, the Anglo-Persian Oil Company Limited's (Private) Act 1919, British Imperial Oil Company, Limited (Private) Act 1925, Commonwealth Oil Refineries Limited (Private) Act 1940 and Texas Company (Australasia) Limited (Private) Act 1928.

### *6.2. Second - JV category*

#### 6.2.1 Contractual Joint Venture (CJV)

The first CJV contracts were used in the United States onshore, in which a model has proposed by the American Association of Petroleum Landmen. This type of structure was introduced in the Middle East by the agreement between the NIOC and AGIP, Philips, and the Oil and Natural Gas Commission of India in 1965 (Hossain, 1979). In the current period, CJVs are the most popular type of JV in the oil and gas industry (Hossain, 1979). For example, this model contracts more utilization on the continental shelf of the UK (Black and Dundas., 1992). JOAs are a mechanism through joint ventures to the operation of oil and gas resources. JOAs generally include an operator responsible for exploration and development operations under the supervision of the operational committee. As a result, JOAs create a structure that is in the form of a partnership, which is based on the contract. The Operator can be one of the co-venturers (usually the one with the most massive participating interests), a stranger (a company not associated with the co-venturers), or an Operating Company established by the co-venturers (Merralls, 1980).

The features of this type of contract:

1. In this type of contract, a contract governs the relationship between investors and their contractual obligations, and No separate legal entity has created in this type of contract Unlike a JVC or JVP;
2. Parties have determined the governance structure of JV; it will be entirely customized by them;
3. Capital and assets allocated in this type of JV are remain owned by the parties themselves (Grant, 2012).

### 6.2.2. Joint Venture Corporation (JVC)

The IJV has governed by the corporation law of the relevant government (Al-Emadi, 2010). The feature of this type of JV is that asset investors will participate in their participation, since then the partnership is the ownership and control of assets. Moreover, it is not necessary to state the objects of the corporation. In this type of joint venture, investors are joint stockholders and have limited liability. In the tax viewpoint, the JVC has identified to be a separate legal entity and states that taxpayers are distinct from JV (Grant, 2012).

### 6.2.3. Joint Venture Partnership (JVP)

Unincorporated joint venture partnerships have been governed by the partnership laws of the relevant state. ( The New Legislation (2001); and U.S. Uniform Partnership Act 1914 (Revised 1994 and 1997), and Uniform Limited Partnership Act 1976 with 1985 Amendments). A partnership can take one of two forms. In a general partnership, all parties are personally liable for the debts of the partnership. In a limited partnership, at least one general partner has unlimited liability, while dormant partners have limited liability but no rights to control or manage the business. The oil and gas industry prefers general partnerships. Provincial partnership law has governed on JVP. In this type of JV, each investor is the principal and agent of another investor, and they should be the best function as investors' representatives based on the interests of participants (Alberta Partnership Act, RSA 2000, c P-3, s 1(g)).

### *6.3. Control over ownership of oil in place or oil reservoirs*

Most exclusive ownership of petroleum resources is for the government except for some countries such as America. According to US law, the owner of a land is also the owner of oil and gas on the land. (Meyers, 1956)In the JV, sovereignty over oil resources has belonged to the HC.

### *6.4. Control over ownership of oil and oil products*

The government grants ownership rights to third parties (IOCs) for exploration, development, and production activities through the issuance of oil licenses as the owner of the oil resources. Granting a license to operate oil by the HC creates ownership rights between the government and the IOCs, which leads to the exploitation of oil through the establishment of JV.

The licensee is an exclusive right to the specific area specified in the authorization. The HC has the right to transfer ownership of the land to others when the license expires. This right is transferable and can have sold.

The transfer of ownership of oil has been determined in a joint operation agreement (JOA). Each of the parties to the partnership has a certain amount of rights, responsibilities, and shares, in which the share of the parties in the contract is equal to the amount of ownership of the oil products by the parties. According to Norway's JOA, the ownership, responsibility, and risk associated with the produced oil have transferred to either side at the delivery point designated by the management committee before the start of the oil production (Art. 20.1) (Directorate, 2008).

As a general rule, each partner in the JOA obtains a share of production based on its proportional interest in the contract.

Ownership in CJV, in other words, in CJV direct ownership of the project and production is available to the HC and IOCs. (Al-Emadi, 2010) HC and IOCs are the owner of equipment and facilities for this project and produce oil and gas. (KW Blinn et al., 1986) Ownership in (JVC), HC, and IOCs will only receive revenues from oil and gas sales, and they have not direct access to petroleum production. Indeed, HC and IOCs are shareholders of a separate legal entity. This JVC independently owns oil and gas production (Davies et al., 1992). Ownership (JVP), The JVP has direct ownership (and access) to the production of petroleum in addition to equipment and facilities. Ownership in these types of JV contracts has been determined by the amount of capital (or cash or property) of the partners. Finally, each partner will be the owner of invested due to the ownership of capital (Al-Emadi, 2010).

### *6.5. Control over ownership of oil in place or oil reservoirs*

Generally, co-ownership has held on assets, installations, and equipment installed. The JV has direct ownership of equipment and facilities.

### *6.6. Control over ownership of information and data*

Given that each party to the partnership has a certain amount of rights, responsibilities, and shares, it appears that control of ownership of the information and data also belongs to all stakeholders on the basis of the extent of each party's participation.

### *6.7. Effective Control*

Control in CJV -The CJV to be granted Operations Committee the power to control and manage the activities of the joint venture, except for exploration and exploitation operations. The operational committee has the right to monitor the operation of the operator. On the other hand, the exploration and operation of resources are under the sole control of the operator (Al-Emadi, 2010).

The structure of JV management and control is integrated or non-integrated. The co-ventures jointly participate in the management and control of the joint venture's affairs. In non-integrated structures, management and control have divided between the co-ventures (Chow, 1985).

Control in (JVC) -Board of Directors (BOD) is responsible for controlling and managing operations and executive management of the joint venture company.

IOC and HCs, as JV shareholders, have the responsibility to grant executive management through the appointment of BOD members, thereby indirectly controlling joint investment activities. Indeed, control and management are done directly by partners or co-ventures (Shishido, 1987) (Al-Emadi, 2010).

Control (JVP)-All partners have an equal right to participate in the management and control of the JV. A management committee has created, which consists of an agent of the joint participants, which is responsible for the implementation of the business (Sayer, 1999).

## Conclusion

One of the reasons for the creation and diversification of different types of petroleum contracting patterns is the tendency of governments and international oil companies to define different states of control over the oil reservoir, including produced products, petroleum facilities and equipment, and even the right to own data and information on these activities. All of the above have high strategic and economic value. In the meantime, the domestic laws of the states have a fundamental impact on the division of ownership rights and sovereignty over these strategic natural resources, for example, in the CA the government aims to maximize the profits from the extraction and sale of oil resources, thereby providing effective management and control to the IOC, But in contrast to the service contracts of host governments that are not interested in granting strategic concessions to the IOCs, the status of the IOCs as a contractor is reduced by the profits from the sale. In fact, the ultimate and effective control of all aspects is in the hands of the host government, On the other hand, in PSA and JV agreements, HC and international oil companies reach an agreement based on an integrated or non-integrated JV management and control structure. It is based on the number of shares and dividends agreed between the parties, in which case-control and management are exercised directly by the partners or partnerships. Based on the analysis done in this article, it has been identified that one of the key factors informing & determining different petroleum contract patterns for the stakeholders is which party can exercise more effective control over the items mentioned in this article. Such as management, stocks, oil reserves, manufactured products, reserves, etc.

***Author contributions***

This paper was written in its entirety

***Conflicts of interest***

The author declares no conflicts of interest in this paper.

**Abbreviations**

Agip Company (Azienda Generali Italiana Petroli - Italian General Oil Company),Bushehr Oil Company (BUSHCO),Contractual Joint Venture (CJV),Concession contract (CA) ,Capital costs (Capex),Contractual Joint Venture (CJV),Exploration and Production (E&P),Enterprise de Recherche et d'Activite Petroliere (ERAP),Enhanced Oil Recovery (EOR),First Tranch Petroleum (FTP),Host country (HC),International Oil Company (IOC),Iranian National Oil Company (INOC),Iran petroleum contract (IPC),Incorporated joint ventures (IJV),Improved Oil Recovery (IOR),Joint venture (JV),Joint Operating Agreement (JOV),Joint Venture Corporation (JVC),Joint Venture Partnership (JVP),Joint Venture Agreement (JVA),Joint Venture Corporation (JVC),Joint Venture Partnership (JVP),Maximum Efficiency Rate (MER),Mines on the surface of the earth (MSE),Mines in the depths of the underground (MDU),National Oil Company (NOC),National Iranian Oil Company (NIOC),Non-capital costs (Non-Capex), Norwegian Petroleum Directorate (NPD),Operating costs (Opex),Production Sharing Agreements (PSAs),Production Sharing Contracts (PSCs),Pure Service Contracts (PSCs),Risk Service Contracts (RSCs),Societe-Irano-Italienne des Petroleos (SIRIP),Technical Service Contract (TSC),Unincorporated joint ventures (UJV).

**Competing interests**

All authors declare that they have no competing interests.

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