

Performance Measurement for Oil and Gas Companies: Functional Currency

by

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Abstract

The oil and gas upstream industry is dynamically changing, and yet, it is hard to determine which companies outperform the others. It is important to have a yardstick to measure the performance of oil and gas upstream companies. Functional currency is the currency of the primary economic environment in which an entity operates (Eiteman et al., 2016). Adopting a strategic approach to selecting functional currency is essential when this is used as a performance measurement tool. This study categorized oil and gas companies into four groups: (1) major oil companies, (2) national oil companies, (3) national flag oil companies, and (4) others (independent oil and gas companies) to identify the general tendencies. The survey results revealed that major oil companies all use US\$ as their functional currency. Both national oil companies and national flag oil companies use their local currencies as the functional currencies. Independent oil and gas companies use the same currency as their functional currencies and presentation currencies. This paper identified five examples of changing functional currency in the past and revealed that management's discretion to change the functional currencies is somehow limited, and that management need to "leverage" some events to operate the change.

1) Introduction

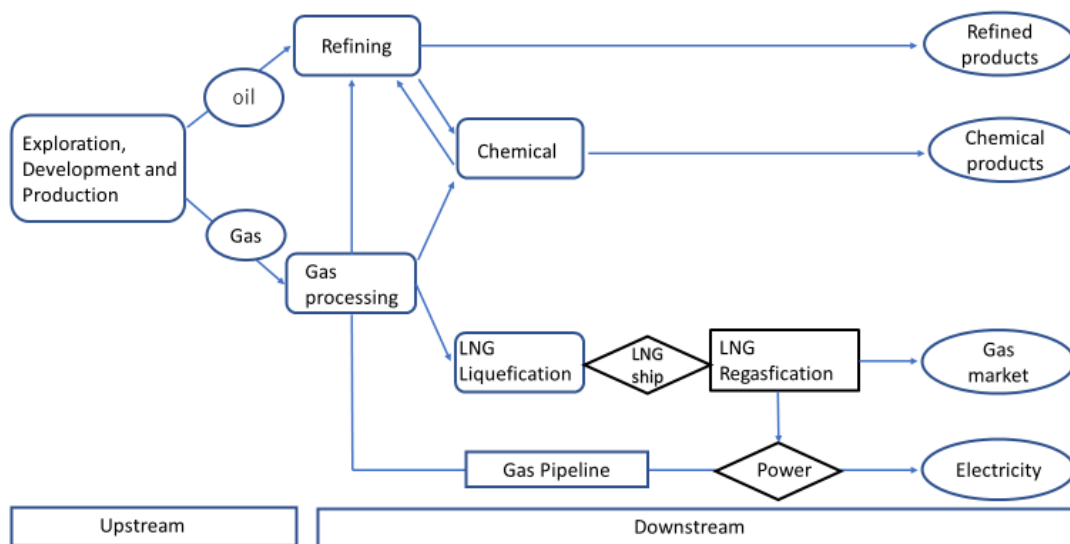
The oil and gas upstream industry is dynamically changing. These changes have been driven by new technologies, and have a great impact on human life (Yergin, 1990). The "shale revolution" in the US is having a global impact (BP Global, 2016), and is a typical example of how dynamically the oil and gas industry has been evolving. The participants of the oil and gas sector range from large national oil companies to small independent companies. To determine which companies outperform the others, it is important to identify a yardstick to measure the performance of oil and gas upstream companies.

Functional currency is the currency of the primary economic environment in which an entity operates (Eiteman et al, 2016). It is important to adopt a strategic approach to selecting functional currency, when used as a performance measurement tool. Japanese accounting standards do not contemplate the concept of "functional currency," unlike other internationally accepted accounting standards, such as the International Financial Reporting Standards (IFRS) and the US Generally Accepted Accounting Principles (US GAAP) (PwC Japan, 2016). Due to this discrepancy in the Japanese accounting standards, issues regarding functional currency, especially for oil and gas upstream companies, have not been highlighted in Japan. Some studies only focused on issues relating to foreign currency translation and did not focus on other subtle issues that could influence their business. Functional currency issues are likely to emerge as oil becomes a more strategic commodity. In practice, there must be some reasons behind choosing a functional currency.

Some companies have vertically integrated in operation from upstream to downstream while some companies only have their footprints in upstream or downstream. The focus of study is about the companies in the oil and gas upstream sector.

Diagram 1. Value chain of oil and gas

Source: Various webpages



The UK North Sea is the area where mature oil and gas production fields are located. Registered companies are required to disclose their financial statements to a website called Companies House¹ in accordance with regulations, regardless of whether they are listed or not. A data survey of the annual reports of the subsidiary companies of top 50 large oil and gas companies, as ranked by Petroleum Intelligence Weekly (PIW) (Table 3), was conducted to identify an oil and gas upstream project where the participating companies chose different functional currencies. Some companies only disclosed the names of their parent companies and not the full names of their subsidiary companies. Some companies formed a single entity as a joint venture but did not choose to form unincorporated joint ventures. The survey narrowed down these cases to find a single project under unincorporated joint ventures whose functional currency differed from that of other participating companies.

The Alba field in UK North Sea is operated by Chevron North Sea Limited, a subsidiary company of Chevron. None of the companies in Table 1 had selected the US GAAP as their accounting rules. According to Chevron, the Alba field lies about 130 miles (210 km) northeast of Aberdeen, Scotland, in the UK Central North Sea, with water depths of approximately 453 feet (138 m). Its first production was achieved in January 1994. The Alba field interests are held by the following shareholders.²

Table 1. Participants in the Alba Field in the UK North Sea and their parent companies

Participating Companies	Participants				Parent Companies	
	%	Accounting Rules	Functional Currency	Presentation Currency	Nationality	Functional Currency
(1) Mitsui E&P UK	13.30	IFRS	US\$	US\$	Japan	Japanese Yen
(2) Statoil UK ³	17.00	UK GAAP	GBP	GBP	Norway	US\$
(3) Chevron North Sea	23.37	UK GAAP	GBP	GBP	USA	US\$
(4) Centrica Resources ⁴	12.65	UK GAAP	GBP	GBP	UK	GBP
(5) Endeavour Energy UK	25.68	IFRS	US\$	US\$	USA	US\$
(6) EQ Petroleum Sabah	1.20	UK GAAP	US\$	US\$	UK	US\$
(7) EnQuest Production	6.80	UK GAAP	US\$	US\$	UK	US\$
	100					

¹ Webpage of Company House, <https://beta.companieshouse.gov.uk/>

² Webpage of Chevron United Kingdom, <http://www.chevronunitedkingdom.com/our-businesses/operated-assets/alba/>

³ The financial statements of Statoil UK did not explicitly identify the functional currency but the notes indicated it.

⁴ The financial statements of Centrica Resources did not explicitly identify the functional currency but the notes indicated it.

Note: Accounting principles, functional, and presentation currencies as of December 2015, except for Mitsui & Co., Ltd, a parent company of Mitsui E&P UK Ltd. in Japan, which is as of March 2016.

Sources:

- (1) Mitsui E&P UK Ltd., Annual Report, 31 December 2015, Register No. 07652477
- (2) Statoil (UK) Ltd., Annual Report, 31 December 2015, Register No. 1285743
- (3) Chevron North Sea Ltd., Annual Report, 31 December 2015, Register No. 01546623
- (4) Centrica Resources Ltd., Annual Report, 31 December 2015, Register No. 02855151
- (5) Endeavour Energy UK Ltd., Annual Report, 31 December 2015, Register No. 05030838
- (6) EQ Petroleum Sabah Ltd., Annual Report, 31 December 2015, Register No. 7211014
- (7) EnQuest Production Ltd., Annual Report, 31 December 2015, Register No. 01019831

The participants in the Alba field carried out the same project under very similar business conditions; however, they chose different functional currencies. The operator of the Alba field is Chevron North Sea Ltd. and their functional currency is GBP under the UK Generally Accepted Accounting Principles (UK GAAP), while Mitsui E&P UK Ltd. and some others use US\$ as their functional currency. Managements of the participating companies have the ability to choose their functional currencies at their discretion, provided it fulfills the parameters specified by the accounting rules.

2) Previous Literature and Research Questions

Some scholars have previously explored the topic of functional currencies. Revsine (1984, p. 514) pointed out the possibility that the misuse of Financial Accounting Standard Board (FASB) guidelines may lead to the incompatibility of financial statements since firms would be “ill-advised to select the functional currency in order to gain some near-term income enhancement.”

Arnold and Holder (1986) interviewed the executive managers of 22 multinational companies in the US. They found that among the 18 companies whose functional currencies were local currencies, only five companies took formal steps to address the six indicators required by the FASB 52, namely: (1) cash flow indicators, (2) sales price indicators, (3) sales market indicators, (4) expense indicators, (5) financing indicators, and (6) intercompany transactions and arrangements indicators. Arnold and Holder (1986) also pointed out that all the four companies, whose functional currency was US\$, used the FASB 52 indicators properly. This survey showed that, in practice, the management of US multinational companies exercised their discretionary power in selecting their functional currencies under FASB 52, especially those companies whose functional currencies were local currencies.

Douppnik and Evans (1988) pointed out that among the 338 multinational corporations that selected a foreign currency as their functional currency as of 1983, only 126 companies had appropriately selected their functional currency. They also pointed out that among 102 cases that selected US\$ as their functional currency, 99 cases had followed the appropriate procedures and decided the US\$ as their functional currency. This study indicated that companies that had chosen US\$ as their functional currency adhered to FASB rules more strictly.

Mehta and Thapa (1991) discussed some US multinational companies and the functional currencies of their subsidiary companies. They pointed out that the subsidiary companies of Exxon (ExxonMobil) used local currencies as their functional currencies, except for operations in highly inflationary economies, such as, Norway, Malaysia, and the Middle East, where US\$ is the functional currency. The subsidiary companies of Texaco (Chevron), on the other hand, used US\$ as their functional currency. Both Exxon and Texaco had carried out similar operations under the US GAAP through their overseas subsidiary companies; however, the former had chosen the local currency, while the latter had chosen US\$ as the functional currency for their respective overseas subsidiary companies. Mehta and Thapa (1991) also pointed out that some multinational companies in the US had changed their functional currencies in the past, including Exxon (ExxonMobil) that changed the functional currency of its Norway operation from US\$ to the local currency in 1985. Other companies were Data General, General Electric, and Caterpillar Tractor, whose overseas subsidiary companies' functional currency was originally the US\$ but was changed to their respective local currencies in the mid-1980s.

Nobes (2006) pointed out that an entity's functional currency in the UK would generally be that of its country of operation. Aoki et al (2016) discussed the same trend in Japan, pointing out that 54 out of the 61 companies in Japan, who had adopted the IFRS, used the current method for currency translation, which indicates that the functional currency must be the local currency.

The cargoes of crude oil and refined oil products as well as liquefied natural gas (LNG) have been internationally bought and sold largely in US\$ as a business custom for a long time (PwC Japan, 2016). However, oil and gas upstream companies must choose a functional currency to report their financial statements in accordance with accounting principles. This study aims to explore the following research questions: Do the managements of oil and gas companies have the ability to choose their functional currencies discretionaly? If so, do they also have the ability to change them discretionaly? Why do the managements of oil and gas companies change their functional currency? What type of events cause functional currency changes? Do functional currencies differ depending on the type of energy company? Are the general trends among oil and gas upstream companies considered in choosing functional currencies? If so, why do the functional currencies differ? Thus, it is necessary to shape accounting strategies to address these issues related to functional currencies.

3) Data Survey – Functional Currencies of the Top 50 Oil and Gas Companies

The following data used in the survey was obtained from the financial statements of oil and gas upstream companies and industrial research paper by PIW. PIW has been ranking the top tier energy companies for more than 25 years⁵. The list of the top 50 companies ranked by PIW is shown in Table 2.

Table 2. Top 50 rankings of the World's Oil Companies in 2016

Rank	Company name	Country	Rank	Name of company	country
1	Saudi Aramco	Saudi Arabia	26	EGPC	Egypt
2	NIOC	Iran	27	Pertamina	Indonesia
3	CNPC	China	28	Statoil	Norway
3	Exxon Mobil	USA	29	ConocoPhillips	USA
5	PDV	Venezuela	30	CNOOC	China
6	BP	UK	30	Repsol	Spain
6	Rosneft	Russia	32	Kazmunaigas	Kazakhstan
8	Royal Dutch Shell	Netherlands	33	Libya NOC	Libya
9	Gazprom	Russia	34	PDO	Oman
10	Total	France	35	Novatek	Russia
11	Chevron	USA	36	Ecopetrol	Columbia
12	Petrobras	Brazil	37	BG	UK
12	Sonatrach	Algeria	38	CNR	Canada
14	KPC	Kuwait	39	Uzbekneftegas	Uzbekistan
15	Adnoc	UAE	40	Anadarko	USA
16	Lukoil	Russia	41	YPF	Argentina
17	QP	Qatar	42	Devon	USA
18	Pemex	Mexico	43	Inpex	Japan
19	Petronas	Malaysia	44	Reliance	India
20	Sinopec	China	45	Chesapeake	USA
21	INOC	Iraq	46	EOG	USA
21	NNPC	Nigeria	47	BHP Billiton	Australia
23	Eni	Italy	47	Occidental	USA
24	Surgutneftegas	Russia	47	Suncor	Canada
25	ONGC	India	50	Tatneft	Russia

Source: Petroleum Intelligence Weekly (2016)⁶

⁵ Webpage of Energy Intelligence, <http://www.energyintel.com/pages/pr-piw-top-50-2015.aspx>

⁶ Webpage of Energy Intelligence, <http://www.energyintel.com/pages/pr-top100-ranking-2016.aspx>

Kikkawa (2010) categorized these 50 companies into three categories.

(1) Major Oil Companies

Kikkawa (2010) categorized only four companies, ExxonMobil, Royal Dutch Shell, BP, and Chevron, as major oil companies. All four companies were transformed from companies belonging to the “Seven Sisters” companies that once dominated the oil and gas industry⁷. “Seven Sisters” is the term used to identify a group of international oil companies that included Exxon, Mobil, and Chevron—the successor entities of the Standard Oil Trust, which was dissolved after the US Supreme Court’s decision in 1911, and the remaining four companies were Gulf Oil, Texaco, British Petroleum, and Shell. They were transformed over the years into the current organizations. *Total* in France is considered as one of the super major oil companies (PwC Japan, 2016), but it was excluded intentionally.

(2) National Oil Companies

NOCs refer to companies that have more than 50% of their shares held by its own government with a surplus energy balance (exporting position) (Kikkawa 2010, p. 100). Examples of NOCs mentioned by Kikkawa (2010) were Aramco-Saudi, NIOC-Iran, PDVSA-Venezuela, Pemex-Mexico, KPC-Kuwait, Sonatrack-Algeria, Gazprom-Russia, Rosneft-Russia, Lukoil-Russia, Petrobras-Brazil, and Adnoc-UAE.

(3) National Flag Oil Companies

National flag oil companies refer to energy companies that are wholly or partially owned by governments whose origin countries’ energy balances are in a position of importing oil and gas (Kikkawa, 2010). *Total* in France is considered as one of the super major oil companies; however, Kikkawa (2010) intentionally categorized *Total* as one of the national flag oil companies, since more than 30% of *Total* was owned by the French government until the early 1990s. Examples of national flag oil companies, as mentioned by Kikkawa (2010), were CNPC-China, Sinopec-China, Total-France, Eni-Italy, and Repsol YPF-Spain⁸. Although Kikkawa (2010) did not mention BG-UK in 2010 and it is not currently owned by its respective government, this survey includes BG as a national flag oil company since it originated from its government.

The author created another category for the rest of the companies, namely “Others” (independent oil and gas companies).

(4) Others (independent oil and gas companies)

The remaining companies, not belonging to categories (1) to (3) above, fall into this category. These companies are free from government control as they are not shareholders. Next, the top 50 companies’ functional currencies were obtained from their financial statements as below.

⁷ The changing competitive landscape of the global upstream petroleum industry, *Journal of World Energy Law and Business*, 2015, Vol. 8, No. 1

⁸ The Argentina Government took over YPF in 2012 from Respol. YPF is categorized as a NOC in this paper.

(A) Major Oil Companies

Table 3. Major Oil Companies

Rank	Name	Country	Currency in annual report		Gov't (%)	Conformity
			Functional	Presentation		
3	Exxon Mobil	USA	US\$	US\$	—	USGAAP
6	BP	UK	US\$	US\$	—	IFRS
8	Royal Dutch Shell	Netherlands	US\$	US\$	—	IFRS
11	Chevron	USA	US\$	US\$	—	USGAAP

Note: Functional and presentation currencies as of December 2014.

Source: PIW (Table 2) and each company's financial statements

All four companies, ExxonMobil, Shell, BP, and Chevron, use US\$ as their functional currency. Two US companies, ExxonMobil and Chevron, adopted the US GAAP, while the remaining two non-US companies, Shell and BP, adopted the IFRS as their accounting principles. Although *Total* in France is considered a major oil company, Kikkawa (2010) delisted *Total* in France from this category since *Total* is not a company considered as one of the Seven Sister companies. All companies in this category have US\$ as their functional currency.

(B) National Oil Companies

NOCs hold a dominant position in the oil and gas upstream industry. Some companies in Table 4 did not disclose their functional currencies because they were not listed companies in any open stock markets. The fact that they were not open to disclosing their accounting principles may explain the mindset gap between state-owned companies and other non-state-owned energy companies. While privately held companies seek to maximize their shareholder value, state-owned companies do not necessarily seek to maximize shareholder value only (Penrose, 1968; Pirog, 2007). State-owned companies often need to provide the job opportunities and facilitate the wealth distribution mechanism. They seek to become tools of achieving economic growth as well as implement its foreign policy by using the strategic commodity of oil.⁹ It is clear that their need to maximize shareholder value would have to compete against other strategic objectives (Pirog, 2007). In this category, a clear tendency to select their own national currencies as functional currencies was identified, except for four companies, PDV in Venezuela, Pertamina in Indonesia, Statoil in Norway, and YPF in Argentina. Among NOCs, Statoil and YPF are the only companies whose functional currencies are different from their presentation currencies. Approximately 31% of the companies in this category have US\$ as their functional currency, excluding companies that did not disclose their functional currencies.

⁹ Pirog, R. stated in his report titled "The role of national oil companies in the international oil market" that the objects of NOCs would be wealth distribution, job programs, economic development, foreign policy, energy security, and vertical integration.

Table 4. National Oil Companies

	Name	Country	Currency in annual report		Gov't (%)	Conformity
			Functional	Presentation		
1	Saudi Aramco	Saudi Arabia	—	—	100	
2	NIOC	Iran	—	—	100	
5	PDV	Venezuela	US\$	US\$	100	IFRS
6	Rosneft	Russia	RUB	RUB	69.5	IFRS
9	Gazprom	Russia	RUB	RUB	50.003	IFRS
12	Sonatrach	Algeria	—	—	100	
14	KPC	Kuwait	Kuwaiti Dinars	Kuwaiti Dinars	100	IFRS
15	Adnoc	UAE	AED	AED	100	IFRS
17	QP	Qatar	Qatar Riyal	Qatar Riyal	100	Local ¹⁰
18	Pemex	Mexico	Mexican Peso	Mexican Peso	100	IFRS
19	Petronas	Malaysia	Ringgit	Ringgit	100	Local ¹¹ /IFRS
21	INOC	Iraq	—	—	100	
21	NNPC	Nigeria	—	—	100	
26	EGPC	Egypt	—	—	100	
27	Pertamina	Indonesia	US\$	US\$	100	IFRS
28	Statoil	Norway	US\$	NOK	67	IFRS
32	Kazmunaigas	Kazakhstan	KZT	KZT	100	IFRS
33	Libya NOC	Libya	—	—	100	
34	PDO	Oman	—	—	60	
36	Ecopetrol	Colombia	Columbian Pesos	Columbian Pesos	88.49	Local ¹²
39	Uzbekneftegas	Uzbekistan	—	—	100	
41	YPF ¹³	Argentina	US\$	Argentina Pesos	51	IFRS

Note: Functional and presentation currencies as of December 2014, except for PDVSA and Pemex, which are as of 2013 and KPC, which is as of March 2014.

Source: PIW (Table 2) and each company's financial statements.

(C) National Flag Oil Companies

Scholars have previously explored international oil companies, including national flag oil companies. Although they have diminishing roles (Stevens, 2016), they are still active players in the oil and gas upstream industry. Among the national flag oil companies, the data survey identified clear pattern in selecting their own currencies as functional currency. The 9 out of the 10 companies have been using their own national currencies as the functional currency; *Total* in France is the only company whose functional currency is not their own national currency. The survey revealed that three companies, *Total* in France, Petrobras in Brazil, and BG in the UK, are the only companies whose functional currencies are different from their presentation currencies. Among the companies in this category, 10% have US\$ as their functional currency.

¹⁰ Qatar Petroleum, Annual Report 2014; "1974-2014 40 years of Excellence". It said that "The summary consolidated financial statements have been prepared in accordance with the requirements of Emiri Decree No 10 of 1974 (as amended by Law No. 5 of 2012), concerning the establishment of QP, the Council of Ministers' decision No. 6 of 1976 (as amended) and QP Chairman Resolution No. 17 of 2013 related to accounting policies." (pp.120)

¹¹ Petronas, Annual Report 2014; "Reimagining Energy". It said that "The financial statements of the Group and of the Company have been prepared in accordance with Malaysian Financial Reporting Standards ("MFRS"), International Financial Reporting Standards and the Companies Act, 1965 in Malaysia." (pp.136)

¹² Ecopetrol's financial statements were reported according to the IFRS as of January 2015.

¹³ YPF was reacquired by Argentina government in 2012. In this report, the energy balance was calculated based on data provided by the World Bank. The author took the average number of each country's energy balance between 2011 and 2013. According to the World Bank, Argentina had been in an energy exporting position until 2010, which turned into an importing position since 2011. Argentina is known to have significant shale resources, so YPF is considered a NOC in this study, although their current position is an energy importing one.

Table 5. National Flag Oil Companies

Rank	Name	Country	Currency in Annual Report		Government Ownership (%)	Conformity
			Functional	Presentation		
3	CNPC	China	RMB	RMB	100	Local ¹⁴
10	Total	France	US\$	Euro	—	IFRS
12	Petrobras	Brazil	Brazilian Real	US\$	28.7	IFRS
20	Sinopec	China	RMB	RMB	72.47	IFRS
23	Eni	Italy	Euro	Euro	30.1	IFRS
25	ONGC	India	Rupee	Rupee	68.94	Local ¹⁵
30	Respol	Spain	Euro	Euro	—	IFRS
30	CNOOC	China	RMB	RMB	100	Local ¹⁶
37	BG ¹⁷	UK	Sterling Pound	US\$	—	IFRS
43	Inpex	Japan	Japanese Yen	Japanese Yen	18.94	Local ¹⁸

Note: Functional and presentation currencies, as of December 2014 except for ONGC and Inpex, which are as of March 2014.

Source: PIW (Table 2) and each company's financial statements

(D) Others (Independent Oil and Gas Companies)

The remaining companies (independent energy companies) are free from government ownership. Five countries, the US, Russia, Canada, India, and Australia, were identified as the nations with independent oil and gas companies. Reliance is the only company whose functional currency is different from their presentation currency. According to Lukoil's annual report in 2015, their accounting principles have changed from the US GAAP to the IFRS and their functional currency has changed from US dollars to Russian Rubles. With these changes by Lukoil, the functional and presentation currencies of four Russian ranked companies, Lukoil, Surgneftegas, Novatek, and Tatneft, became Russian Rubles. Except for Lukoil in 2014, BHP Billiton in Australia and Reliance in India are the only companies whose functional currency (US\$) is different from their own native currency. Approximately 64% of companies in this category have US\$ as their functional currency.

¹⁴ CNPC Annual Report 2014; It said that "CNPC (hereinafter referred to as the Company) follows *Accounting Standards for Business Enterprises—Basic Principles* and the specific rules of accounting standards, guidelines for the application of accounting standards, interpretations of accounting standards and relevant regulations issued by the Ministry of Finance." (pp.42)

¹⁵ ONGC Annual Report 2013-2014; It said that "The financial statements are prepared under the historical cost convention on accrual basis in accordance with Generally Accepted Accounting Principles (GAAP), applying the Successful Efforts Method as per the Guidance Note on Accounting for Oil and Gas Producing Activities (Revised) issued by the Institute of Chartered Accountants of India and Accounting Standards notified under the Companies (Accounting Standards) Rules, 2006 and provisions of the Companies Act, 1956." (pp. 188)

¹⁶ CNOOC Annual Report 2014; It said that "The financial statements of the Company have been prepared in accordance with the going concern basis and the "Accounting Standards for Business Enterprises" -Basic Standard issued by the Ministry of Finance on 15 February 2006 and other relevant accounting standards and regulations." (pp. 25)

¹⁷ Shell acquired BG in 2016.

¹⁸ Inpex Annual Report; "From Development to Delivery". It said the financial statements are prepared in accordance with Japanese accounting rules (in Japanese). (pp. 85)

Table 6. Independent oil and gas companies

Rank	Name	Country	Currency in annual report		Gov't (%)	Conformity
			Functional	Presentation		
16	Lukoil ¹⁹	Russia	US\$ ²⁰	US\$	—	USGAAP ²¹
24	Surgutneftgas ²²	Russia	RUB	RUB	—	IFRS
29	Conoco Phillips	USA	US\$	US\$	—	USGAAP
35	Novatek ²³	Russia	RUB	RUB	—	IFRS
38	CNR	Canada	Canadian \$	Canadian \$	—	IFRS
40	Anadarko	USA	US\$	US\$	—	USGAAP
42	Devon Energy	USA	US\$	US\$	—	USGAAP
44	Reliance	India	US\$	Rupee	—	Local ²⁴
45	Chesapeake	USA	US\$	US\$	—	USGAAP
46	EOG	USA	US\$	US\$	—	USGAAP
47	Suncor	Canada	Canadian \$	Canadian \$	—	IFRS
47	Occidental	USA	US\$	US\$	—	USGAAP
47	BHP Billiton	Australia	US\$	US\$	—	IFRS
50	Tatneft ²⁵	Russia	RUB	RUB	—	IFRS

Note: Functional and presentation currencies as of December 2014 except Reliance as of March 2014

Source: PIW (Table 2) and each company's financial statements

Diagram 2. Equity participation by government (Company name (ranking in 2016))

Source: Table 3,4,5,6

0%	1 - 49%	50 - 99%	100%
National Flag Total(10), <u>Repsol</u> (30), <u>BG</u> (37)	National Flag <u>Petrobras</u> (12), <u>Eni</u> (23), <u>Inpex</u> (43)	National Flag <u>Sinopec</u> (20), <u>ONGC</u> (25)	National Flag <u>CNPC</u> (3), <u>CNOOC</u> (30)
Major Oil <u>ExxonMobil</u> (3), <u>BP</u> (6), <u>Shell</u> (8), <u>Chevron</u> (11)		National Oil <u>Rosneft</u> (6), <u>Gazprom</u> (9), <u>Statoil</u> (28), <u>PDO</u> (34), <u>Ecopetrol</u> (36), <u>YPF</u> (41)	National Oil <u>Aramco</u> (1), <u>NIOC</u> (2), <u>PDV</u> (5), <u>Sonatrach</u> (12), <u>KPC</u> (14) <u>Adnoc</u> (15), <u>QP</u> (17), <u>Pemex</u> (18), <u>Petronas</u> (19), <u>INOC</u> (21), <u>NNPC</u> (21), <u>EGPC</u> (26), <u>Pertamina</u> (27), <u>Kazmunaigas</u> (32), <u>Libya NOC</u> (33), <u>Uzbekneftgas</u> (39)
Independent <u>Lukoil</u> (16) <u>Surgutneftgas</u> (24), <u>ConocoPhillips</u> (29), <u>Novatek</u> (35), <u>CNR</u> (38), <u>Anadarko</u> (40), <u>Devon</u> (42), <u>Reliance</u> (44), <u>Chesapeake</u> (45), <u>EOG</u> (46), <u>Suncor</u> (47), <u>Occidental</u> (47), <u>BHP Billiton</u> (47), <u>Tatneft</u> (50)			

¹⁹ Kikkawa (2010) categorized Lukoil as a national oil company. Lukoil can be considered as one of national oil companies but this paper put Lukoil as an independent company because of their US\$ functional currency in 2014 indicates their independency.

²⁰ Lukoil changed its functional currency from US\$ to Russian Rubles in 2015.

²¹ Lukoil changed its accounting rule from USGAAP to IFRS in 2015.

²² Kikkawa (2010) was unclear about this but Surgutneftgas can be considered as one of national oil companies in Russia.

²³ Kikkawa (2010) was unclear about this but Novatek can be considered as one of national oil companies in Russia.

²⁴ Reliance Industries Limited, Annual Report 2013-14; "Growth is Life". It said that "These financial statements have been prepared to comply with Accounting Principles Generally accepted in India (Indian GAAP), the Accounting Standards notified under the Companies (Accounting Standards) Rules, 2006 and the relevant provisions of the Companies Act, 1956." (pp. 172)

²⁵ Kikkawa (2010) was unclear about this but Tatneft can be considered as one of national oil companies in Russia.

4) Change in Functional Currencies

In the past, the managements of several oil and gas companies chose to change their functional currencies. A survey of the financial reports of the top 50 ranked companies and their subsidiary companies as well as Japanese companies was conducted and companies that had changed their functional currencies were identified. Some of these companies are (1) Statoil (formerly known as “StatoilHydro”) in Norway, (2) JX Nippon Exploration and Production (UK) Limited (hereinafter called “JX UK”), a 100% subsidiary company of JX Holdings, Inc. in Japan, (3) Aker BP in Norway, (4) Lukoil in Russia, and (5) PTTEP in Thailand. Why did they change their functional currency? What type of events caused this functional currency change?

Table 7. Companies that Changed their Functional Currencies

	(1) Statoil	(2) PTTEP	(3) JX UK	(4) Aker BP	(5) Lukoil
National	Norway	Thai	Japan	Norway	Russia
Year	Jan. 2009	Jan. 2011	Jan. 2014	Oct. 2014	Jan. 2015
Category	NOC	National Flag	Independent	Independent	Independent
Old Functional Currency	NOK	THB	GBP	NOK	US\$
Old Presentation currency	NOK	THB	GBP	NOK	US\$
Old Accounting Rule	IFRS	Thai GAAP	IFRS	IFRS	US GAAP
Event	Structure	Accounting rule change	Circumstance/ US\$ loan	Acquisition	Accounting rule change
New Functional Currency	US\$	US\$	US\$	US\$	RUB
New Presentation Currency	NOK	THB	US\$	US\$	RUB
New Accounting Rule	IFRS	TFRS/IFRS	IFRS	IFRS	IFRS

Sources:

- (1) Statoil: Annual report on Form 20-F, 2009
- (2) PTTEP: Annual report 2011, *Challenge*
- (3) JX Nippon Exploration and Production (UK) Limited: Annual report and financial statements for the year ended December 31, 2014, Registered number: 3288689
- (4) The transformation of Det norske: Annual report 2014
- (5) PJSC “LUKOIL”: Annual report 2015, *Always moving forward*

(1) Statoil

Statoil is the national oil company in Norway. It merged with the oil and gas business of Hydro (formerly known as Norsk Hydro) as of October 2007. It changed its functional currency from NOK to US\$ in 2009 but retained NOK as the presentation currency. Statoil disclosed the change in their annual report in 2008 and expected it to reduce the net income volatility caused by fluctuations in the US\$/NOK rate, but increase the volatility in other comprehensive incomes. According to a press release by Statoil in May 2009, the management of Statoil changed the company’s structure. Statoil changed its functional currency for income tax purposes. The same press release stated that, “without the changes in functional currency, the “Net financial items” for the Group would have been approximately 10 billion NOK higher in the first quarter 2009.” Although all the consequences of changing the functional currency from NOK to US\$ in 2009 were unclear, Statoil seemed to have reasons to change the functional currency, that is, gaining better control over important financial parameters.

(2) PTTEP

PTTEP is a national flag oil company in Thailand. PTTEP changed its functional currency from Thai Baht to US\$ from January 2011. Since January 2011, PTTEP has complied with the Thai Financial Reporting Standards (TFRS) in conformity with the IFRS. PTTEP explained that the benefits of changing its functional currency from Thai Baht to US\$ were: (1) Reporting in US\$ to reflect its operation and performance, (2) the ability to benchmark against international oil and gas companies, (3) positive outlook from investors, (4) better access to the global

capital market, (5) increased fund-raising capability, e.g., bond issuance, and (6) better information for strategic investment decision making²⁶.

(3) JX UK

JX Nippon Exploration and Production (UK) Limited (JX UK) is a 100% subsidiary company of JX Holdings, Inc. in Japan. JX Holdings, Inc. is considered as one of the independent oil and gas companies. The financial statements of JX Holdings, Inc. were prepared in accordance with Japan's generally accepted accounting principles. JX UK changed their functional currency from GBP to US\$ in 2014, but both of these were not its parent company's functional currency. The functional currency of JX Holdings, Inc. has been the Japanese Yen. The audit report of JX UK stated that, "as a result of change in circumstances affecting the operations, management has determined that on 1 January 2014, the functional currency of the Company is now US dollars (USD)."

Although it was unclear as to what circumstances had been changed, JX UK incurred impairment losses of approximately US\$ 158 million in 2014. As a result, JX UK's total losses amounted to US\$ 166 million in 2014. According to the press release by The Japan Bank for International Cooperation (JBIC) in April 2013, JX UK signed a loan agreement with JBIC totaling up to US\$ 881 million²⁷ and it would highly likely affect their currency risk. It can be assumed that JX UK's business model did not function well in 2014 and consequently, JX UK's management analyzed its business circumstances, including the currency exchange risk, which resulted in the change of the functional currency.

(4) Aker BP

Aker BP (formerly known as Det norske) is an independent oil and gas company in Norway. They took over Marathon Oil Norge AS., one of the subsidiary companies of Marathon Oil Corporation in the US, as of October 2014. They changed their functional currency from NOK to US\$ as of October 2014. They also changed their presentation currency from NOK to US\$ simultaneously but did not change its accounting rules to IFRS. The Aker BP's (then, Det norske) management decided to change its functional and presentation currencies because the revenue from petroleum products would increase significantly and this revenue increase was mainly denominated in the US\$ due to the acquisition of Marathon Oil Norge AS.

(5) Lukoil

Lukoil is an independent oil and gas company in Russia. Lukoil changed its accounting principles from the US GAAP to the IFRS in 2015. Upon changing its accounting principles, Lukoil also changed its functional currency from US\$ to Rubles. The reason of changing their accounting principle from the US GAAP to the IFRS was unclear. However, Lukoil was the only company who adopted the US GAAP in 2014, among the major oil and gas companies in Russia. All other independent oil and gas companies in Russia, such as Surgutneftgas, Novatek, and Tatneft, as well as NOCs in Russia, such as Rosneft and Gazprom, chose the Russian Ruble as their functional currency. Thus, the triggering event for changing Lukoil's functional currency from US\$ to Rubles was considered as the change of its accounting principles from the US GAAP to the IFRS.

Originally, the managements of oil and gas companies seemingly have had the ability to select their functional currency based on the parameters specified by the accounting rules. However, when some oil and gas companies change their functional currencies, their managements' discretion is seemingly limited. Statoil changed their functional currency from NOK to US\$ in 2009, triggered by a change in company structure. JX UK changed their functional currency in 2014 and subsequently, incurred significant impairment losses. PTTEP and Lukoil changed their functional currencies in 2011 and 2015 respectively, along with the change in accounting rules. The managements of oil and gas E&P companies have some discretion in selecting their functional currency. However, when the functional currency changes, such discretion becomes limited and the management needs events, such as structure changes, business circumstance changes, and accounting principles changes, as leverage. It is important

²⁶ PTTEP Benefits and Costs for USD Functional Currency Adoption, May 20, 2014

²⁷ JBIC web page of JBIC, <http://www.jbic.go.jp/en/information/press/press-2013/0412-7505>

to recognize that this is merely some companies exercising their discretionary rights. Thus, not all companies will choose to change even if discretion rights would appear. As a good example Shell did not choose to change its own functional currency of US dollars when Shell acquired BG, whose functional currency is Sterling Pound, in 2016.

5) Conclusions

This survey report identified the following points:

- (1) Previous studies confirm that the managements of multinational companies have the ability to choose their functional currencies under the US GAAP to the extent that it fulfills the parameters specified by the accounting rules. The data survey also identified oil and gas companies in UK Alba field, who follow the UK GAAP and IFRS accounting principles, and decided to have the different functional currencies under same project. Thus, the managements are given some discretion to choose the functional currency, provided it fulfills the parameters specified by the accounting rules.
- (2) The major oil companies all use US\$ as their functional currency. ExxonMobil and Chevron have both adopted the US GAAP, while Royal Dutch Shell and BP have adopted the IFRS as their accounting principles. NOCs have a clear tendency to select their own national currencies as functional currencies, except for four companies, namely PDV in Venezuela, Pertamina in Indonesia, Statoil in Norway and YPF in Argentina. Among NOCs, Statoil and YPF are the only companies whose functional currencies differ from their presentation currencies. National flag oil companies also showed clear tendency in terms of selecting their functional currencies. The 9 out of the 10 companies use their own national currencies as their functional currencies; *Total* in France is the only company whose functional currency is not their own national currency. The survey revealed that three companies, *Total* in France, Petrobras in Brazil, and BG in the UK, are the only companies whose functional currencies differ from their presentation currencies. Among independent oil and gas companies, Reliance is the only company whose functional currency is different from their presentation currency. According to Lukoil's annual report in 2015, their accounting principles have changed from the US GAAP to the IFRS and their functional currency has also changed from US dollars to Russian Rubles. With these changes by Lukoil, the functional and presentation currencies of four Russian ranked companies, Lukoil, Surgneftegas, Novatek, and Tatneft became Russian Rubles. Except for Lukoil in 2014, BHP Billiton in Australia and Reliance in India are the only companies whose functional currency (US\$) is different from their own native currency.
- (3) When oil and gas companies change their functional currencies, their managements' discretion is seemingly limited. Statoil changed their functional currency from NOK to US\$ in 2009, triggered by a change in company structure. JX UK signed a loan agreement with JBIC totaling up to US\$ 881 million in April 2013. JX UK changed their functional currency in 2014 and subsequently, incurred significant impairment losses. PTTEP and Lukoil changed their functional currencies in 2011 and 2015 respectively, along with the change in accounting rules. The managements of E&P companies have some discretion in choosing their functional currency. However, when the functional currency changes, the management's discretion to change it becomes limited, and requires events, such as structural changes, business circumstance changes, or change in accounting principles, as leverage. It is important to recognize that this is merely some companies exercising their discretionary rights. Thus, not all companies will choose to change even if discretion rights would appear.

The limitations of this study is that it did not discuss how the original selection and subsequent changes of functional currencies by the parent companies in the oil and gas industry, especially the top 50 companies as ranked by PIW, would influence issues of functional currencies among their overseas subsidiary companies. The top 50 rankings of oil and gas companies by PIW in 2016 were used; however, the financial statements used to identify each company's functional currency were largely issued at the end of 2014. This is because some data in PIW is not publicly accessible and some oil and gas companies were slow to disclose their financial statements. The time discrepancy in the data between PIW's ranking and financial statements may have had some impact on the analysis. Moreover, the study could not fully explore the issues of the functional currencies of NOCs, which did not disclose the financial statements. Future studies should focus on these points.

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