

The Net Cash Flows Measurement of the Conventional Oil Production Sharing Contract (psc) Fiscal Systems

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ABSTRACT

Indonesia is the pioneer of the Production Sharing Contract (PSC), the first contract was signed in 1960. It is the standard of comparison for all PSCs (Johnston, 1994). According to the Executive Agency for Upstream Oil and Gas Business Activities in Indonesia (SKK Migas, 2014), PSC is a Petroleum Exploration and Production Agreement between the Authority Body and the Oil Contractor (OC). This study focuses on the oil industry, covering a PSC oil field which has been operating in Indonesia since 1998. The primary data of 2016 is used. The purpose of this study is to measure the yearly net cash flows received by the Government of Indonesia (GOI) and the OC during exploitation period, and to examine the attractiveness of the terms and conditions of the PSC. The basic features of PSCs are: first tranche petroleum (FTP), cost recovery (CR), profit oil (PO), domestic market obligation (DMO), and taxes. The financial issue of PSC is how costs are recovered and profits divided. The finding shows that from 100% Gross Revenue (GR) of the oil field in 2016; 35.43% of it is allocated to the GOI, and only 2.28% to the OC. Meanwhile, the CR for the year is 62.29% of the GR. Therefore, it is needed to manage the CR efficiently and effectively of both parties. It is recommended to limit the CR. Moreover, with the oil price that tends to decrease. The study will be beneficial for GOI and potential OCs to carry out a fair negotiation. This study will also facilitate the students and academicians to assess the correlation of variables of the PSC Fiscal Systems to be used in the decision-making process.

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INTRODUCTION

Indonesia's economy has experienced steady growth emerging from the Asian financial crisis of 1997-1999, averaging stable 5 - 6 % annual growth rate, and the strength of the country's economy was formerly based on its considerable oil exports

(Tharakan, 2015). There are many countries that depend on the income of oil exports such as Iraq, Kuwait, Saudi Arabia, Libya, Angola, Oman, Brunei, Kazakhstan, Russian, and much more (Hazarika, 2016). As a country with a continuity growing

economy, a critical component of Indonesia's future strength will be its ability to harness and manage sustainable sources of energy. The primary body responsible for governing the Indonesia's energy is the Ministry of Energy and Minerals Resources (MEMR). The MEMR (2015) estimates that domestic demand for energy will rise by around 7 % per year, with electricity demand alone projected to nearly triple between 2010 and 2030. According to National Energy Council (DEN, 2016), electricity consumption/capita was estimated to 2,500 KWh in 2025, and increase to 7,000 in 2050.

Based on the Decree of the MEMR no. 35, 2008, the objective of a host government (GOI) is to maximize wealth from its natural resources by encouraging appropriate levels of exploration and development activities. Therefore, GOI should designs and implements PSC fiscal systems that: provide a return to the state and to the industry; avoid undue speculation; limit undue administrative burden; provide flexibility; create healthy competition and market efficiency. Unfortunately, there were seven Working Areas (WA) offered for regular bidding during the period of July 18 to October 28, 2016, but none of the investor interested in the bidding (MEMR, 2016). More attractive incentives in PSC and fiscal terms may be needed for both parties to undertake the projects. The seven WAs are: 1) South CPP (On-shore Riau); 2) Oti (Offshore East Kalimantan); 3) Suremana (Makassar Strait); 4) Manakarra Mamuju (Makassar Strait); 5) South East Mandar (Off-shore South Sulawesi); 6) North Aguni (On-shore West Papua); and 7) Kasuri II (On-shore West Papua) (MEMR, 2016).

This study is focusing on the oil industry, covering one oil field under PSC Fiscal System which has been operating in Indonesia since the period of 1998, using the primary data of 2016. The purpose of this study is to measure the yearly net cash flows received by the GOI and the OC under PSC Fiscal Systems during exploitation period for the period of 2016, and to examine the attractiveness of the terms and conditions of the PSC. The findings of the study will be beneficial for GOI and potential oil investors to carry out a fair negotiation, to come up with the win-win solution. The outcome of this study will

also facilitate the students and academicians to assess the correlation of variables used in the PSC Fiscal Systems in order that the learning will be more practical and understood to be used in the decision-making process.

The study is organized into six sections. Section one captures the introduction, section two highlight the literature review about previous research on the development of oil in Indonesia, PSC fiscal systems, and the net cash flows measurement steps under PSC. Section three review the research methodology and research model. Section four discuss the finding and analysis, section five highlights the limitation and section six captures the conclusion and recommendation.

LITERATURE REVIEW

The Development of Oil and Gas Industry in Indonesia

Today's oil and gas companies may be involved in four different types of functions or segments: 1. Exploration and production (E&P); 2. Transportation; 3. Refining and processing; 4. Marketing and distribution. An integrated oil company is one involved in E&P activities as well as at least one of the four segments (Gallun, A.R, et.al, 2000). According to MEMR (2015), 40% of the total basins in Indonesia have been explored and located in Western Indonesia, and the remaining 60 % have not been explored and located in Eastern Indonesia. Those oil fields have been producing since the last decade, and it is getting drain due to over mature of the oil field. This condition should be balanced by increasing reserve replacement ratio. However, the ratios decreased from 52.2 % in 2012 to 44.42 % in 2013 due to lack of exploration and low discoveries.

In the case of oil production, table 1 also shows that the number of crude oil production decreased by 972 thousand barrels of oil equivalents per day in 2007 to 779 thousand barrels of oil equivalents per day in 2015, while the number of natural oil production increased from 7,238 thousand barrels of oil equivalents per day in 2007 to 8,102 thousand barrels of oil equivalents per day in 2015.

Table 1. Key Performance Indicator of Oil and Gas in Indonesia

Indicator	2007	2008	2009	2010	2011	2012	2013	2014	2015
Reserves									
Oil (Million Barrels)	8,400	8,220	8,000	7,760	7,730	7,410	7,550	7,370	7,370*
Proven	3,990	3,750	4,300	4,230	4,040	3,740	3,690	3,620	3,692
Potential	4,410	4,470	3,700	3,530	3,690	3,670	3,860	3,750	3,750*
**Gas (TCF)	165.00	170.10	159.63	157.14	152.89	150.70	150.39	149.30	149.30*
Proven	106.00	112.50	107.34	108.40	104.71	103.35	101.54	100.26	103.35
potential	59.00	57.60	52.29	48.74	48.18	47.35	48.85	49.04	49.04*
Production									
***Crude Oil (MBOPD)	972	1,006	994	1,003	952	918	825	789	779
***Natural gas (MMSCFD)	7,283	7,460	7,962	8,857	8,415	7,110	6,826	8,218	8,102

Source:

*2007-2014 Oil Proven and Potential Reserves: MEMR

*2015 Oil proven: EIA

**2007-2014 Gas Proven and Potential Reserves: MEMR

*2015 Gas proven: EIA New contract signed: MEMR # Using 2014 as an estimate as 2015 data not yet available

***2007-2012 Crude Oil and Natural Gas Production: BP Statistic Review of World Energy

***2013-2014 Crude Oil and Natural Gas production: SKK Migas Annal Report 2013-1014

***2015 Crude oil production: Ministry of Finance (State Budget Realization)

***2015 Natural gas production: SKK Migas

In terms of oil price, the industry experienced significant volatility in the global market (Frederer (1996), Beike et al. (2010), Anzuini et al. (2012). Regnier (2007) supported that the oil price has been volatile since its first oil crisis in 1973. The oil price in the global market decreased sharply from US\$145 per barrel in the mid of 2008 to about US\$40 per barrel at the end of 2008. Then oil price increased at US\$ 77.11 per barrel in 2010 and a higher increased at US\$91.39 per barrel in 2011 (Energy Today, 2015). However, the oil price decreased slightly at US\$88.95 per barrel in 2012 and a further decreased at US\$ 49.93 per barrel in May 2016. Surprisingly, the oil price in Indonesia was not in line with the changes of oil price in the global market. In 2008, the oil price was lower than the crude oil price in the global market, which is US\$96.13 per barrel and then it decreased sharply to US\$61.58 per barrel in 2009 (Indonesia Crude Price, 2009). And then there was an increase at US\$79.4 per barrel in 2010 and a sharp increased to 112.73 per barrel. However, it declined significantly to US\$ 49.46 per barrel in 2016 (MEMR, 2016).

In this industry, CNOOC Southeast Sumatera B.V is one of the biggest oil producers in China. In Indonesia, CNOOC field is located at Southeast Sumatera and divided into three main operation

areas: South Business Unit, Central Business Unit, and North Business Unit. The area is part of Sunda and Asri basins with 13,725km² wide at Latitude 04o30' South – Latitude 06o00' South and Longitude 106o00' East – Longitude 107o00' East. CNOOC has leading petroleum industry in Indonesia and become one of the first exploration oil and gas PSC for more than three decades. CNOOC PSC is released in September 6th, 1998. The CNOOC SES, Ltd and SKK Migas cooperation is lengthened for 20 years. During the time CNOOC SES, Ltd is the biggest crude oil offshore producer in Indonesia and has giving contribution to the state petroleum industry development during the last 34 years. Its production yielded more than one billion barrels' oil. The Cinta field, under CNOOC SES is used for the object of the research. (CNOOC SES, 2016).

Production Sharing Contract (PSC) Fiscal Systems

The oil and gas industry is uniquely characterized by: a high level of risk; a long time span before a return on investment is received; a lack of correlation between the magnitude of expenditures and the value of any resulting reserves; a high level of regulation; complex tax rules; specialized financial accounting rules (Gallun, R.A, et.al, 2000). The most important event in the operations of oil and gas company is the discovery of reserves.

Consequently, estimated reserves quantities are relied upon heavily in oil and gas accounting (Wright, C.J and Gallun, R.A, 2004).

Production sharing is rooted in the Napoleonic era French legal concept of the ownership of minerals, that mineral wealth should not be owned by individuals but by the state for the benefit of all citizens. Indeed, this philosophy is embodied in the 1945 Indonesian Constitution Article 33, which states: All the natural wealth on land and in waters is under the jurisdiction of the State and should be used for the benefit and welfare of the people (Lubiantara, 2013). Unlike most countries, private individuals own most of the surface resources in the United States (Williamson and Daum, 1959).

In the petroleum industry, Indonesia is the pioneer of the PSC, with the first contract signed in the early and mid-1960s. Indonesia is the standard of comparison for all PSCs (Johnston, 1994). According to SKK Migas (2014), PSC is a Business Agreement or a Petroleum Exploration and Production Agreement between the Oil and Gas State Company or Authority Body and Contractor. SKK Migas is the Executive Agency for Upstream Oil and Gas Business Activities in Indonesia, established by GOI. All mineral oil and gas existing within the statutory mining territory of Indonesia are national riches, controlled by the state. The government holds exclusive Authority of Mine. The OC has a Working Interest. The OC has the financial ability, technical competence, and professional skills necessary to carry out the Petroleum Operations. The OC is responsible to SKK Migas for the execution of operations in accordance with an agreed work. The term shall be 30 years from as from Effective Date. The OCs have permitted 6 years for exploration activity and have the option to request for 4 years' extension. If at the end of 6 years or the 4 years' extension thereto no petroleum commercial, the contract shall automatically terminate.

In the event that the OC which received to develop its first field in contract area does not produce petroleum in commercial quantities within a maximum 5 years after the end of the exploration

period, the OC shall be obliged to relinquish the contract area to GOI. The basic features common to most PSCs are: first tranche petroleum (FTP), cost recovery (CR), profit oil (PO) or Equity to be Split (ETS), domestic market obligation (DMO), and taxes. The financial issue of PSC is how costs are recovered and profits divided.

The OC is authorized by SKK Migas and obligated to market all crude oil produced and saved from the contract. OC will recover all operating costs out of the sales proceeds or other dispositions of the required quantity of crude oil equal in value to such operating costs. The OC shall be entitled to take and receive and freely export such crude oil.

According to Sadvakassov, D, Orazgaliyev, S. (2015), key factors in attracting Foreign Direct Investment (FDI) in the oil and gas industry of Kazakhstan emphasize that despite the presence of various motives in transnational corporation's investment decision, FDI to Kazakhstan mainly directed to the resource sector of the economy. According to Dunning (2000), one of the investment motives is "searching for new resources" involving the search for resources not available in a firm's home country, such as mineral, hydrocarbons, agricultural raw material, cheap labor, etc. According to Ferez, Irma G. Et al (2006), the capital budgeting model is a tool to analyze the behavior of Oil Company's investment and its oil potential. This model is an application of Optimization Techniques and it has been employed successfully. According to Primadona, Tjendrasa, K. (2016), a financial evaluation is conducted to four type of PSCs model system using discounted cash flow analysis. And according to Lestari, et.al (2015), PSC bounds the profit sharing agreement between the government and the oil contractor. PSC scheme explain cost recovery, FTP, DMO, valuation of oil and taxes, based on Presidential Regulation (PR) 79/2010.

The Net Cash Flows Measurement Steps under Production Sharing Contract (PSC)

In order to achieve the purpose of the research, which is to measure the net cash flows of the project under PSC, there are twelve steps should be done. First Step is oil price determination, which is

monitored globally and a key economic indicator for governments. According to Johnston (1994), production is shared in kind (barrels), and it is necessary to determine a price to convert oil to dollars in order to calculate cost recovery, taxes, and internal transfer. Effectively since April 1989, the Indonesian Crude Price (ICP) has been determined by the government monthly, based on moving average spot price of a basket of five internationally traded crudes: Indonesian (Minas), Malaysian (Tapis), Australian (Gippsland), United Arab Emirate (Dubai), and Oman.

Second, Oil Production per year calculation. Oil production generally goes to stock tanks for storage until it is delivered to a buyer. When the oil is sold, it is measured as it is transferred from the storage tanks to either a truck transport or an oil pipeline (Gallun, R.A, et.al, 2000). The oil production per year is derived from daily production of oil multiplied by the number of days in a year. The equation can be expressed as *Oil Production per year = Volume or Barrel of Oil per day x 365 day*.

Third Step, Gross Revenue (GR) per year calculation. The GR per year is derived from barrel oil production per year, which is the result of the second step, multiplied by the oil price per barrel, which is stated in the first step. The equation can be expressed as *Gross Revenue per year = Oil Production per year x Oil price per barrel*.

Fourth Step, pre-tax and post-tax calculation, charged to both Oil Contractor and State. The amount of production share between the state and the OC which is stated in the PSC document is a pre-tax sharing, or a pre-tax split. It is also stipulated in the contract that the OC will be charged of income tax based on the prevailing tax regulation. According to Lubiantara (2013), the income tax rate

of Indonesia has been decreasing since before 1985, which was 45% to 25% in 2010 as shown in Table 2. The current income tax regulation no. 36/2008 states that the effective income tax rate per January 1, 2009 was 28%, and then it had been decreasing to 25% in 2010 up to now. Besides income tax, the OC is also charged with the tax of interest, dividend, and royalty (TIDR) amounted to 20%. Therefore, the total tax for the OC is calculated with the formula as *The Total Tax of the Oil Contractor (OC) = (1 - Income Tax Rate) x TIDR + Income Tax Rate*.

Accordingly, the derivation of the pretax contractor shares from a given post tax contractor share is calculated with the equation as *Post-tax percentage = Pre-tax percentage x (1 - Total Contractor Tax Rate)*. Therefore, the equation for Pre-tax percentage = $\frac{\text{Post-tax percentage}}{(1 - \text{Total Contractor Tax Rate})}$. The percent used as the post-tax may appear to be low. It is low because it has been adjusted for the income tax effect (Anthony, et.al, 2011). The effective income tax rate is an integral part of the PSC. Therefore, the rate in a contract does not change. If subsequently the government decides to change the rate, then the new rate applies only to new contracts. The rate in contracts already signed remains the same.

The fifth step is First Tranche Petroleum (FTP) calculation. According to Johnston (1994), with the fourth-generation contracts outlined in the 1988-1989, incentives packages, a new contract feature was introduced, namely FTP. The top left-hand side of figure 1 shows that the first claim on gross revenue derived from hydrocarbon sales is FTP which is split between the OC and the state. FTP is the oil shared by the parties in PSC before the cost recovery. Usually the FTP shared is between 10% - 20% of oil production. The FTP mechanism was applied at the first time in 1988 for the Indonesian PSC. Currently FTP is 20%. These are the guarantee

Table 2. The Changes of PSC Tax Rate

	PSC (2010-Present)	PSC (2009)	PSC (1994-2009)	PSC (1904-1994)	PSC (Before 1985)
Income Tax Rate	25%	28%	30%	35%	45%
Tax Rate of Interest, Dividend and Royalty, 20%	15%	14,40%	14%	13%	11%
Total Tax for the Oil Contractor	40%	42,40%	44%	48%	56%

Source: Lubiantara (2013)

for the government to get the sharing part. Such FTP for each calendar year is further shared for crude oil between the State and the OC in accordance with the sharing splits.

The sixth step is Cost Recovery (CR) calculation. After FTP, the contractors are allowed to recover their costs plus an investment credit (IC) if any. Cost recovery is the cost that must be recovered by the government for all investment that the contractor has spent on oil production. Cost recovery is the sum of lease operating costs, production taxes, general and administration expenses, and depreciation, depletion, and amortization of capital expenditures. Operating Expenses shall include all expenditures incurred in the abandonment of all exploratory well and the restoration of their drill sites (Johnston, 1994). The Equation can be expressed as *Cost Recovery = Operating Expenses + (Depreciation + Depletion + Amortization) of the Capital Expenditures.*

The seventh step is Investment Credit (IC) allocation. According to CNOOC SES (1998), the OC may recover an investment credit (IC) amounting to 17% of the capital investment costs directly required for developing crude oil production facilities of each new field out of deduction of gross production before recovering operating costs, commencing in the earliest production year or years before tax deduction (to be paid in advance in such production year when taken. Eight Step, Profit Oil (PO), or Equity to be Split (ETS) calculation. The revenue remaining after FTP and cost recovery is profit oil (PO) which is split between the state and the OC at different proportions depending on the PSC agreement.

Ninth Step, Domestic Market Obligation (DMO) calculation. According to CNOOC SES (1998), under the DMO provisions, the contractor is obliged to sell to Indonesia a portion of their oil at less than market price. The DMO applies after five years from the start of production. In each year after the fifth year of production, the contractors are obliged to sell an amount of the oil to which they are entitled from FTP and Profit Oil. The amount is calculated firstly by calculating the lower of: a) the total domestic

consumption of crude oil in Indonesia divided by the total domestic production of crude oil in Indonesia or b) 25%. Currently, the fraction (a) is significantly more than 25%. Therefore, the 25% figure applies. The equation of DMO can be expressed as follows; *DMO in barrel=25% x The Contractors' entitlement percentages x oil production per year in barrels. And DMO Fees=DMO in barrels x Oil Price per barrel.*

Tenth step, Income Tax Calculation of the Oil Contractor calculation. The equation can be expressed as *Income Tax Expenses of the OC=(FTP of OC + Profit Oil of OC-DMO Fees of State) x Total Tax Rate of the OC.* The eleventh step is Net Cash Flow (NCF) calculation of the Oil Contractor and the State. The equation can be expressed as *NCF of OC=FTP of OC+Profit Oil of OC-DMO Fees of State-Income Tax Expenses of OC.* Than *NCF of State=FTP of State+Profit of State+DMO Fees of State+Tax Income of State.* Finally, the twelfth step is to check the calculation result. The equation can be expressed as *Total NCF = Gross Revenue-Cost Recovery = NCF of the OC + NCF of the State.*

RESEARCH METHODOLOGY

Based on the ideas mentioned above, the study adopted a model from Lubiantara (2013) as shown in Figure 1. It illustrates the general way in which the after tax net cash flows for both state and contractor shares are derived.

The primary data used for calculation is collected from the Cinta field. The field was founded in 2nd September 1970 by CNOOC SES and was producing since 10th September 1971. The field has 21 production platforms with 3 processing platforms. Currently total active well is around 350 wells with total productions about 35,000 barrels oil per day (BOPD) (CNOOC SES, 2016). Table 3 shows the economic parameters for the calculation.

Figure 1. Structure of Conventional Indonesian PSC

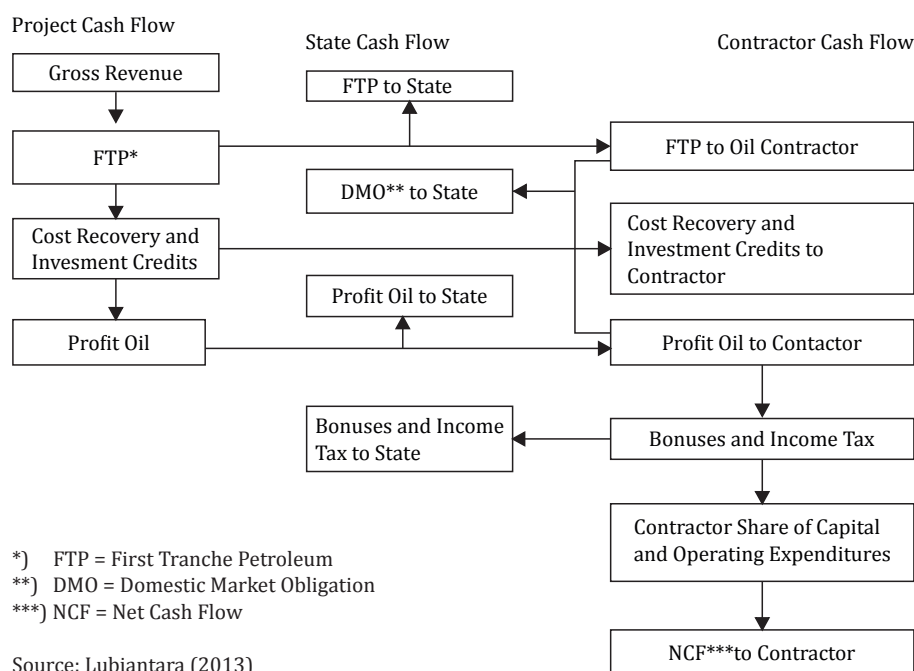


Table 3. The Economic Parameters for Calculation for the period of 2016

Production Oil	BPOD	35,000.00
Oil Price	US\$/bbl	55
Firs Tranche Petroleum (FTP)	%	20%
Government Sharing After Tax	%	85%
Contractor Sharing After Tax	%	15%
Total Tax Rate	%	48%
Corporate Tax Rate	%	35%
Dividend Tax Rate	%	20%
Government Sharing Before Tax	%	711538%
Contractor Sharing Before Tax	%	288462%
Cost Recovery	U\$\$	437,689,000.00
DMO Free, pre 1987 production	\$/bbl	0.2
DMO Free, post 1987 production	%	10%

Source: Cinta Oil Field, CNOOC SES (2016)

RESULTS AND DISCUSSIONS

Table 4 provides the results which calculates a step by step in Net Cash Flow measurement based on the data expressed in the table 3.

Figure 2 shows the summary of the NCF measurement which is done through the twelve steps above. The GR of 2016 is US\$ 702,625,000 (100%). The total of NCF is US\$ 264,936,000 (37.71% of the GR). The NCF of the GOI is US\$ 248,909,168.107, or 35.43% of the GR. On the other hand, the NCF of the OC is US\$ 16,026,831.893, or

only 2.28% of the GR. In terms of CR of 2016, which was incurred of US\$ 437,689,000.00 of the year, is very significant percentage of the GR, or 62.29%. Therefore, it is very important to manage the CR efficiently and effectively from both parties. It is better if there is a limitation of the CR in the PSC. Moreover, with the volatility of oil prices that tends to decrease in recent years.

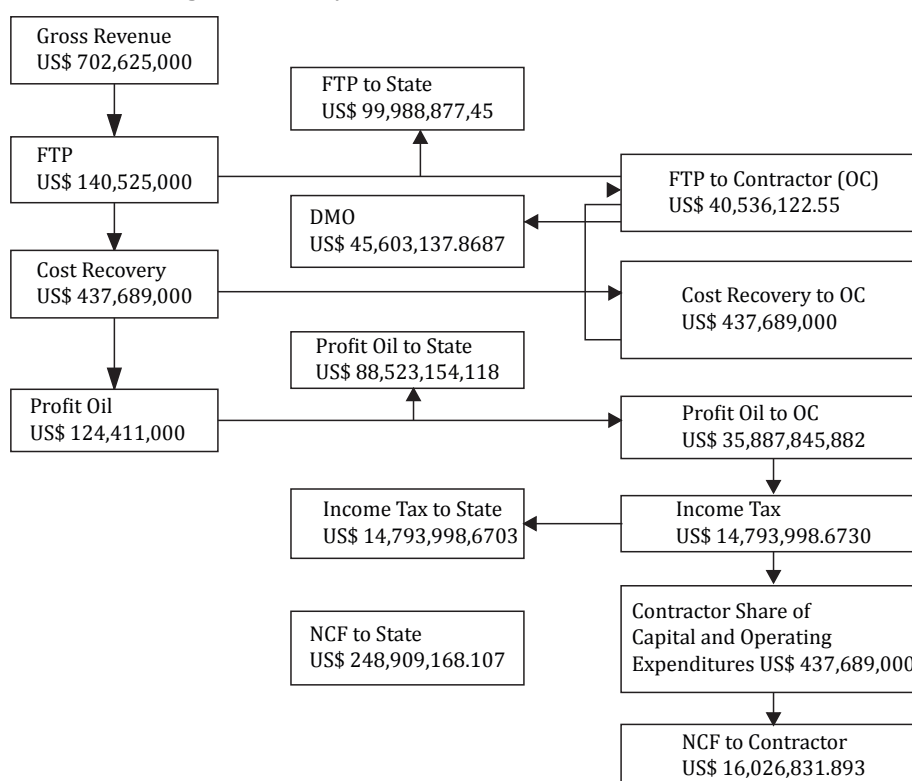
LIMITATIONS AND FUTURE INDICATIONS

This study has expanded the literature about conventional oil PSC fiscal systems in the real working world only in 2016. In near future, it is suggested to carry out research with many companies in the oil industry to get more generalizes result. Since the focus is on one industry, it is worth to explore it on a wider scale and find out if different company yields the same result. In addition, the study only focuses on financial aspects. Therefore, the research would be better if also includes the non-monetary considerations, such as legal, operational, political, and administration. It is also suggested to carry out a similar research for other industries, such as mining, gas, geothermal, or estates industry.

Table 4. The Steps of the Net Cash Flow Measurement

The Net Cash Flow Measurement	
1	The Oil Price used in this research of 2016 as shown in Table 2 is US\$ 55 per barrel.
2	The Oil Production of 2016=365 days x 35,000 BOPD=12,775,000 barrels oil.
3	GR of 2016=12,775,000 barrels x US\$ 55=US\$ 702,625,000.00
4	Pre-tax share for the OC= $\frac{15\%}{(1-48\%)}$ =28.8462% Pre-tax share for the state=100%-28.8462%=71.1538%
5	FTP=20% x US\$ 702,626,000.00=US\$ 140,525,000.00 FTP Share for the OC=28.8462% x US\$ 140,525,000.00=US\$ 40,536,122.55 FTP Share for the State=71.1538% x US\$ 140,525,000.00=US\$ 99,988,877.45
6	The cost recovery incurred in the field for 2016 is US \$ 437,689,000.00.
7	There is no investment credit incurred in the field for 2016.
8	Profit Oil or Equity to be Split =US\$ 702,625,000.00-US\$ 140,525,000.00-US\$ 437,689,000.00 =US\$ 124,411,000.00 Profit Oil Share for the Oil Contractor=28.8462% x US\$ 124,411,000.00=US\$ 35,887,845.882 Profit Oil Share for the State=71.1538% x US\$ 124,411,000.00=US\$ 35,887,845.882
9	DMO in barrel=25% x 28.8462% x 12,775,000 barrels=921,275.5125 barrels DMO Fees=921,275.5125 barrels x US\$ 55=US\$ 50,670,153.1875 DMO Fees of the Oil Contractor=10% x US\$ 50,670,153.1875 =US\$ 5,067,015.31875 (based on the DMO rate after the production of 1987) DMO Fees of State=US\$ 50,670,153.1875 -US\$ 5,067,015.31875=US\$ 45,603,137.8687
10	Income Tax Expenses of the Oil Contractor =(US\$ 40,536,122.55+US\$ 35,887,845.882-US\$ 45,603,137.8687) x 48% =US\$ 14,793,998.6703
11	NCF of Oil Contractor=US\$ 40,536,122.55+US\$ 35,887,845.882-US\$ 45,603,137.8687-US\$ 14,793,998.6703 = US\$ 16,026,831.89 NCF of State=US\$ 99,988,877.45+US\$ 88,523,154.118+US\$ 45,603,137.8687+US\$ 14,793,998.6703 =US\$ 248,909,168.107
12	To prove the calculation: Total NCF=US\$ 702,625,000.00-US\$ 437,689,000.00=US\$ 16,026,831.893+US\$ 248,909,168.107 37.71% of the GR=100%-62.29% of the GR=2.28% of the GR+35.43% of the GR

Figure 2. Summary of the Net Cash Flow Measurement



CONCLUSION AND RECOMMENDATION

This study is focusing on the oil industry, covering one oil field under PSC Fiscal System which has been operating in Indonesia since the period of 1998, using the primary data of 2016. The purpose of this study is to measure the yearly net cash flows received by the GOI and the OC under PSC Fiscal Systems during the exploitation period of 2016, and to examine the attractiveness of the terms and conditions of the PSC.

The finding shows that from 100% Gross Revenue (GR) of the oil field in 2016; 35.43% of it is allocated to the GOI, and only 2.28% to the OC. Meanwhile, the CR for the year is 62.29% of the GR. Therefore, it is needed to manage the CR efficiently and effectively of both parties. It is recommended to limit the CR. Moreover, with the oil price that tends to decrease. The study will be also beneficial for GOI and potential OCs to carry out a fair negotiation.

The findings of the study will be beneficial for GOI and potential oil investors to carry out a fair negotiation, to come up with the win-win solution. Since the percentage of the CR is more than 60% of

the GR, it is recommended to manage the CR efficiently and effectively. The GOI through the Executive Agency for Upstream Oil and Gas Business Activities in Indonesia (SKKMigas) have to play stronger role in controlling the expenditures.

Oil business requires high capital, high technology, high risks, long-term commitment, but may be high returns. However, the GOI should think deeply how to invite the investors to participate in the business. The GOI may change the terms and conditions of the current PSC fiscal systems in order to attract the investors, but still favorable for the GOI. It is suggested that in the long run, the GOI should substitute the oil with other energy, such as renewable energy: geothermal, wind, biomass, hydro, solar PV, and micro-hydro. The country should not always depend on oil forever, it should transform from non-renewable energy to renewable. The outcome of this study will also facilitate the students and academicians to assess the correlation of variables used in the PSC Fiscal Systems in order that the learning will be more practical and understood to be used in the decision-making process.

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