

PRODUCTION SHARING CONTRACTS AND CONCESSIONS IN THE BRAZILIAN SUBSALT REGION

A Comparative Analysis



University of Oslo

Faculty of Law

Candidate number: 5013

Supervisor: Erik Brannsten

Deadline for submission: (10/01/2010):

Number of words: 16.347 (max. 18.000)

Content

1	<u>TABLE OF ABBREVIATIONS</u>	<u>1</u>
2	<u>INTRODUCTION</u>	<u>3</u>
2.1	The Background of the Brazilian Oil and Gas System	6
2.2	The New Regulatory Framework	8
2.3	Objective of the thesis	10
3	<u>CONCESSION REGIME</u>	<u>12</u>
3.1	Introduction	12
3.2	The Background of Concession Regime	12
3.3	Main Contractual Terms and Conditions of the Brazilian Concession	14
3.3.1	Ownership of Production	14
3.3.2	Ownership of Installation	15
3.3.3	Parties and their Responsibilities in Each Phase	16
3.3.4	Costs and Risks	17
3.3.5	Grants of Rights	17
3.4	The Main Revenues	17
3.4.1	Signature Bonus	18
3.4.2	Royalties	18
3.4.3	Special Participation Fee	19
3.4.4	Payment for the Occupation and Retention of the Area	19
3.5	The Licitacion Process and Manifestation of Interest	20
3.6	Remuneration of the IOC	20
3.7	Local Content	21

4	<u>PRODUCTION SHARING CONTRACTS</u>	<u>22</u>
4.1	Introduction	22
4.2	Background of Production Sharing	22
4.3	The main Terms and Features	23
4.3.1	Definition of PSC	24
4.3.2	Parties and Instruments of Contracts	25
4.3.3	Ownership of Production	26
4.3.4	Ownership of Installation	26
4.3.5	Responsibilities of IOCs and the Government	27
4.3.6	The Government Take	28
4.4	Comparison between Countries which utilize PSC	29
4.4.1	Indonesia	30
4.4.2	Angola	31
4.5	The IOC's Take: Cost Oil	32
4.6	Sharing of Production – Profit Oil Split	33
4.7	Petro-Sal – Managing Brazil's Interests	34
5	<u>COMPARATIVE REGULATORY ANALYSIS</u>	<u>39</u>
5.1	Introduction	39
5.2	The Exploration Phase	39
5.3	Development Phase	41
5.4	Production Phase	42
5.5	Ownership of Production	42
5.6	The Contract between HC and IOC	43

5.7	Responsibilities and Function of IOC and HC	44
5.8	Ownership of E&P Installation	45
5.9	Political Appeal	46
5.10	Timing of Payments	46
5.11	Booking Reserves	47
5.12	Institutional Framework	47
5.13	Overview and Conclusion	47
<u>6</u>	<u>COMPARATIVE FISCAL ANALYSIS</u>	<u>49</u>
6.1	Introduction	49
6.2	Signature and Production Bonuses	49
6.3	Royalties	50
6.4	Income Tax	51
6.5	Overview and Conclusion	51
<u>7</u>	<u>ADVANTAGES AND DISADVANTAGES OF THE DIFFERENT REGIMES</u>	<u>52</u>
7.1	Production Sharing Contract	52
7.2	Concession	53
<u>8</u>	<u>CONCLUSION</u>	<u>55</u>
<u>9</u>	<u>BIBLIOGRAPHY</u>	<u>58</u>

1 Table of Abbreviations

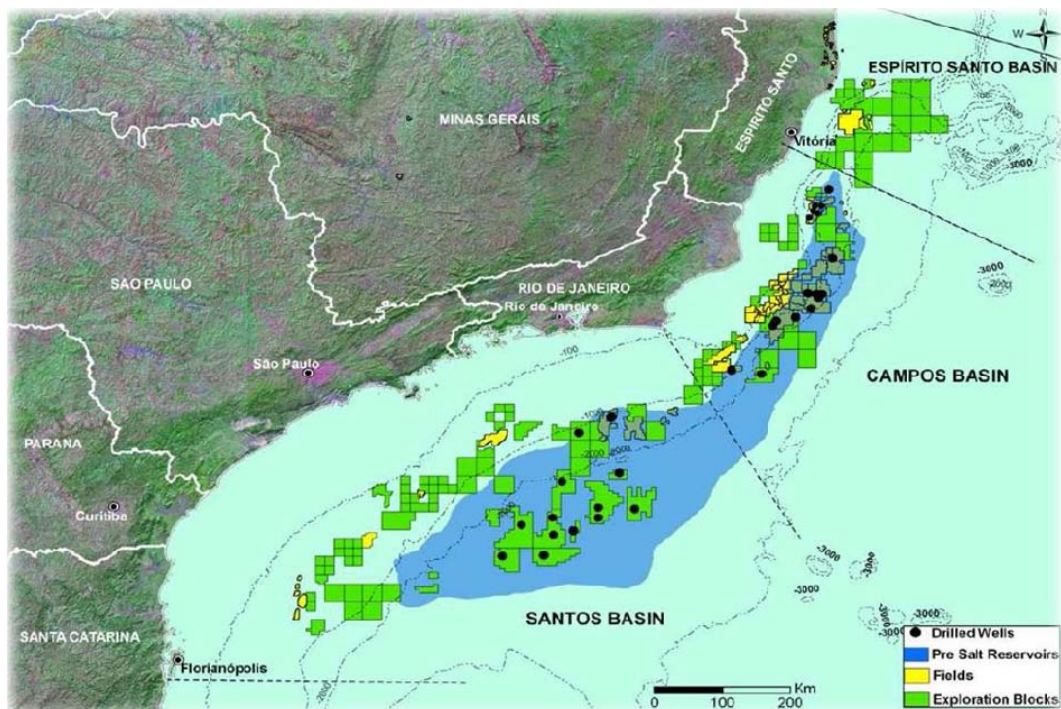
ANP	National Petroleum Agency
BP MIGAS:	Badan Pelaksana Kegiatan Usaha Hulu Minyak Dan Gas Bumi (Executive Agency for Upstream Oil and Gas Activity)
CNPE	National Council of Energy Policy
HC	Host Country
IOC	International Oil Company
MEP	Minimum Exploratory Program
MINFIN:	Ministry of Finance (Angola)
MINPET:	Ministry of Industry and Petroleum (Angola)
NNPC:	Nigerian National Petroleum Corporation (Nigeria)
NOC:	National Oil Company
NPC:	National Petroleum Consultants
NPD:	Norwegian Petroleum Directorate
OC	Oil Company
PEM:	Plano Exploratório Mínimo
Pertamina:	National Oil and Natural Gas Company
PDVSA:	Petróleos de Venezuela S.A.
PETROBRAS:	Petróleo Brasileiro S.A.
PROMINP:	O&G Brazilian Industry Mobilization Program (Programa de da Indústria Nacional de Petróleo e Gás Natural)
PSC:	Production Sharing Contracts (Contratos de Partilha de Produção)

ROR: Rate of Return

Sonangol: Sociedade Nacional de Combustíveis de Angola

2 Introduction

When the sub-salt reservoirs¹ were discovered just off the coast of Brazil the Brazilian Government started to evaluate the need for adopting the legal system governing the exploration and production of petroleum in Brazil. The main objectives were to increase Governmental control and participation in future block and to increase the Government take. It was a widespread understanding that the current Concession system was not appropriate in order to take full advantage of the natural resources in the reserves. With the discovery of this new field, the conditions for exploring and producing oil and gas in Brazil changed, because of the high quantity and quality of the field. Thus, the Brazilian Government decided to introduce the Production Sharing Contracts (PSC) in this new field.



Picture: The sub-salt reservoirs marked in blue. Courtesy Petrobras

¹ The sub-salt reservoirs are deep-sea reservoir discovered off the east coast of Brazil. The sub-salt is the biggest reservoir ever discovered in Brazil.

This thesis endeavours to convey the main positive and negative aspects of introducing this new regime. We will also try to draw some conclusions regarding the effects that this alteration will have for the International Oil Companies (IOCs), the Government take and the Governmental control over the industry. In addition we try to discover what were the motivations for introducing this new regime and if these objectives have been obtained.

Independently of the fiscal system utilized, the main point of the financial question is how the costs are recuperated and how the profit is divided. The main objective in this situation is to maximize the Governmental participation and at the same time maintain the interests of the IOCs. To achieve this the Host Country (HC) has to formulate and implement a tax system which permits a fair return to the State and to the industry, avoids innappropriate speculation, prevent unnecessary administrative costs, is flexible, keeps a steady production and does not contribute to fluctuations in the price of hydrocarbons. Finally the tax regime must create a healthy environment for competition. The taxation system should also take into consideration the geological and political risks, as well as the potentials gains of the production.

In order for oil companies to make rational investment decisions, the framework conditions must be predictable and transparent. This is the general basis for the incentive system. However, the change from Concession to Production Sharing may affect the transparency of the system. This may again affect the willingness of foreign companies to invest in the Brazilian oil industry. Even so, the Brazilian Government has initiated this process in order to increase the capital flow from the investing companies to the Government so that the petroleum can benefit the Brazilian population to a larger extent.

To explore for oil or gas, it is necessary to have access to blocks, which are not usually owned by the company conducting the exploration. Even if they are, an oil company must ensure that it has all necessary and relevant permits and authorities to enable it to

do so.² To get the relevant permission the International Oil Company (IOC) may have to work in cooperation with the Host Country (HC) to reach an agreement. To reach this agreement there will be a price. Procedurally in most jurisdictions these consents come in one of two forms: either the grant Concession in the form of a license or a lease, or by the conclusion of a Production Sharing Contract.³

This dissertation aims to discuss the petroleum arrangements and to analyze the facts that led to the creation of Concessions and Production Sharing Contracts (PSC). Subsequently, it will look at the main features of Concessions by analyzing the Brazilian regulatory framework for oil activities. Next, the main features of a Production Sharing Contract will be brought into discussion. At the end, this dissertation will compare both regimes from a contractual perspective in order to answer whether it is really necessary to adopt a new regulatory framework based on a Production Sharing Contract for the Sub-salt area in Brazil.

This thesis will give an overview of the contracts used in Brazil for exploration and development. Chapter 2 will give an overview of the Concession regime, by first explaining the main features and the main revenues. Chapter 3 presents the new regulatory framework, Production Sharing Contracts, and brings the main terms of the contracts and the main revenues into the discussion. In this chapter we will also address the opening of the new company Petro-Sal. Chapter 4 presents the comparative analysis of both regulatory systems and presents the main differences between the Concession Regime and PSC. The Concession Regime currently is utilized in Brazil and we look at the experience of using this system in Brazil and compare these experiences to the experiences of the PSC in other countries, such as Angola and Indonesia.

In Chapter 5, the fiscal perspective with regard to royalties and revenues will be considered. Again, we compare the Concession and the PSC regimes and look at how the two regimes affect the Government take. Chapter 6 compares various countries that utilize the PSC regime. We also compare these to the Norwegian Concession Regime.

² A. Jennings, *Oil and Gas Exploration Contracts*, 2002

³ *Ibid.*

Even though we will learn that both the Concession and the PSC regimes can obtain more or less the same when it comes to financial output, it is still possible to identify some advantages and disadvantages of each system. This is addressed in detail in Chapter 7.

In conclusion, it will be demonstrated that the PSC brings no real benefits to Brazil. From a fiscal perspective, both regimes can achieve the same financial results and simply changing the contractual regime will not necessarily increase the Government take. Therefore, if the Brazilian Government's aim is to increase the level of Government take for the Sub-salt area, it can be easily done through the existing fiscal regime. From a contractual perspective, there is no relevant difference between the regimes when it comes to Government control and provisions related to each phase of the project.

2.1 The Background of the Brazilian Oil and Gas System

During the period of 1997-2009 we have seen an incredible progress in the Brazilian Exploration and Production (E&P) industry. Furthermore, the opening of the market to International Oil companies (IOCs) and the establishment of the Concession regime made a huge difference in the Brazilian oil and gas upstream industry. The number of IOCs operating in Brazil increased considerably during this period. One of the central points in the debate on the Sub-salt is regarding the regulatory framework governing exploration and production of petroleum. There are three models that have been utilized in the Brazilian history of petroleum:

- a) The **service contract**, which has been utilized in Brazil since 1975. The results obtained during this period were not positive due to instable currency associated with the low prices of the petroleum.
- b) The **Concession regime**, adopted in 1997, will be maintained in 28% of the Sub-salt reservoirs.
- c) The **Production Sharing Contracts** proposed by the Lula Government in 2009 will be utilized in the remaining areas of the Sub-salt.

A decade after the adoption of the Concession regime, the Sub-salt area was discovered. The Sub-salt area became known to the public in November 2007 when Petrobras—the Brazilian National Oil Company—made one of the most important announcements in its history: the discovery of a large oil reservoir in the Tupi field. Tupi was the first discovery in the Sub-salt area that, according to estimates, could take Brazil to a selected group of countries with substantial oil and natural gas reserves.⁴

Considering the huge investments associated with oil exploration, the Brazilian system needs the incentive and investments of the international oil companies to motivate its own industry. Since the adoption of the Concession regime in 1997, the Concession regime has proven successful. The growth of the oil and gas industry in Brazil and its benefits to the national economy are a result of straightforward rules and a transparent Concession regime by which the Brazilian Government, through the National Agency of Petroleum (ANP), grants the rights to explore and exploit oil and gas in exchange for the payment of all costs, Government participation, and specific taxes related to the operation. Guarantees that contracts will be fulfilled by the Government and the fiscal and regulatory stability it imposes give the licensee the necessary legal stability to invest in petroleum and gas.

The legal background of Concession is found in articles 176 of the Brazilian Federal Constitution CF/88 c/c, articles 3º, 21 and 26 of the Law of Oil, where it is stated that the IOC becomes the owner of the property, having the rights to the resources after the extraction. Besides, the Law of Oil brought diverse other arrangements detailing the regulation of the activity⁵. First of all it created the National Council of Energy Policy (CNPE)⁶ which is the regulating organ of the industry, linked to the Department of Mines and Energy.

Futhermore, Law 9.478/97 brought some alterations to the Brazilian system, introduced in:

⁴ Brazil's to use a Production Sharing system for pre-salt oil exploration." Downloaded 26/05/2010, from <http://www.petroleumworld.com>

⁵ See article 176, of the Brazilian Federal Constitutional 1988 c/c with article 3 of the law of Oil 9.478/97

⁶ The National Council of Energy Policy (CNPE) is a Government entity responsible for energy policy.

- a) the creation of the regulating agency (CNPE) for the sector;
- b) of other Government revenues, in addition to the royalties (the Signature bonus, special participation and rent of Occupation of the area and retention of the areas);
- c) an increase in the royalties from 5 to 10% of the production;
- d) Government mechanisms for deciding the price of oil and gas produced in Brazil;
- e) new ways to collect the taxes and other payments from the IOCs;
- f) opening of the market for other companies; and
- g) incentive to the development of the local industry.⁷

Considering the above, the Law of Oil also made a few changes in regards to Petrobras in order for Petrobras to adapt to the new reality, which now involved a more competitive character.

2.2 The New Regulatory Framework

Despite of the success of the Concession regime, in July of 2009 the Government proposed the adoption of a new regulatory framework called Production Sharing Contract, or Contract (“Reforma de Partilha”). This included the creation of a state-owned company whose main objective was to take a larger share of the revenues from the pre-salt areas differently to the Concession system which is based on the royalty/tax model. In fact, the idea was to create a parallel system of Production Sharing contracts for big reservoirs emerging from the Sub-salt zone, while retaining Concessions for reservoirs outside the Sub-salt.

The reasons why Brazil is rising so fast as an oil power are in large part the same reasons it has surged to the front lines of the emerging markets: economic stability and a resilient democracy with respect for the rules of the free market.⁸ Because of the stability and the considerable growth both in Brazilian economy and the petroleum industry, the Brazilian Government decided that alteration of the regime is more favorable, since there was no reason to maintain the Concession regime, as President

⁷ See Law of Oil, 9.478/97

⁸ Marc Margolis, <http://www.newsweek.com/id/216615>, Download 26/07/2010

Lula said: “*The only reason to keep a Concession system is if a country is not certain it will find petroleum.*”⁹

The legal regulatory regime of exploitation and production of hydrocarbons describes the way the Government regulates the oil producing activities and other related activities, and how the Government is related with the different agents of the industry. The legal regulatory regime thus determines the relation and the involvement between the Host Country (HC) and the International Oil Companies (IOCs).

There are two basic arrangements for exploration and exploitation of petroleum around the world: Concessions and contracts. Contracts can be divided into three types: Production Sharing, risk service, and pure contracts. The basic difference between Concessions and contracts lies in the division of the oil and gas between the state and the IOC¹⁰. The contract that we will examine in this thesis is the Production Sharing contract that was recently adopted in the Brazilian Sub-salt.

As an overview of the different arrangements we will mention some of the main characteristics of the 2 most utilized regimes. The main aspects concerning the most important contract for exploration of petroleum can be summarized as follows:

- The **Concession** basically gives all production to the concessionaire while imposing commensurately higher tax and royalty rates.
- The **Production Sharing** contract divides production between the Government and the Contractor after following a portion for cost recovery. It imposes lower income tax and sometimes royalty.

The fiscal details are the only differences between the various types of petroleum arrangements. All other details of the contract or Concession (i.e., length of the exploration or exploitation phase, the relinquishment provisions, the employment and

⁹ Comments made by President Lula: <http://www.petroleumworld.com> downloaded 01.06.2010.

¹⁰ Barrows, G. H. Worldwide Concession contracts and petroleum legislation, PennWell Books,1983.

training obligations, the supply of domestic consumption pro rata by the oil company, etc.) are essentially the same.¹¹ They apply equally to all contracts and Concessions.

Overlying these arrangements and accompanying any of them is joint venture. The joint venture is not a type of petroleum arrangement but is only a partnership between a company having a Concession or contract and another company (frequently a Governmental company) by which they agree to operate the venture jointly. They do this under their agreed partnership rules, called the operating agreement.¹² The final category of petroleum arrangements is complete nationalization.

2.3 Objective of the thesis

In this thesis we will discuss several aspects concerning the recent changes in the regulatory framework in the Brazilian Sub-salt reservoirs. Even though the Production Sharing has shown to be a very successful formula for developing countries, there exist other systems with many of the same desirable characteristics. For example, we will see that in practice the State can exercise as much control through a modern Concession regime as through Production Sharing. In both regimes the oil company bears the financial risk, and is generally responsible for running and performing operations under the supervision of the State. Some Concessions may even be considered more restrictive than Production Sharing contracts, both when it comes to operating the facility and the economic aspects.¹³

Concession was a successful regime with good results for both the HC and the IOCs. However, in adopting Production Sharing, the Government believes that they will have even more control of the oil industry. To fulfill this purpose, in this thesis, we have chosen to examine the legal and contractual aspects of both regimes by giving the main advantages and disadvantage in each system.

During the work with this thesis I had access to the archives and contracts of DLA Piper

¹¹ Barrows, G. H. *Worldwide Concession contracts and petroleum legislation*, PennWell Books, 1983.

¹² Barrows, G. H. *Worldwide Concession contracts and petroleum legislation*, PennWell Books, 1983.

¹³ IFP, *Publication, Oil and gas Exploration and Production*

in Rio de Janeiro. I spent some time at the Rio office and actively used the contracts available. I also had access to a work that DLA had written for BNDES (The Brazilian development bank), this work is classified and cannot be reproduced or referred to.

3 Concession Regime

3.1 Introduction

The Concession regime is the regime currently used in Brazil. The Concession will be continued to be used in blocks outside the Sub-salt and in some blocks, for which the Concession is already granted, in the Sub-salt. The term Concession has in this context the same meaning as licence and refers to an agreement between the HC and an IOC granting exclusive rights to the oil company to explore for oil and gas within a specific region and for a specified duration of time.

In Brazil the Concession regime was introduced through Law 9487/97, replacing the monopoly of Petrobras. Since the introduction of the Concession regime 10 licences have been granted. The Brazilian Concession is well recognized for its openness and transparency.

3.2 The Background of Concession Regime

The Concession regime was the first system adopted to regulate the petroleum industry and is still the most widely used system throughout the world¹⁴. Basically, the Concession is an arrangement whereby the oil company is granted the right to explore and exploit oil and gas in exchange for the payment of all costs and also specific taxes related to the operation¹⁵.

Under a Concession arrangement the Federal Government grants the contract holders exclusive exploration rights (exploration licence), as well as exclusive development and

¹⁴ Van Meuers, Pedro. Financial and fiscal arrangements for petroleum development on economic analysis, 1988

¹⁵ Blinn, K. W. International petroleum exploration and exploitation agreements: legal, economic and policy aspects. London, Euromoney Publications, 1986

production rights (lease or Concession) for each commercial discovery.¹⁶ The modern Brazilian Concession contract is based on the royalty/tax model. Companies interested in becoming a concessionaire must take part in a bidding round promoted by ANP (National Agency of Petroleum). The bidding criteria are transparent and constitute a system where each bidder are given points subject to the proposed signature bonus, the minimum work programme and local content percentage.

If a company wins the bid and is granted a Concession contract, it assumes all costs and risks involved in the upstream activity. The concessionaires are entitled to 100% of the production at the wellhead and are given the right to export the crude oil or gas produced, subject to some obligations such as meeting national consumption and acquisition of local content.

As far as the oil and gas industry is concerned, a Concession is a system by which the HC grants the concessionaire the exclusive rights to explore for and produce hydrocarbons in a given area of land for a certain period of time, in exchange for payment of royalty and taxes.¹⁷ A Concession comprises a contract in law, which protects the holder against unforeseen changes in case the petroleum legislation is altered.

In general lines the contracting through a Concession regime in the oil and gas industry gives the contracted company the status as the owner and gives him the right to keep the hydrocarbons. The owner has exclusive right to explore and produce hydrocarbons, by his own expense and risk, becoming owner of the oil and gas produced according to the contracts and tax applied. This is the starting point to evaluate and identify what are the fundamental differences of this regime in relation with others. It is thus different than many other systems in that in the Concession regime the State is not the owner of the petroleum after it has been extracted.

From a certain moment the HC started to interfere more directly in the form of contract,

¹⁶ IFP, oil and gas exploration and production.

¹⁷ LLP, K. S. "An Introduction to Upstream Government Petroleum Contracts: Their Evolution and Current Use." OGEL 3(1), 2005.

which can be seen in the clauses that were adopted in the modernized Concession regime:

- a) smaller areas of Concession;
- b) well defined time limits;
- c) the ability for the State to intervene, through inspection, including the application of penalties and the right to cancel the Concession;
- d) a plan of development in the areas not utilized;
- e) local content, obligation to hire national companies for services and equipment;
- f) obligation to generate jobs for the national companies and invest in higher education.

3.3 Main Contractual Terms and Conditions of the Brazilian Concession

Below is a summary of the features of the Brazilian Concession regime. The main terms such as exploration length, Concession area, and relinquishment can be modified in each different bidding round. Below we address the terms that are general for the Concession regime.

3.3.1 Ownership of Production

One of the main features of the Concession is that the hydrocarbons generally belong to the Federal Government until they are extracted from the subsoil.¹⁸ When hydrocarbons are extracted from the subsoil, they become the possession of the IOC. In other words, when the petroleum is explored, it belongs to the state, but when it is under production it belongs to the IOC. This State ownership of subsoil oil and mineral resources is quite

¹⁸ See article 20, item IX of Brazilian Federal Constitution and article 3 of the Law of Oil 9.478/97 .

Federal Constituion-Article 20. The following are property of the Union:
IX - the mineral resources, including those of the subsoil;

Law N. 9.478/97- Art. 3 combined with the alterations imposed by Law N. 5.938/09. The exploration and production of oil, natural gas and other fluid hydrocarbons in the pre-salt area and strategic areas will be contracted by the Federal Union under the regime of Production Sharing, as set forth in this Law.

common, and is applied in many countries including Brazil. The hydrocarbons produced, however, belong to the concessionaire. According to the Brazilian Concession contract, the concessionaire has the sole and exclusive ownership of the oil and gas. The contract holder becomes the owner of all the hydrocarbons produced, subject to payment of a royalty in the form of oil and natural gas or in cash.

In relation to the ownership of the hydrocarbons exploited, the fundamental difference between of the Concession Regime on one hand, and PSC and Service Contracts on the other, is that when applying the contract of Concession, licence or lease, the property of the hydrocarbons produced are transferred to the IOC that produced it.

3.3.2 Ownership of Installation

Another feature is the ownership of production installations, which under the Concession regime is owned by the holder of the Concession until his lease expires. The installation may then revert to the State without compensation for the holder. Alternatively the State can require the holder to remove at the latter's expense.

One of the main reasons for States to choose the Concession Regime is that it is a model in which the risks and costs of the activities of exploration, development, and production are paid in full by the IOC, that the IOC possesses total responsibility of acquiring and the installation of the equipment necessary to conduct the activities, and in this way, the IOC maintain the proprietary responsibilities of the equipment.

The contract is finalized when all phases of the contract are fulfilled and the area is abandoned. Reversion of property only applies to the properties that are considered reversible, which in case of Brazilian legislation is any property of the IOC, both immovable and permanent property as well as movable equipment, existing in any installment in the area of Concession, according to the Law of Oil. The ANP decides the permits of continuity of the operations, or if these goods are of interest to the state.

Another example of a HC which applies the reversion of property in this way is Norway, which protects the right to revert the property of the installation utilized in the oil activities after the licence has expired. Another requirement of Norwegian law is the

condition that the installation is in good condition in order to guarantee safe operation also after the property has been returned. In case the installation is not in good shape, the IOC may be liable to pay a compensation.

3.3.3 Parties and their Responsibilities in Each Phase

Under the Concession regime, the National Petroleum Agency (ANP) is the main regulatory body for oil and gas activities in Brazil. ANP is in charge of granting the Concession rights and is thus the party representing the Brazilian Federal Government. The other party is the concessionaire who may be the operating company, possibly as a consortium of companies.

There are some requirements that need to be met in order to be granted the contract under the Concession regime. During the phase of exploitation, the IOC has to submit a plan that states its purpose (Plano Exploratorio Minimo, PEM)¹⁹ to be approved by the ANP. Furthermore, if it is approved, the IOC has to perform the work in accordance with this PEM. The State is responsible for inspecting the operations of the IOC. Additionally the ANP determines the areas that are to be returned at the end of the exploitation.

During the production phase the IOC, in case of hydrocarbons discovery, has the obligation to deliver a statement of marketability to the ANP. Once this statement is approved, the IOC is obliged to fulfill with the statement within 180 days after the statement was delivered to the ANP. During the auction process all auctioneers are required to submit a Plan of Development to the ANP. The ANP is then required to make sure that the IOC follows up with the Plan of Development submitted during the auction process.

The IOC has the obligation to communicate each step in the process to the ANP. Also, the IOC has to make a plan, and act according to the Minimum Regulatory Program (PEM). The concessionaire is liable to the ANP, the Government, and third parties for losses

¹⁹ Minimum Exploratory Program, is the work program (such as seismic 2D and 3D), some potential methods and exploration(PEM)

and damages deriving from their activities. It should also obtain appropriate insurance for the operations.

3.3.4 Costs and Risks

According to the Brazilian Concession agreement, the IOCs must always assume all costs and risks related to the operations and its consequences, as well as bear all losses it may incur, without being entitled to any payment, reimbursement or indemnification.²⁰

3.3.5 Grants of Rights

The Brazilian Concession agreement grants the rights to the IOCs to explore for and produce hydrocarbons within the Concession area. Basically, the concessionaire has exclusive rights to drill and production rights with free access to the Concession area and also the ownership of the hydrocarbons from the wellhead. As a result, the IOC also owns the rights of commercialization. Another prerogative is the right to export, subject to the ANP's authorization.

3.4 The Main Revenues

In Brazil, as already mentioned, the activities of exploitation, development, and production of oil and of natural gas are exercised through the contracts of Concession. The Concession is granted to the highest bidder in the auction.

The contract of Concession thus determines what contributions the IOC has to pay, such as:

- a) Signature bonus;
- b) royalties;
- c) special participation; and

²⁰ See Clause 2.2 of the Brazilian Concession Agreement (Annex I).

- d) payment of the occupation and retention of the area.²¹

The criterias for the collection of wealth generated through the exploration have undergone several alterations, that can be seen in the modernized Concession regime:

- a) the royalties of the hydrocarbons are determined based on the market price of the oil or gas;
- b) increased taxation;
- c) more rigid control over book-keeping.

The most important revenues and their main aspects are discussed in the following.

3.4.1 Signature Bonus

The signature bonus is the amount offered by the winning bidder in the proposal for the Concession of crude oil and natural gas, and is to be paid to the ANP on the date of execution of the Concession agreement.²²

The signature bonus is the value paid by the company that wins the auction of the determined area of Concession. In Brazil, the minimum value of the signature bonus is established in announcement and corresponds to the payment offered in the proposal for obtaining of the Concession. The bonus is to be paid when signing of the contract, in one single payment.

3.4.2 Royalties

The royalty is a financial compensation to be paid monthly by the concessionaires operating each field, starting in the month of the respective start-up production date, without the allowance of any deductions. Royalties generally correspond to a percentage ranging between 5% and 10% of the reference prices for oil or natural gas, as established in the relevant bidding guidelines and Concession contract. In Brazil all

²¹ See article 45, section IV, Law of Oil 9.478/97- this article involves remuneration for the state in exchange for the right to a Concession to engage in oil and natural gas exploration activities.

²² See article 46, section IV, Law of Oil 9.478/97.

fields in production currently pay the maximum 10% rate.²³ In determining the royalties applicable to a particular Concession block, the ANP takes into consideration, among other factors, the geological risks involved and the production levels expected.²⁴

The royalties are one of the oldest forms of payment for rights. They are applied to both onshore and offshore production and establish a financial contribution to the State from the companies that explore and produce oil and natural gas. This contribution can be regarded a compensation for the fact that non-renewable and scarce products are extracted from the HC's territory.

3.4.3 Special Participation Fee

The Special Participation Fee constitutes an extraordinary financial compensation by the concessionaires of exploration and production of crude oil and natural gas to the Government, in the special case when there is a large volume of production or high earnings. The rate is determined for each field of a determined Concession area.

For the assessment of the Special Participation over the crude oil and natural gas production, progressive rates ranging from 0% to 40% are applied on the production net revenue for each field on a quarterly-basis depending on: (i) volume of production and (ii) whether the block is onshore or offshore and, (iii) if offshore, whether it is located in shallow or deep water.²⁵ ANP also establishes the expences that can be deducted in order to calculate the Special Participation. The main purpose of the Special Participation Fee is to capture the extraordinary profits.

3.4.4 Payment for the Occupation and Retention of the Area

Art. 50 of the Law N° 9.478/97 determines the payment for the occupation and retention of all areas in Brazil. This payment is normally it called a rental fee, and is a normal

²³ See article 45, Section II, Law of Oil 9.478/97 –the royalties constitute financial compensation due by the Concession holders for petroleum and natural gas exploration and production.

²⁴ inter.bndes.gov.br/english/studies/petro.pdf (Download 14/06/2010)

²⁵ See Article 50, Section VI, Law of Oil 9.478/97. Item III ,involves extraordinary financial compensation paid by the Concession holder due to a huge production volume or high profitability of a field or block.

form of payment in several oil producing countries.²⁶

The payment of the occupation and retention of the site is to be made annually. This payment is determined by size of the block and is determined every calendar year, from the signing of the contract of Concession, and is to be paid the 15 of January of the subsequent year. For the calculation of value, the number by days for which the contract is valid in each year must be taken into account.

When the site is on land the Concession contract should also include a clause that determines the payment to the holders of the land. This payment should reflect the fraction of land for each land holder and should be paid in local currency. The payment is decided by the ANP, but restricted to be between 0.5% and 1% of the output of oil or natural gas.²⁷

3.5 The Licitacion Process and Manifestation of Interest

The Concession process should be initiated with a manifestation of interest of the IOC. The IOCs that desire to participate in the rounds of licitation promoted by the ANP have to acquire all necessary information. In addition, for the IOC to acquire the right to explore some requirements such as technical, legal and financial qualification need to be respected.

3.6 Remuneration of the IOC

In the applicable legal regime in Brazil, the result of the Concession is an obligation imposed on the IOC to explore the determined area at its count and risk and, in case of success (i.e., if oil is found), to produce oil or natural gas. The IOC will also be the rightful owner of the hydrocarbons after extracted.

In this way, having in mind that the hydrocarbons belong to the IOC after they have

²⁶ See Article 50, Section VI, Law of Oil 9.478/97 c/c article 51 and Decree 2705/98, is to be calculated for each year of the calendar, this payment is computed considering the units value. The Decree 2705/98, also establishes the maximum and minimum

²⁷ See Article 52, Section VI, Law of Oil 9.478/97

been extracted, the income of the IOC will be a result of commercialization of the petroleum. The IOC does not receive any additional compensation for extracting the petroleum. In addition the IOC also bears the whole risk of oscillating market prices, something that directly affects the return on the investment.

3.7 Local Content

The contracts of Concession between the ANP and the IOC that won auction round, and thus the right to extract and produce the oil and natural gas, include a *Clause of Local Content*.²⁸ This is included to force the IOC to contribute to the local industry. The Clause of Local Content obligates the IOC to utilize the local industry so that, in addition to the direct financial compensation given to the HC, the producing country can develop its industry and produce jobs in the sector.

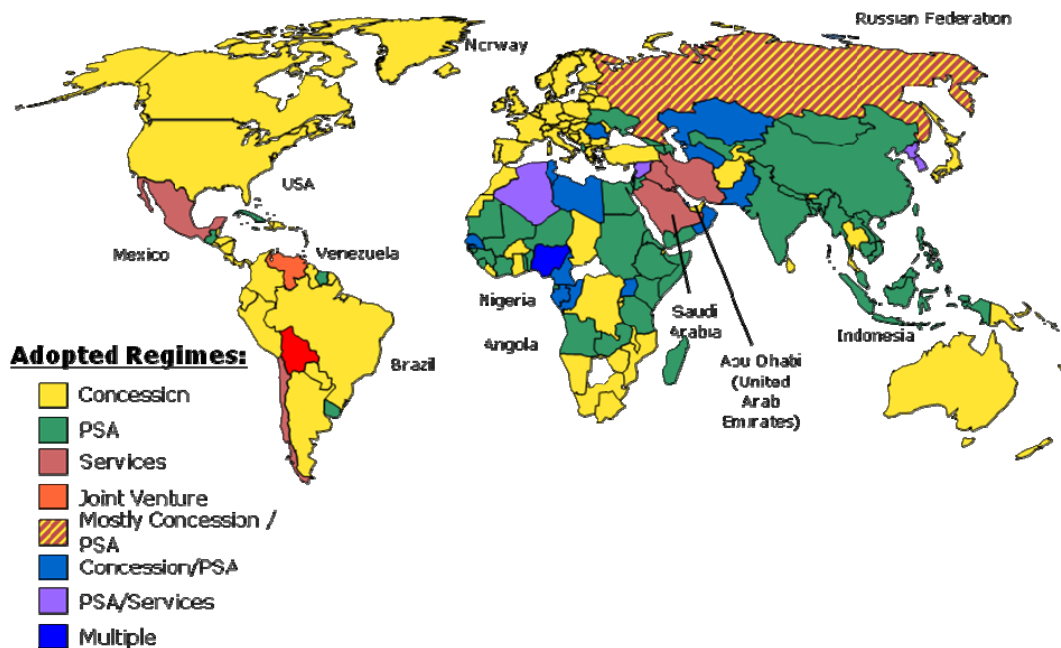
The IOCs fulfill these requirements by giving contracts to the local industry and in this way actively help them to overcome lack of industrial expertise and educate highly trained technical personnel. The expected result of applying this clause is to encourage technological development, training, and educate human resources. Also the generation of jobs and salaries in the respective segment is an important contribution to the wealth of the State. According to the clause, the concessionaires must assure preference to Brazilian producers whenever the suppliers offer competitive prices, production time, and quality, compared to that of other competing international companies.

²⁸ National Agency of Petroleum, Natural Gas and Biofuels—Resolution n.36,(23-11-2007), the clause establishes that concessionaires commitment as for local acquisition of goods and services shall be provide with the ANP.

4 Production Sharing Contracts

4.1 Introduction

With the discovery of large oil reserves in the sub-soil just outside the coast of Brazil, the Government felt that the Concession system was not adequate for maintaining the Government's interest in this area and to guarantee a maximization of the financial output. The Production Sharing regime was introduced in this area in order to meet with these requirements.



Picture: The use of PSC and other regimes throughout the world. Courtesy MacKenziey

4.2 Background of Production Sharing

The concept of Production Sharing originated in Indonesia where it was first used in agriculture. It was later adapted for petroleum in 1966. The concept is now used in Peru, Malaysia, Malta, Guatemala, Libya, Egypt, Syria, Jordan, Angola, China, Qatar,

Gabon, Bangladesh, and the Philippines.²⁹

A Production Sharing contract (PSC) is a contract between either a HC or its state oil company (NOC) and an international oil company (IOC) by which the latter assumes all costs and risks associated with the exploration and production of oil and gas. In the event that a commercial discovery is made, the international oil company is entitled to a share of the production in order to recover all costs as well as to have a return on the investment³⁰.

One of the main objectives of the PSC is to attract multinational companies in the sector of oil and gas that are interested and willing to risk capital and utilize technological expertise to develop the reserves in the HC.

Considering the strategic and economic importance of the activities involved with E&P of hydrocarbons in the vast majority of the oil producing countries, guaranteeing that a sufficient part of the produced hydrocarbons end up in the State's hands is of vital importance. This is not only an economic aspect but also evident in the political activities involved with the exploration such as nationalism and to gain larger political control over the activities.³¹

4.3 The main Terms and Features

Under the Concession regime the IOC is the owner of the petroleum extracted from the soil. For the PSC, on the other hand, the HC is the owner of the oil. In this way, the contributions to the state are no longer through taxes and royalties, but the extracted oil is passed on to the state directly. Part of the petroleum is then given to the IOC as a compensation for its activities and the risks involved with the exploration.³²

²⁹ Oil and gas exploration and production reserves, costs, contracts, Paris edition, 2004

³⁰ Bindemann, K. Production-sharing agreements : an economic analysis. Oxford, 1999

³¹ Smith, Ernest E. International Petroleum Transaction, 2 edition, Ed .Rocky Mountain Mineral Law Foundation p.448, 2004

³² Bindemann, K. Production Sharing Agreements: an economic analysis. Oxford Institute for Energy Studies, 1999.

The PSC states that the IOC is required to pay a specific amount to the Federal Government to get the licitation and the title of "bonus de signature". This is required in order to explore the areas of petroleum and gas. If petroleum is found in these areas, the company will be granted the right to keep a part of the outcome of the production. This part of the production is given to the IOC in order to pay all of the cost related to the exploration. The exceeding part is called profit oil. This part will be divided between the Federal Government and the companies in the contracts, according to the contract rules.

Although the oil belongs to the State, the companies take the risks. However, the State can also take risks by allowing part of its profit to be used to develop the area. Nevertheless, the companies are entitled to recover their investment and the operation and maintenance costs. In general, the investment costs are recovered along a certain number of years, and the operation and maintenance costs in the same year they incur.

Based on the new regulatory framework in Brazil the Federal Government can perform the contract in two different forms: with Petrobras as the only exploring company or as a consortium where Petrobras is attributed at least a 30% share.

4.3.1 Definition of PSC

Production Sharing Contracts are defined in Bill of law 5938/08 as a "*regime of exploration and production of oil, natural gas and other fluid hydrocarbons*" whereby oil companies will be 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*".³³ This profit oil is shared between the contractor and the Brazilian Government in the percentages set forth in the PSC.

³³ Bill of law (Projeto Lei) 5938-09 which alter the Law of Oil 9.478/97, would amend Brazil's Law of Hydrocarbons and establish a shared production model for exploration of pre-salt fields

4.3.2 Parties and Instruments of Contracts

The legal instrument to be signed between the HC (or the NOC) and the IOCs under the Regime of Production Sharing is the Production Sharing Contract. This is the document that formally determines the rights and obligations of each part in the contract. There are two parties to the contract, a foreign oil company (IOC) and a Government representative which can be a head of State, a ministry, or a national oil company (NOC). In Brazil, Petrobras conducting the negotiations is the most common case. However, it is Petro-Sal³⁴ which will manage the interests of PSC. On the side of the foreign contractor we will frequently find joint ventures or consortia rather than individual firms. The IOC operates the oil field although many contracts provide for an option that allows the NOC to participate directly in the development process.

In spite of variations in the structure of the PSCs that have arisen over the years and in different parts of the world, there are a series of applicable basic characteristics common to all PSCs. These are:

- a) the HC (or the NOC) chooses the IOC which is given a contract for a specific region and a determined duration of time;
- b) the IOC will operate at their own count and risk, under supervision of the HC;
- c) the IOC should supply all the material, equipment, and necessary personnel for the conduction of the operations;
- d) the production will belong to the HC;
- e) the IOC has the right to recover their investments from the production in the contractually stipulated area;
- f) after the IOC has recovered all costs, the remainder of the production will be shared between the IOC and the HC, in proportions previously established in the PSC;
- g) the revenue of the IOC are subject of taxation;

³⁴ Bill of law (Projeto lei) 5939/09 would create the PETRO-SAL, a public company under the Ministry of Mines and Energy, that would be in charge of managing the Production Sharing agreements established for the pre-salt area.

h) at the end of the contract the equipment and the installations are transferred to the HC.³⁵

4.3.3 Ownership of Production

In PSC the producing countries transfer only the exclusive right to conduct the activities of exploration and production of the minerals of the subsoil. However, the hydrocarbons produced remain the property of the HC (or of the NOC) that hires the IOC to perform the exploitation of hydrocarbons.³⁶ In the case of commercial feasibility of the discovery made by the IOC, the State, as the holder of the hydrocarbons produced by the IOC, must refund the costs of the exploitation of the reserves ("cost oil") and share between the State (or NOC) and the IOC the remaining oil ("profit oil"), in proportions previously agreed in the contractual instrument.

Another characteristic of the PSC, that has also resulted in a change in the activities of E&P of hydrocarbons, is a closer participation and control by the State in the segment petroleum. Directly or through the National Oil Company (NOC) the State obtains a more direct influence in the petroleum sector, obtaining in this way better control and closer inspection in these activities.

4.3.4 Ownership of Installation

A common characteristic of the PSCs is that at the end of the contract, all infrastructure shall be transferred to the HC, without extra charge. In this context, the Angolan case can be used as an illustrative example of common arrangements in the PSCs, article 57 of the "Law of Oil Activities" (Law 10/2004, of 12 of November of 2004) states explicitly that, at the end of the contract, all of the equipment, instruments, material and any other property acquired for the operations during the PSC, as well as all the information of economic and technical nature should be passed on to the nation (Sonangol), without any payment or reimbursement.³⁷

³⁵ Bill of Law 5938/09 –E.M.I n.00038 article 14. 31/08/09.

³⁶ Paliashvili, Irina. The concept of Production Sharing, 2008.

³⁷ República de Angola; "Lei das Actividades Petrolíferas" no 10/2004, de 12 de novembro de 2004.

Indonesia's legislation, as well as Angola's, also states in art. 20 of its Law of Oil and natural gas,³⁸ that all information acquired through the license or by activities of E&P, will be the property of the State. The IOCs are permitted to utilize this information only during the validity of their contracts.

4.3.5 Responsibilities of IOCs and the Government

The HC can operate either directly, through its departments, or through agencies. The NOC can either act as the organ that grants the rights of E&P to the IOCs, or as the organ that is granted the rights together with the IOCs. The IOCs are the investors and also the holders of the necessary expertise. The IOCs can either operate blocks completely on their own or have a less central role in the activities of exploitation and production.

Generally, under this kind of contractual structure, the overall responsibility of the control and management of the operations is, in principle, in the hands of the NOC. The day-to-day and routine operations, however, are the responsibility of the IOC.

According to chapter 3, section 1 of Law 5938/09 the HC is not responsible for the risks imposed during exploration, development, and production under the PSC. The IOC is also responsible for the investment costs. However, if the HC desires to do so, it can also assume risks by taking on a part of the investment costs.

The PSC does not only impose obligations on the IOCs. There are also some responsibilities that the HC should exercise. It does so through the CNPE, ANP and the Ministry of Mines and Energy. The CNPE also has certain responsibilities. First of all it needs to decide what blocks are to be explored under the PSC regime and for what blocks Petrobras will be contracted directly and what blocks that are to be put out for auction. The CNPE also determines the technical and economical parts of the contracts,

³⁸ Bindemann, K., *Production Sharing Contract: An Economic Analysis*, Ed. "Oxford institute of Energy Studies, pp.10, 1999.

and is also responsible for the HC's part of the profit oil.³⁹ It is the responsibility of the Ministry of Mines and Energy to propose a plan, submitted to CNPE, which includes aspects such as signature bonus, minimum participation of Petrobras (at least 30%), local content and so on.

Finally, ANP is responsible for organizing and distributing the reserves of the HC. It is also responsible for analyzing and approving the IOCs and their exploration plans as well as evaluating and inspecting that the IOCs operate according to their plans.

4.3.6 The Government Take

Under the PSC regime, the IOCs bear the risks and, as a compensation, have the right to divide the oil produced with the State. In PSCs, the HC pays for these services with the oil extracted. However, the part that ends up in the hands of the state is in general more than half the production. This division of the production between the parts is the main source of income for the producing country in the PSC regime.

The main difference between PSC and Concession when it comes to Government participation, is that as a general rule in the PSC there is no payment of royalties. According to article 42 one of the government takes under the PSC is royalty, which can be considered a compensation for the exploration of oil. However, there might be other forms of payment (bonus payments) and taxes in the PSCs. These vary according to creativity and opportunity of the legislator of each country, and may incur at the time of:

- a) the discovery;
- b) the statement of marketability;
- c) the submission of the Plan of Development;
- d) the start of production of the output;
- e) after a determined (accumulated) volume has been produced or,
- f) after a determined quota of daily production has been reached.

³⁹ Law of oil 5938/09, section II, article 9, no. I-VII.

4.4 Comparison between Countries which utilize PSC

In this section we will take a closer look at two countries that use the PSC regime namely Angola and Indonesia. Under the Angolan law *"the oil operation can only be exercised through a licence of prospection or Concession according to article 6"*.⁴⁰ However, the Concession area is to be explored exclusively by Sonangol⁴¹, which under the terms of the law is the national Concessionaire. The Concessions granted to the NOC are obtained through a law determined by the minister. By analyzing the Angolan model, we find that the IOCs generally interpret the model utilized to be closer to the PSC,⁴² because it is through these instruments that the relation between the IOC and the Angolan State are materialized. The law opens for the utilization of three regimes; Concession, Joint Venture, and PSC. Sonangol has utilized only the Production Sharing Contract, however, when interacting with the IOC.

The main characteristic of the Angolan PSC is that it has a specific taxation on the oil activities under the law 13/2004.⁴³ The law applies to all international and national companies which exercise oil activities in the Angolan territory.⁴⁴

In Angola and Indonesia, royalties are not paid. However, the tax income is set to 50%. Angola has, at present time, a specific taxation of the oil producing activities, governed by the Law 13/2004 for the "Taxation of the Oil-producing Activities". The limit of "cost oil" in Angola is set in 50%, while in countries like Nigeria such a limit does not exist. In other countries like Qatar, Gabon and Ivory Coast it is far lower, representing about 30%. Even though the Signature Bonus needs to be paid in Angola, the simple fact that Angola is the only large oil producing country in Africa that utilizes the "rate of return" as a basis of calculation of the "profit oil", makes Angola a very attractive investment. Angola can be considered attractive also compared to other African countries where the royalties arrive at 20%, but where the "profit oil" is calculated

⁴⁰ See Angolan Law of Oil 13/78, article 6.

⁴¹ 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)

⁴² See Angolan Law of Oil 13/78, article 14.

⁴³ See Angolan Law of Oil 13/78, c/c Law 13/2004

⁴⁴ www.minfin/gv .Downloaded 09/2010

based on the total volume produced.

In Indonesia, for example, there exists a system called "First Tranch Petroleum" (FTP),⁴⁵ by which the first 20% of the production should be divided between the IOC and the NOC in percentages similar to that of the "profit oil". Even though there is no limit on how much of the production can be written off as investment and production costs in Indonesia, i.e., there is no limit on the "cost oil", this recuperation can only be taken from 80% of the production. The remaining petroleum, i.e., the "profit oil", is divided proportions between 65/35 and 55/45 between the NOC and the company hired, respectively. In addition, Indonesia, in general, requires the Signature Bonus and Production Bonus to be paid.

We will now discuss the models used in Anogla and Indonesia in somewhat more detail. These countries were chosen because they were the first to introduce the PSC regime among the principal oil producing countries. They are thus important to study because of their long experience with the regime.

4.4.1 Indonesia

Indonesia was the first country to adopt the PSC. Over the lase decades, the production in Indonesia has been in strong decline, accompanied of a considerable growth in the consumption, something that has transformed the country to an importer of hydrocarbons. In the first half of year 2000, the legal regulatory structure was altered, in an attempt of revert this situation.

The main change was to create regulating agencies in order to decentralize the power of Pertamina (the stately owned oil company), that was known as bureaucratic and inefficient. This modification brought with it more legal security to the system by removing the regulatory and economic responsibilities from the hands of the NOCs. However, the change in the regulatory regime related to the activities of oil and gas in the country has yet not resulted in an increase in the production of hydrocarbons.

⁴⁵ FTP, First Tranch Petroleum, (works as a cap on cost recovery. Futhermore the third generation contracts introduced improved incentives for marginal fields.

A peculiarity of Indonesian system is that from this law was put into action in 2001, it is the Regulating Agency of the upstream activities (BP MIGAS) that signs the Production Sharing Contracts. Furthermore, the system of how the oil is shared in Indonesia is “variable scaling”, i.e., an increase in the volume produced will result in a larger relative take to the Government. In this way the take of the IOCs during the initial phase is guaranteed by giving them a larger share, and the maximization of the Government take is guaranteed with the continuing and presumably increasing production in the field.

4.4.2 Angola

As the PSC regime implemented in Indonesia was not a big success, and the strategy to adopt the PSC in Russia was not fruitful (only four blocks in operation under this system), Angola does probably represent the case where the PSC has functioned best. The country is also the only big exporting country that utilizes contracts of PSC and "rate of return" (ROR)⁴⁶, which can be a factor of attractiveness to the IOCs, especially when the prices are below commodity.

Production sharing contracts which used to be based on varying rates at different production thresholds have now mainly been replaced by rate of return based contracts. Such contracts are awarded to the company which offers the lowest rate of return on the Concession. This has the merit of effectively capping the reward to the IOC when oil prices are very high and maximising the rent to the host Government.⁴⁷ Therefore, even in the event of exploration success, it is very unlikely that these companies will add shareholder value from the Concessions they were awarded.

Another aspect in the Angolan PSC is the possibility through specific licenses to choose the operator and participating IOCs. There is also another form of license involving small companies or companies controlled by Angolan citizens. The objective of these

⁴⁶ Rate of return: The rate of return on an investment, expressed as a percentage of the total amount invested. Rate of return is usually, but not always, calculated annually. also called return.

⁴⁷ Fiscal Tightening: Striking the Rights Balance, Oxford Energy Forum

licences is to contribute to the development of small local companies. The idea behind these licences is thus similar to the “local content” found in Brazil, although applied somewhat differently.

The Angola also practices "satisfaction of the needs of internal consumption". This is done in order to guarantee an eventual national demand of hydrocarbons. Thus, if the national demand is such that a larger part of the oil production is needed to satisfy it, the Government can take a larger cut. Such a sale should be carried out by fair market prices, determined by the Government. The Ministry of Industry of Petroleum Angola, MINPET⁴⁸ determines the quantity that Sonangol and the IOCs are obliged to sell to the State.

4.5 The IOC's Take: Cost Oil

The three most important elements of Production Sharing contracts are cost recovery, a production split between the Government and the Oil Company, and income tax.

In a Production Sharing Contract the IOC has the right to recover its costs by an appropriate proportion of the produced oil. This proportion is known as the cost oil. The cost oil is valued using the market price of crude oil before being compared with the recoverable costs.⁴⁹

There are different types of Production Sharing, but roughly speaking they can be divided into two main categories:

- a) the "Indonesian model" of PSC, where the IOC first receives first a part of the production destined to reimburse it of the costs and expenses, and then after recuperation of the costs, a percentage of the remainder of the production;
- b) the "Peruvian model" of PSC, in which the IOC receives a determined percentage of the production as payment for the costs, expenses and profit.

⁴⁸ MINPET designated short, is the organ of the Central Administration of the State authority that the sector of Petroleum being responsible for the implementation of national policy and for coordinating, monitoring and control of all oil. The main purposes of MINPET are promoting the structuring of the Petroleum Sector;

Coordinate, supervise, monitor and control the activities in the field of petroleum;

⁴⁹ IFP. Publication, Oil and gas exploration production

It is important to define the costs that the IOC can consider a part of the exploration and production costs, and how the IOC can recover this cost through the cost oil. In order to understand the process where the IOC recovers the costs we analyze the following aspects:

- a) what kind of investment is to be reimbursed to the IOC;
- b) if any interest or bonus is to be added to these costs;
- c) how the costs are to be reimbursed;
- d) how big a part of the production is given to the HC during this period of recovery of the costs;
- e) if royalties, bonus, and tributes are to be discounted from one or both parts and; finally,
- f) what happens after IOC has been entirely reimbursed of his exploratory costs.

Production Sharing Contracts do not generally provide for the payment of royalty on production, but in the case that royalty is paid, the cost oil is calculated on the production remaining after royalty.

4.6 Sharing of Production—Profit Oil Split

The proportion of the oil left after deduction of cost oil is known as the profit oil. The way the profit oil is shared depends on the contract rules. However, under the international rules, the profit oil is shared between the State and the IOC has changed substantially over the past 40 years.⁵⁰

There are many systems of sharing the "profit oil", the main are:

- a) a fixed proportion is given to the IOC and the HC, as in Indonesia (for example 85% to the State and 15% to the IOC);

⁵⁰ Johnston, D. International Petroleum fiscal systems and Production Sharing contracts, Pennwell, 1994.

- b) a progressive share based on the daily production or an accumulation of the production, for example giving a larger share to the HC when the production is large;
- c) the share of the production given to the IOC and the State varies according to the profitability of the operations, depending on whether, for example, the production is onshore or offshore, whether oil or gas is produced, and so on.

Another possibility in the PSC regime is the possibility to create a provision or reserve in case of fluctuations in the oil price. This reserve is created in order to maximize the share of the HC.

The PSCs are distributed through a bidding process where all the interested companies will propose a certain percentage of profit oil—equal or higher than the minimum fraction determined by law—and the company that puts forward the highest percentage of profit oil will win the contract. Once a company has been given the right to explore for oil, it has to pay a 10% royalty in addition to a special participation fee (SPF) that lies between zero and 40%.

4.7 Petro-Sal — Managing Brazil's Interests

A public company called Petro-sal will be constructed in order to manage the PSCs on behalf of the Brazilian government. The company will be organized as a corporation under the Ministry of Mines and Energy. Under the PSC system, Brazil's state-controlled oil company Petrobras will be the operator of all contracts for exploration and production of the Pre-salt layer. Interested parties can seek contracts through a partnership agreement.

According to article 173⁵¹ of the Brazilian Constitution, this new company is bound by the same legislation as private companies. This includes labour law, commercial law

⁵¹ See article 173, Brazilian Federal Constitution .Article 173.

ART.173 With the exception of the cases set forth in this Constitution, the direct exploitation of an economic activity by the State shall only be allowed whenever needed to the imperative necessities of the national security or to a relevant collective interest, as defined by law.

and tax law. The Norwegian example Petoro served as a model for the Brazilian Petro-Sal. For example, both Petoro and Petro-Sal have to assume risks and financial costs related with the activities of E&P.

In addition to the roles mentioned above, Petro-Sal will be responsible for the following:

- a) conducting the management, audit, and inspecting and supervising of petroleum activities performed under PSCs;
- b) authorizing the bidding processes related to the exploration and production of pre-salt areas;
- c) representing the Government, through the operational committees, in consortiums incorporated for the execution of PSCs; and
- d) representing the Government in case of unitization in the pre-salt and strategic areas.⁵²

Another important question to address in this setting is what role this new company is to have. The idea is not to create a "second Petrobras", or in other words, a new stately

Paragraph 1 - The law shall establish the juridical estatute of the public company, the mixed capital company and their subsidiaries which explore economic activity of production or trading of goods or rendering of services, with provisions for:

I - their social function and the ways of accounting by the State and society;

II - the compliance with the legislation proper of the private companies, including as regards to civil, commercial, labor and tax rights and duties;

III - bidding and contracting of buildings, services, purchases and sales, with observance to the principles of public administration;

IV - the constitution and functioning of their administrative and fiscal councils, with participation of minor stock holders;

V - the terms, the performance evaluations and the liabilities of the administrators.

Paragraph 2 - The public companies and the mixed-capital companies may not enjoy fiscal privileges which are not extended to companies of the private sector.

Paragraph 3 - The law shall regulate the relationships of public companies with the State and society.

Paragraph 4 - The law shall repress the abuse of economic power that aims at the domination of markets, the elimination of competition and the arbitrary increase of profits.

Paragraph 5 - The law shall, without prejudice to the individual liability of the managing officers of a legal entity, establish the liability of the latter, subjecting it to punishments compatible

⁵² Bill of Law 5.941/09, this law makes Petrobras the sole operator in new pre-salt areas and addresses, among other issues, the capitalization of Petrobras.

controlled IOC which is involved with the operational part of the production. The need for capital, resources and technology would render it useless any attempt of this new agent to obtain success in the activity of E&P. Besides, for the new company to adapt a more regular role would put it in direct conflict with the rights of the ANP. Therefore, it is recommendable to give Petro-Sal⁵³ the role as a non-operational investor. As not-operational investor, it is understood that the new public agent can participate in any operation, only in partnership with an IOC, that being a state-owned or private IOC.

The comparison of different countries shows that some countries have adopted this new agent (such as Petro-Sal). However, the role of this company is not always restricted to the investor role. In Angola, for example, Sonangol sometimes exercises the role of not-operational investor, while NNPC in Nigeria and Petoro⁵⁴ in Norway have very restricted roles as not-operational investors.

On the basis of these experiences, we can draw an early conclusion that the State can fulfill its objectives to participate in the operations (either as an operator or as a mere investor). This is possible without adopting the contractual instruments for sharing the production. Licenses are for example utilized to regulate the participation of Petoro in Norway, while Nigeria utilize PSC, as well as others mechanisms depending on the field in question (like Concession contracts and instruments that are typically found in joint ventures regimes, such as the Memorandum of Understanding).

We will elaborate on the advantages and disadvantages that the creation of this new company in Brazil will bring with it. The main advantages of introducing this public company (Petro-Sal) are the following:

- a) The public company can serve as a tool for the State in the sense that it can establish and exercise the State's participation as an investor in the pre-salt. It

⁵³ Bill of Law 5938/07, c/c E.M.I- n-00038- according to article 31 explain that the State can through Petro-Sal contract directly Petrobras, which it will commercialize de share exeeded of oil.

⁵⁴ Nigerian National Petroleum Corporation,(NNPC) is the state oil corporation through which the federal Government of Nigeria regulates and participates in the country's petroleum industry. Petoro, a company wholly owned by the state of Norway, manages Norwegian offshore oil and natural gas properties, State's Direct Financial Interest (SDFI), on behalf of the Government.

can do this, independently of the licitation process for choosing the IOCs that will enter in partnership with the public company, i.e., assume a minimum percentage of participation of the block. Before the introduction of Petro-Sal, the participation of the State as investor in the segment of E&P was through its stock share in Petrobras, as concessionaire. In this way, as the participation of Petrobras was directly dependent on its financial interest and of its success in the licitation process, the State's involvement is subject to a competitive auction process and can, at least in theory, be marginalized as a part in the exploitation of the pre-salt;

- b) The public company enables the State to establish an economically intelligent participation through by prioritating the blocks with the highest potential economic gains. To achieve this it is necessary create mechanisms that makes it possible to enter blocks after exploratory phase, reducing the State's risk in the initial period⁵⁵;
- c) The role of the public company is thus to participate only in the blocks of interest to the State, signing not just the contract of the respective Concession, but also interacting directly with the IOCs, through typical contractual instruments of the petroleum industry, sharing responsibilities such as necessary investments and the projects of E&P with the IOCs;
- d) As the State's tool for investing, the public company's main function is:
 - i. a primary function as receiver of the resources that are to be invested in the activities of E&P and;
 - ii. the company is also a canalizer of fundings to the Sovereign Wealth Fund, that is to be created. The specific law describing the creation of this fund will define the fund's purposes, including the rules of how the income is distributed between the public company and the fund.
- e) The public company can also have other functions and tasks. It can for example be used as a political tool to for example control the operation of each block.

⁵⁵Bill of Law, 5939/07- describes all main aspects

- f) In addition, the public company can serve as an instrument for creation of specific rules of Governmental remuneration. For example, the activities of E&P of a block are granted the winning bidder, which can be a company or a consortium of companies.

Following are some of the main disadvantages that the creation of the public company, Petro-Sal may bring with it:

- a) The public company can block the development of the pre-salt, due to possible limitations in its capacity of indebtedness, tied by the limited capacity to offer financial guarantees.
- b) highly qualified labour is necessary for the formation of the public company, which may come at the expense of other parts of the sector;
- c) the participation of a public company in the process can generate conflicts of interests, especially regarding the role of the public company when interacting with already existing Governmental entities;
- d) the strategy of the IOCs during the auctions, mainly in respects to the value of the Signature bonus, may change in the presence of a public company. It may even be difficult to confirm the attractiveness of the investment with the presence of a public company;
- e) there will also be an increasing complexity in the analysis of the IOCs that take part in the licitation process;
- f) a larger political risk. This may reduce the attractiveness for the IOCs to invest in the sector.

The decision of state-owned participation in the public sector should therefore take into account the possible advantages and disadvantages associated with such a change in the system.

5 Comparative Regulatory Analysis

5.1 Introduction

In order to compare the regimes, it is important take into consideration not only the fiscal aspects of a particular system, but also how effective it addresses the different phases of the operation. Another aspects such as how important the oil is to the economy of the country should also be taken into consideration.

The regime utilized in Brazil is the Concession. This is a legal-regulatory regime where one or more national or foreign IOCs are given the exclusive rights to the exploitation and production of hydrocarbons, by its count and risk, in a determined area. The IOCs, if petroleum is found, become the holders of the production and are then able to dispose the petroleum freely, subject to a set of rules set forth in the contract and in the applicable legislation.

A new regulatory framework was introduced in the Brazilian sub-soil through the Production Sharing contract (PSC). Also in this case the Host Country grants to the IOC the exclusive right to conduct activities of exploitation at his own risk and cost. In this case, however, the IOC receives a part of the hydrocarbons produced as a form of compensation. Thus, when it comes to the risk aspect, there is not clear distinction between the PSC and the Regime of the Concession, but when it comes to who owns the oil, and how the oil is shared between the HC and the IOC, there is a clear difference. In this chapter, a comparative analysis between the Concession and PSC will be brought i to discussion.

5.2 The Exploration Phase

The Exploration phase is considered the most important phase, since future developments depend upon its success. The Government's interest is to secure rapid

and comprehensive exploration. Also, when the companies do not make any discovery or decide not to conduct any further exploration, the Government will resume control over the areas.⁵⁶

There are some provisions which the Government has adopted in order to protect their interests during the exploration phase, such as a minimum work programme, minimum expenditure obligations, requirement to supply all information acquired by the company in the course of exploration to the Government, and mandatory relinquishment.

By comparing the contracts utilized we can draw some conclusions regarding the PSC contract utilized by Sonangol in Angola, and compare this to the Brazilian Concession regime. When it comes to supplying the Government with geological and geophysical data gathered during exploration, in the case of the Brazilian Concession, *“the geological, geophysical and geochemical data and information are an integral part of national oil resources and shall be delivered to the ANP”*⁵⁷ In the PSC case taken from Angola *“the Contractor Group shall provide Sonangol with copies of any and all data related to the Contract Area, including, but not limited to, geological and geophysical reports”*⁵⁸

Regarding the minimum work obligation imposed on the company there are two different perspectives of each system. In the Brazilian Concession, “minimum exploratory program”, means the work program set forth in Annex II - work and investment program, to be mandatorily accomplished by the Concessionaire within the exploration phase pursuant to paragraph 5.9⁵⁹ In PSC case, the Angolan system sets out work obligations such as seismic surveys and drilling wells to be accomplished during the exploration phase.⁶⁰

⁵⁶ Hossain, K. 1979 (Law and policy in petroleum development: changing relation between transnationals and Governments)

⁵⁷ see clause 17.2 of the Brazilian Concession Agreement (Annex 1)

⁵⁸ see clause 24.3 of Angolan Production Sharing Contract (2006)

⁵⁹ see clause 5.9 of the Brazilian Concession Agreement (Annex 1)

⁶⁰ see clause 15 of Angolan Production Sharing Contract (2006)

Another difference in regard to the exploration phase is if the company is required to furnish a performance bond to guarantee a certain performance of its obligation. In the Brazilian Concession Agreement it states that, “*the concessionaire shall, at its own cost and risk, provide the ANP one or more securities for the Minimum Exploratory Program (MEP), in the form irrevocable letters of credit, guarantee insurance.*”⁶¹ On the other hand, in the PSC of Angolan Sonagol we have “*the minimum exploration work obligation shall be secured by a financial guarantee*”.⁶²

A last example is to what extent the company is required to progressively either relinquish or reduce the area held by it for purposes of exploration. In the interpretation of the Brazilian Concession we find, “*no later than October 31 of each calendar year, the Concessionaire shall deliver the Annual Production Program for each Filed to the ANP, in accordance with the Development Plan for the Field*”⁶³ - The concessionaire needs ANP’s approval to proceed with the production. In the PSC, “*if at the end of the first Exploration Phase, the contracts elect, pursuant to article 3.4 to continue exploration and operation in the contract area in the second exploration phase, the contractor shall retain up to sixty per cent (60%).*”⁶⁴

5.3 Development Phase

In both regimes there are different conditions in order to fulfill the companies’ obligations in the development phase. Firstly the provisions require the company to relinquish the area of any discovery if it does not want or is unable to develop, and in this way, allowing the Government to develop it through its own resources or in participation with another company.⁶⁵

In order to determine whether the discovery is commercial or not, and the following procedures in each case we analyse the contract form of both regimes to understand the main differences. The Brazilian Concession case states that “*prior to the end of the*

⁶¹ see clause 15.1 of the Brazilian Concession(Annex1)

⁶² see clause 15,15.6 and 20 of the Angolan Production Sharing Contracts(2006)

⁶³ see clause 10.2 of the Brazilian Concession (Annex 1)

⁶⁴ see clause 4.1 of the Indian Producing Sharing Contracts(2007)

⁶⁵ Hossain, K. 1979 (Law and policy in petroleum development:changing relation between transnationals and Governments)

exploration phase, the concessionaire may, by means of notification to the ANP, at its own discretion, issue a Declaration of Commerciality for the discovery in accordance with the Evaluation Plan approved by the ANP”⁶⁶

According to PSC, “if and when a discovery is made within the contract area, the contractor shall run tests promptly and in any case within 90 days from the date under article 10.1 in order to determine whether the discovery is of potential interest or not.”⁶⁷

5.4 Production Phase

After a reservoir has been discovered, the next stage is the production. The interest of Governments and companies may diverge with respect to rates and levels of production, and also with regard to adoption of production methods. By analysing both contracts we can state some differences with regard to the control that the Government has over the decision and policies relating to production.

In the Brazilian Concession regime the Concessionaire shall, at its own cost and risk, “*provide the ANP one or more securities for the Minimum Exploratory Program (MEP), in the form of irrevocable letters of credit, guarantee insurance.*”⁶⁸ However, in the PSC, “*the management committee, when considering any work programme and budget, may require the contractor to prepare an estimate of potential production to be achieved through the implementation of the work Programme and budget for each of the three years*”.⁶⁹

5.5 Ownership of Production

The property of the hydrocarbons is one of the main elements which differentiate the existing legal regulatory regimes. This difference is therefore also important in order to understand other characteristics, as remuneration of the State and responsibilities of the parts involved. Under the Concession regime it is very simple to know where and when

⁶⁶ see clause 7.1 of the Brazilian Concession (Annex1)

⁶⁷ see clause 10 of the Indian Production Sharing Contract (2007)

⁶⁸ see clause 15.1 of the Brazilian Concession (Annex1)

⁶⁹ see clause 10.11 of the Indian Production Sharing Contract (2007)

the title to hydrocarbons is passed from the State to the IOC since that happens at the wellhead. In this sense, hydrocarbons underground will belong to the State, but when it reaches the wellhead it automatically passes to the IOC.⁷⁰

The distinction between the regulatory legal regimes when it comes to the property of the hydrocarbons occurs when the hydrocarbon is extracted. In the Concession, the hydrocarbons extracted are passed on to the IOC. In the PSC, the petroleum is always the property of the HC, in this way a part of the production is delivered to the IOC on the basis of compensation for the risk run in the exploitation and for the investments made in the contractual phases.

We will mention briefly also the other regimes used in the Brazil, in order to demonstrate both the similarity and differences between all four regimes. In the case Contract of Service (with clause of risk), the IOC can be paid with part of the production or with discounting in the price of purchase of the barrel of the oil produced, but the production will always be the HC's property. In The Joint Venture, the production is shared between the HC and the IOC, in the proportion of its respective participations.

5.6 The Contract between HC and IOC

As a starting point, the main difference in relation to the legal aspects between the analyzed regimes is the legal instrument made between the HC and to IOC. Therefore, each regime has its typical legal instrument. Likewise, these contracts reflect the legal-constitutional framework and the regulation of how the State needs to act with respect to the oil industry. In this way, the contracts that materialize each regime are:

- In the Concession, the contracts of Concession, licence contracts and the lease.
- In the PSC, the contracts of sharing of production.
- In the contract of service, the service installment contracts, with or without clause of risk

⁷⁰ Bunter, M.A.G., *The promotion and licensing of petroleum prospective acreage*. The Hague; London, Kluwer Law International, 2002.

In relation to the methods used in order to obtain remuneration in the different regimes, we can consider that in case of Concession the Government participation comes in royalties. On the other hand, in PSC the remuneration process is materialized through the sharing of profit oil. In the Service Contract, the income arrives through selling the produced oil. Finally, in the joint venture case it comes through the share of the profit of the operation to the attributed state.

5.7 Responsibilities and Function of IOC and HC

This section is related with the way the IOC acts in each producing country and with the level of involvement of the country in the activity of E&P. The responsibility to have sufficient expertise in order to perform the exploitation and production is an obligation of the IOCs.⁷¹ This obligation depends, however, on whether the IOC is the only company responsible for the area of actuation or if it is working in cooperation with the State.

In regard to the responsibilities of the HC there are some main differences in the regimes. In the Concession, for example, the role of the state is to regulate and inspect the activities of E&P performed by the IOCs. In the PSC, however, the State not only regulates and inspects, but also acts directly in the activities of E&P, through the NOC, which can be the operator or not. This shows that in the PSC the Government can interact together with the IOC. Differently, for the contract of service the State has the lawful prerogative to act directly in the activity through its NOC, and can also subcontract companies with expertise in the diverse operational activities of E&P.

In most cases the State manages its functions through a department of oil or department of energy. The main function of the State in this contest is to inspect, supervise and monitor the activities concerning the oil industry. However, in countries where the State's only function is to supervise and monitor, it is usually created technical Government agencies in order to exercise these activities. On the other hand, in

⁷¹ Bill of Law 5.938/07, according to section I article 6

countries in which the State is more directly involved in the activities of E&P, the NOCs have a prominent role, and in some cases also take on a supervising role.

Regarding the risk of the activity assumed by the State in relation with the Concession regime, the State does not run exploratory risk nor a commercial risk when the oil is sold, as the IOC has the exclusive right to explore, extract, and trade the production.⁷²

Also in the Production Sharing Contract, the State does not run the exploratory risk, but it falls on the IOC to deal with all of the costs and carry out the necessary investments to explore and develop the field and produce hydrocarbons, being reimbursed through the cost oil. In the case of Production Sharing contracts the State does, however, partially assume the commercial risk, since the State gets its share of the production (profit oil), which it needs to sell to the market, and in this way assuming all the risk involved with fluctuations in the market price and so on.

Finally, in Contracts of Service, when the State signs a contract of service with clause of risk, the exploratory risk is contractually transferred to the IOC. If there is no clause, however, the State assumes all the exploratory risk. As regards to the commercial risk, this is transferred to the State, which is the unique and exclusive holder of the hydrocarbons produced.

5.8 Ownership of E&P Installation

There are four types of regimes regarding the properties utilized during Exploration and Production (E&P):

- a) the installation is originally the property of the HC both before and after E&P;
- b) the installation is property of the IOC and then transferred to the HC at the end of the contractual period;
- c) the installation is shared property between the HC and IOC, at a predetermined percentage belonging to each part. In case of Joint Ventures, the installations are transferred to the HC at the end of the contractual period.

⁷² Bill of Law 5.938/97 states that the State will not assume any risk related with activities of exploration, production and development.

- d) the installation is property of the IOC, without the possibility of transferring the installations to the HC.

As example of a property regime that is not characterized by the adopted model is found in Indonesia, where the PSC is applied and the installations and equipment acquired by the IOC are automatically transferred back to the State, at the beginning of its utilization. On the other hand, in the PSCs in Angola, the IOCs acquire the equipment utilized in the activities and these are then transferred to the HC only at the end of the contractual term. In case of Venezuela, that adopts the regime of Joint Ventures, the oil companies are holders of the assets as long as they are active, but must, however, transfer all of the assets to the HC at the termination of the project.

As general rule in the regime of Concession the property of the assets is transferred to the HC only at the end of the contract, by means of public interest.

5.9 Political Appeal

PSCs were first used in Indonesia in the 1960s, according to the Oxford Institute for Energy Studies, to boost the power of the Governments that felt oil companies always had advantage in Concession systems. The switch to PSC reversed the traditional relationship at the time by making the Government the owner of the oil.

This distinction does not guarantee a greater percentage of the earnings to the state, but it is politically appealing to leaders who want to show they are in control of national resources. The political element has been a key part of Lula's drive for PSCs, with supporters frequently repeating the mantra "Subsalt is ours."

5.10 Timing of Payments

In Concession regimes, companies frequently make large up-front payments—often in the hundreds of millions of dollars—during bidding rounds to boost their chances of winning rights to a field. This can be advantageous to Governments if they face budget shortfalls.

PSCs generally spread payments out over the life of the project. They may also include signing bonuses, though these are much smaller than in Concession systems.

5.11 Booking Reserves

Oil companies must tell investors how much oil they have access to, because this is a key indicator of their ability to maintain production and therefore revenues. Companies generally prefer Concession systems because this system allows the company to list all the reserves in its books. In a PSC, it can list only the barrels it keeps. Thus if a company agrees to give the Government 70 percent of the oil from a field, it can book only the remaining 30 percent.

5.12 Institutional Framework

Countries with limited oil field experience and weak state institutions often use PSCs because they are simple to create and require less Government supervision than a Concession system. They are frequently used by poor nations in Africa and Central Asia with unstable Governments and weak rules of law. Countries with greater oil industry expertise and tax collection capacity, such as in the United States and Norway, tend to use Concession.⁷³

5.13 Overview and Conclusion

The principle advantage for the HC, and also the main disadvantage for the IOC, under both the Concession and the PSA is that the investment of the IOC is not re-imbursed if petroleum is not found. Thus, the Concession regime represents more stability than the PSC regime for the IOCs in the initial phase.

It is clear that the Brazilian Concession regime and the Production Sharing Contract mostly have the same features and that they can be designed to achieve the same results. There are a few important differences, however. Under the PSC regime the IOC acts as

⁷³ Reports by Brian Ellsworth

a service-provider for the HC. This means that the Government can exercise a greater control over the oil companies than under the Concession regime.

Another difference between the PSC and the Concession arises due to the fact that the PSC are self-contained. In other words, under the PSA, the relations between the HC and the IOC is contractual. Thus, in countries with low institutional maturity or frequently changing legislation, the IOCs tend to prefer PSC because of increased stability and predictability: A change in the legislation will not affect the conditions under which the IOC operates to the same extent as under the Concession regime. Brazil, however, must be considered a mature country in this setting, and in terms of stability, the Concession is just as predictable as PSC.

6 Comparative Fiscal Analysis

6.1 Introduction

The fiscal mechanisms found in both the Concession and the PSC are signature and production bonuses, royalties, income tax and Government participation. Even though the petroleum policies may be different from country to country, most of them are derived with the objective to maximize the revenue and minimize the financial risk during petroleum operations.⁷⁴

There are several forms in which the producing country can obtain remuneration in the oil industry, especially in the upstream sector. The main mechanisms for the remuneration to the Government are:

- a) the bonus to be paid by the IOC for determined events;
- b) rent of the area to be paid to the holder of the land for the use during the period of operation (in the phase of exploitation or production), or payments by the retention of offshore area;
- c) royalties on the production;
- d) special remuneration on extraordinary profits of the IOC;
- e) division of the profit oil;
- f) taxes on the profit, which are directly affected by the income earned by the IOC during the period of production of the fields

The different regulatory systems will use some or all of these mechanisms to guarantee the Government takes.

6.2 Signature and Production Bonuses

Some Concession agreements and PSCs require the concessionaire/contractor to pay a

⁷⁴ Johnston, D., International petroleum fiscal systems and Production Sharing contracts. Tulsa, Okla, PennWell, 1994.

"bonus" on the date that the contract is signed or the license is granted. This bonus represents a very attractive form of revenue for the HC. Production bonuses are paid to the Government when production first reaches a given level, set out in the contract.

6.3 Royalties

The methods used to obtain remuneration in the different regimes vary. In case of Concession the Government participation comes in royalties. On the other hand, in PSC the remuneration process is materialized through the sharing the profit oil. The concept of royalty is not normally found in the PSC because of the issue of ownership. This is why many PSCs do not have royalty provisions. However, it is possible to find PSCs with royalties incorporated in their fiscal system. In Brazil, this is for example the case in Law 5938/09 which allows for royalties to be utilized as a revenue to compensate for the exploration of the petroleum. This provision is found in article 42 of Law 5938/09. Thus, the rules concerning royalties in the Concession system (Law 9.478/97) will remain also in the new PSC system until a new regulatory system is in place.

Royalties are interesting to Governments because they secure an upfront payment as soon as production starts. This is very important, especially in the Concession system when the company may be in a non-taxpayer position for income tax purposes during the first years of production. However, in the PSC case, the role of the royalty mechanism is not that important since the cost recovery limit mechanism will guarantee revenues for the Government during the first years of production also when the company is a non-taxpayer position.⁷⁵

In the Service Contract, the income is obtained by selling the produced oil. Finally, in the joint venture case, it comes through the share of profit of the operation.

⁷⁵ Nakhle, C., *Petroleum taxation: sharing the oil wealth: a study of petroleum taxation yesterday, today and tomorrow*. Abingdon, Routledge, 2008.

6.4 Income Tax

Income tax is found in both the Concession and the PSC regimes. However, its importance in the Concession regime is greater than in the PSC regime as it is the main source of revenues to the Government. In the PSC regime the role of income tax is outweighed by the Government profit oil.

6.5 Overview and Conclusion

Brazil has a Concession regime that has achieved good results and has had a very efficient fiscal system which has contributed to the development of the industry in the country. The main idea of PSC is the sharing of production and not profit. Although companies under a modern PSC regime are also subject to royalties and taxes, the principal source of revenues for the HC is the split of production.

Under a Concession regime the HC receives its share through taxation and royalties. One might say that the Concession regime uses the concept of profit sharing through royalties and taxes while a PSC regime uses the concepts of production sharing. In fact, there is not all that much difference between the two regimes when we consider the economic aspects, partly because both regimes utilize royalties, taxes and bonuses. Both systems are thus likely to produce the same economical results⁷⁶. Comparing the regimes from an economic perspective, it is thus probable that one arrives at similar Government takes regardless of what contract is in force. At this stage we might conclude that in order to reach a certain Government take, there is no need to change to the PSC regime in Brazil as a mere alteration of the Concession regime would obtain the same result.

⁷⁶ Johnston, D., International petroleum fiscal systems and Production Sharing contracts. Tulsa.Okla,PennWell, 1994.

7 Advantages and Disadvantages of the Different Regimes

In general both Concession and PSC can achieve the desired objectives of the Federal Governments, such as appropriation of wealth and investments in the sector through the IOCs. There are however a few differences in how efficiently and in what way the different regimes obtain these objectives, and in this chapter we look at these differences in some more detail with a special focus on the Brazilian sub-Salt.

7.1 Production Sharing Contract

The international experience of the PSC demonstrates both positive and negative aspects in its utilization. A positive aspect of the PSC regime is the way the HC is able to get its hand on the profit in a very efficient manner as it keeps a part of the production, *the profit oil*, and the share of the IOC is only transferred to the IOC at the wellhead. The Angolan model is a good example of this taken into consideration the way the rate of return (ROR) is used. However, before the HC can take its share, the IOC's have the right to take a share of the oil produced, in order to recover the costs of its investment (costs of capital and operational expenses). This share is also taken from the oil exploited, i.e., the *cost oil*.

The PSCs are self-contained, which means that they possess an autonomy and completeness so that an external regulatory organ is not necessary. In general, the IOCs prefer this model in countries with low institutional maturity, because they feel more protected, given the risks of political instability, absence of transparency and legal vagueness of the HC. This is positive in countries with unorganized tribunal systems, such as Angola and Indonesia, but in more organized countries where the OCs feel more secure, such as Norway and Brazil, this cannot be taken as a positive characteristic of the PSC.

Considering the positive aspects of the PSC we can already at this stage point out some of the motivations that the Brazilian Government has for changing the regime. The main motivations are: firstly, to increase the Government take of the profit and maintain the attractiveness of investing in E&P; secondly, permit that the HC do investments in the exploitation and production phase and establish additional presence of the HC in the activity through a new public agent (Petro-Sal); thirdly, permit Governmental control of the phase of production and the destination of the petroleum; and finally, maintain the possibility of participation of Petrobras in the new blocks.

One important negative aspect of PSC in the Sub-salt area in Brazil is the complexity involved with utilizing two systems in this area. As the Concession regime will remain in some of the blocks, applying the PSC in some or all of the new blocks will lead to two “parallel systems”. This requires two different regulatory frameworks that essentially are to obtain the same objectives, which may be a challenge. Another negative aspect is the difficulty with the harmonization necessary when different regulating models are combined.

The PSC is also considered a system that is hard to inspect and control for the Government because it is in general hard to compute the cost oil and profit oil. It is thus challenging to calculate the profit and how this is divided between the different parts.

7.2 Concession

Regarding the Brazilian Sub-salt the Concession regime is first of all easier to implement than the PSC because it represents a mere continuation of the existing regime. Taking into consideration that the Concession system was a good system for Brazil, it is in many aspects easier to improve an already existing system and obtain good results in this way, than to implement a completely new system in order to obtain good results. A continuation of the Concession regime is also favourable because some parts of the Sub-salt areas will continue with this system, and keeping to one system will reduce complexity.

The Concession is also easier to inspect than the PSC, as it is easier to divide the profit between the HC and the IOC than it is to calculate the profit and cost oil. In addition the Concession regime is also facilitated by the standardization of the contract used.

Even though the Concession regime represents several advantages, there are also objectives that are not obtained through this system. It has for example turned out to be difficult to implement the principles of “local content” through the Concession regime. This has been an important objective for the Brazilian Government and also an important motivation for abandoning the Concession. The Government thus believes that the local content will work more efficiently in under the PSC. This is still an open question though, and there are no guarantees that changing to the PSC regime will improve this.

From the Government’s point of view it is not favourable that the IOCs have complete control over the extracted petroleum. The Brazilian Government wishes to have more control over the petroleum in addition to take a greater cut of the profit. One way to do this, as the Government sees it, is to change to the PSC regime, under which they believe that they have more control. The fact that the HC is not directly involved with the production and only has a certain control over the technical aspects, has lead to a desire from the Government to create mechanisms that allows

8 Conclusion

The discovery of the sub-salt field in Brazil led to a discussion on how to best utilize the natural resources. As the sub-salt field is larger and the oil is of better quality than the rest of Brazil the Government understood that an alteration of the regime was necessary in order to guarantee the Government take and at the same time remain an attractive country for foreign oil companies to invest in.

There are two ways that the system can be altered: either through a mere continuation of the Concession regime with modified royalties and taxes, or by introducing a new system, such as the PSC. The Government chose to keep the Concession in the already developed areas and to introduce the PSC in all new blocks in the sub-salt field.

The alteration of the regime has led to much discussion, mainly because the Concession regime in Brazil was working well and it served to satisfy its main objectives. The Brazilian Concession system was highly regarded for its openness and transparency. The petroleum industry has also developed steadily under the Concession regime, which has also been taken as an argument for keeping this system. The predictability of the system has also made Brazil an attractive country for international companies to invest. Even though the PSCs are self-contained, and in this way represent more stability and predictability for the IOCs, the Concession regime in Brazil, due to Brazil's institutional maturity and transparency in the sector, it is not likely that the PSC regime will improve how the IOCs regard Brazil as an investment opportunity.

The quantity and quality of the sub-salt field has been used by the Government as an argument that exploring for oil in this area is a safe investment and that profit is more or less guaranteed, and because of this, there is a strong need to change the system in order to adapt to this new situation. The Government thus changed to the PSC regime in the remaining of this field in order to maximize the Government take. It is, however, a mis-

conception that the Government take automatically increases by introducing the PSC. We have shown that it is possible to obtain the same economic benefits for the HC through the Concession and the PSC and that both regimes are likely to produce the same economical result. Comparing the two regimes from an economic perspective one arrives at similar Government takes regardless of what contract is in force. The argument that changing to a PSC regime will increase the Government take is thus not necessarily true as the same results can be obtained by increasing for example the special participation rate in the existing Concession regime.

One advantage of keeping the existing regime is that this can be altered without the approval of the Parliament and alteration of the Constitution. Introducing the PSC will, however, require these alterations. This means that no sub-salt blocks will be made available for bidding until the Government has established a new regulatory framework for the sector.

Another motivating factor for changing the regime is to increase the Governmental control in the sector. In this thesis we have shown that the Government can exercise a greater control over the oil companies under the PSC regime than under the Concession regime. Because the IOC acts as a service-provider for the HC under the PSC regime the Government has more direct control over the IOCs and the production. In addition by introducing Petro-sal the Government's involvement in the industry will be more direct, something which is also guaranteed by the fact that Petrobras always has a share of at least 30% in the exploration. By changing to the PSC regime is thus likely that the Brazilian Government will have an increased direct control with the industry.

Norway has one of the highest Government takes in the world and operates under a Concession regime. The oil reserves in Norway also have many of the same characteristics as the sub-salt fields in Brazil. It is obvious that it would be possible for Brazil to develop these fields under the Concession regime and obtain the same objectives by following the Norwegian model. It is thus probable that the alteration of the regime from Concession to PSC is not economically but politically motivated.

Altering the regime does not guarantee a greater percentage of the earnings to the HC, but it is politically appealing to leaders who want to show that they are in control of national resources. The political element has been a key part of Lula's drive for PSCs, which is illustrated by repeatedly declaring that "Sub-salt is ours." The fact that the Government can exercise a greater control over the oil companies under the PSC than under the Concession regime also has a strong political appeal.

As we have seen, when the strategic and economic importance of the activities involved with E&P of hydrocarbons in Brazil are considered, guaranteeing that a sufficient part of the produced hydrocarbons end up in the State's hands is of vital importance. The fact that the petroleum is always the property of the Government under the PSC regime is also appealing for politicians who want to show that the oil is the property of the Brazilian people and not of the international oil companies.

The widespread use of PSCs illustrates well their efficiency as an institutional arrangement for risk sharing, even if they are inefficient in terms of economic theory. The fact that they are not extremely effective in terms of economic theory and that other regimes can obtain the same results can also be taken as an argument that changing to the PSA regime is politically motivated rather than economically motivated. The way we see it, the alteration of the regime that has been proposed for the sub-salt field in Brazil will not result in much change when it comes to the economic and regulatory parts of the operation. It will, however, bring with it a more complex system because an alteration is required, as opposed a mere continuation of the existing regime, and it will also require two regimes to operate one alongside the other. From the IOCs point of view we do not see that this alteration will change how Brazil will be looked at as an investment opportunity. Nor will the alteration result in much change when it comes to the expected profits of the IOCs or the risks involved with operating in Brazil. The IOCs will probably see some change when it comes to Government participation and control. This is probably also one of the main motivations for altering the system alongside with the political message that President Lula wants to give to the Brazilian people a few months before the election of the new president.

9 Bibliography

Brazilian Legislation

- Brazilian Federal Constituion 1988
- Law of Oil 9478/1997
- Bill of Law (PSC) 5938/2009
- Bill of Law (Petro-Sal) 5939/2009

Angolan Legislation

- República de Angola; “Lei das Actividades Petrolíferas” no 10/2004, de 12 de novembro de 2004.

Literature

- Jennings, A., Oil and Gas Exploration Contracts, Sweet & Maxwell, 2008
- Barrows, G. H. Worldwide Concession contracts and petroleum legislation, PennWell Books, 1983.
- Van Meuers, P., Financial and fiscal arrangements for petroleum development on economic analysis, 1988.
- Blinn, K. W., International petroleum exploration and exploitation agreements: legal, economic and policy aspects. London, Euromoney Publications, 1986.
- Babusiaux D., Oil and gas exploration and production reserves, costs, contracts, Paris edition, 2004.
- Bindemann, K., Production-sharing agreements: an economic analysis. Oxford,1999.
- Smith, E. E., International Petroleum Transaction, 2 edition, Ed. Rocky Moutain Mineral Law Foundation p.448, 1994.
- Bindemann. K., Production Sharing Agreements: an economic analysis. Oxford Institute for Energy Studies, 1999.
- Johnston, D., International Petroleum fiscal systems and Production Sharing contracts, Pennwell, 1994.
- Hossain, K., Law and policy in petroleum development:changing relation betewwen transnationals and Governments, 1979.

- Bunter, M.A.G., The promotion and licensing of petroleum prospective acreage. The Hague; London, Kluwer Law International, 2002.
- Nakhle, C., Petroleum taxation: sharing the oil wealth: a study of petroleum taxation yesterday, today and tomorrow. Abingdon, Routledge, 2008.

Articles

- Kuzhimora , A., Is it economically justified for oil producing countries to use Production Sharing Agreements? Case study: Kazakhstan, 2008.
- Oxford Energy Forum-Issue 63, Fiscal tightening: Striking the right balance.
- Deloitte. Government Take: http://www.deloitte.com/assets/Dcom-Brazil/LocalAssets/Documents/br_upstreamguide_govtake_2004.pdf, 2004.
- King & Spalding LLP, An Introduction to Upstream Government Petroleum Contracts: Their Evolution and Current Use. OGEL 3(1), 2005.
- BNDES - Studies of regulatory Oil and gas Production Chain in Brazil, 2009.
- Paliashvili, I., The concept of Production Sharing, 2008.

Websites

- www.ogel.org (oil and gas energy law intelligence)
- www.bndes.gov.br (Brazilian development bank)
- www.anp.gov.br (National Agency of Petroleum)
- www.petroleumworld.com
- www.petrobras.com.br

Other sources

- Interview with Luiz Antonio Lemos, lawyer and writer of the BDNES study about the future of the sub-salt.