

Swing of Oil Policies in Venezuela

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Topics of Research on Oil

- Political economy of oil policy / decision making process, stakeholders, resource nationalism,
- National Oil Companies(NOCs) / state-NOC relations, Corporate governance of NOCs / Variety of NOCs.
- Structure and characteristics of oil industry / decision on technological choice
- Characteristics of oil as a commodity

Discussion / research of oil policies tends to focus on political process and/or ideological background, and neglects the geological, technological, and managerial aspects of the industry.

➡ Focus on the geological / technical aspects and the industrial structure of oil industry

Characteristics of Oil Industry

- As the volume of production accumulates through the time (long history of production), oil fields will begin to lose productivity due to the decline of pressure in the subterranean stratum, and require continuous investment and/or high technology in order to keep the production level.
 - High risk and high return → It is important to lower the financial risk by diversifying the operation fields and share the risk with partner companies
 - In the case that a NOC monopolizes the oil production, it has to bear high financial burden and risk alone without sharing.
 - Higher the dependence of the fiscal income on the oil revenue, it will be more likely that the NOC's financial difficulty may cause fiscal crisis of the country.
 - In the case that a NOC operates only in her home country, it is difficult to diversify the risk of decline of productivity in long run.
- ➡ The blue points are weakness of Venezuelan Oil industry.

Characteristics of Oil Industry

- Crude oil has a large difference in the quality (specific gravity, nitrogen, sulfur, metal, etc.) depending on the fields.
- Heavy/ extra-heavy and/or nitrogen /metal containing crude oil requires additional refining facilities (=additional cost)
 - ➔ • These types of crude oil have lower market value.
 - The producers (NOCs) of heavy and extra-heavy oil may want to secure the access to the market by participating directly to the refining sector (downstream).

➔ In Venezuela, the traditional oil fields have lost productivity (production) and the majority of the oil reserve and production now come from **Orinoco Extra-heavy oil**

Top 20 oil countries in the world (2018)

Proven Oil Reserve

		billon barrels	Share	R/P ratio
	Total World	1729.7	100.0%	50.0
1	Venezuela	303.3*	17.5%	**
2	Saudi Arabia	297.7	17.2%	66.4
3	Canada	167.8	9.7%	88.3
4	Iran	155.6	9.0%	90.4
5	Iraq	147.2	8.5%	87.4
6	Russian	106.2	6.1%	25.4
7	Kuwait	101.5	5.9%	91.2
8	UAE	97.8	5.7%	68.0
9	US	61.2	3.5%	11.0
10	Libya	48.4	2.8%	131.3
11	Nigeria	37.5	2.2%	50.0
12	Kazakhstan	30.0	1.7%	42.7
13	China	25.9	1.5%	18.7
14	Qatar	25.2	1.5%	36.8
15	Brazil	13.4	0.8%	13.7
16	Algeria	12.2	0.7%	22.1
17	Norway	8.6	0.5%	12.8
18	Angola	8.4	0.5%	15.0
19	Mexico	7.7	0.4%	10.2
20	Azerbaijan	7.0	0.4%	24.1

* 261.4 of which is from Orinoco Belt, ** more than 500 years
(Source) BP(2019)

Oil Production

		1,000 bpd	Share
	Total World	94718	100.0%
1	US	15,311	16.2%
2	Saudi Arabia	12,287	13.0%
3	Russian	11,438	12.1%
4	Canada	5,208	5.5%
5	Iran	4,715	5.0%
6	Iraq	4,614	4.9%
7	UAE	3,942	4.2%
8	China	3,798	4.0%
9	Kuwait	3,049	3.2%
10	Brazil	2,683	2.8%
11	Mexico	2,068	2.2%
12	Nigeria	2,051	2.2%
13	Kazakhstan	1,927	2.0%
14	Qatar	1,879	2.0%
15	Norway	1,844	1.9%
16	Angola	1,534	1.6%
17	Venezuela	1,514	1.6%
18	Algeria	1,510	1.6%
19	United Kingdom	1,085	1.1%
20	Libya	1,010	1.1%

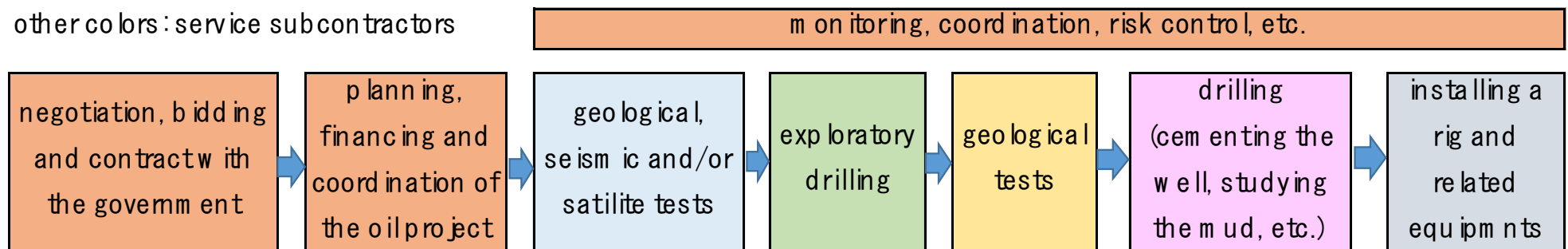
(Source) BP (2019).

Characteristics of Oil Industry

- Industrial structure of oil industry is like a chain of diversified tasks in a row which makes “doing everything in house” approach expensive and inefficient.
 - ➔ It is common to subcontract service companies for each tasks.

orange : oil companies

other colors : service subcontractors



oil company: negotiation with the government, making the project, financing, risk management, coordination among many subcontractors and partners, monitoring, etc.

service companies: specific task (seismic test for exploration, drilling, cementing, geological test, etc.)

Technology issues

- If you use high technology, you can reduce the risk of “not finding oil”, and increment efficiency and productivity. But most of the **NOCs in developing countries do not have the high technology.**

- How do NOCs obtain the high technology?
 - (1) To develop in house.
 - (2) To form partnership with foreign/private oil companies with high technology
 - (3) To “purchase the technology service” by subcontracting specialized service companies.

Nationalistic oil policies in Venezuela

- Oil development started at the beginning of the 20th century by US and European oil majors. The **dictator** Gomez gave them **free hand** with long term concession without taxation.
- While the national economy grew rapidly by oil development, the poverty and income gap expanded.
- **The leftist political party (AD) which fought against the military dictatorship for democratization** in the first half of the 20th promoted **resource nationalism and nationalistic oil policies** when they were in power later: special taxation and royalty for the oil sector, 50:50, “no more concession”, nationalization (1976).
- The oil has become the core of the **national identity**.
- The oil income has been considered **resource for economic and social development**.
- The oil rent has been also used as political resource for the government.



The oil nationalism became very strong because it has been **legitimized** and strengthened by unquestionable concepts such as anti-imperialism, democracy, social justice, and national identity.

Swing of oil policies in Venezuela between:

State control and resource nationalism

- 100% state ownership of the NOC (PDVSA), and its monopoly over the oil sector.
- Prohibition / restriction for participation of foreign/ private capital.
- High fiscal contribution (high tax rates and royalty)
- State intervention in the management of NOC.

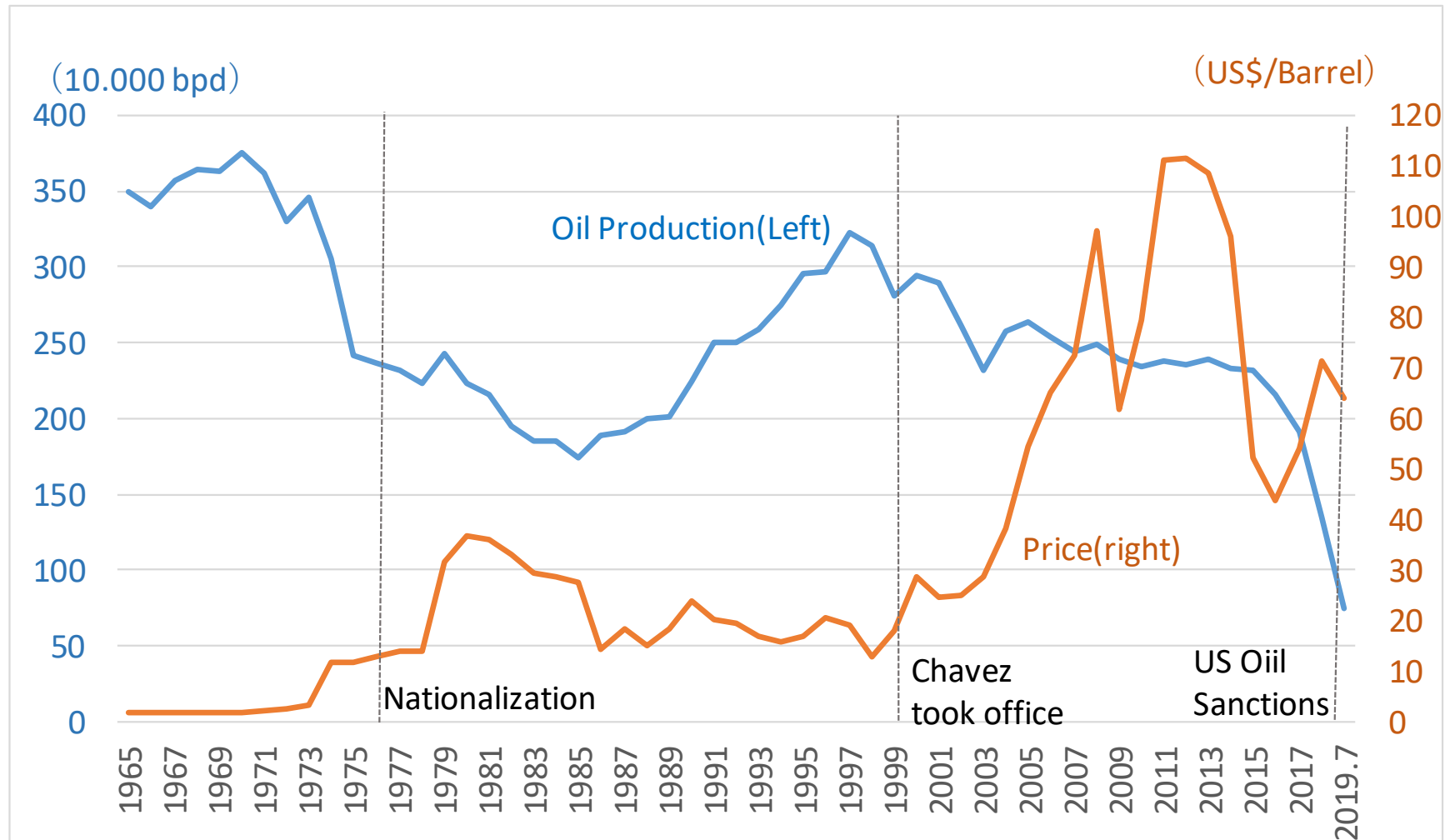
Open and/or more competition-oriented policy

- Opening of upstream and/or downstream of the oil industry for foreign or private companies.
- Type of contracts which allow more freedom for foreign / private companies: concession, product sharing (rather than profit sharing and service contracts).
- Less state intervention in the management of state oil company.
- Focus on expansion of production and/or reserve rather than direct fiscal contribution.

Swing of oil policies in Venezuela

1910s–30s	free operation by foreign oil majors	dictator Gomez
1940s–70s	resource nationalism, gradual increase of state intervention in the oil industry	democratic movement → democracy, AD
1976	nationalization	
1976–1998	competition-oriented policy, opening of the oil sector for foreign companies	
1999–	State control and resource nationalism	leftist and nationalist President Chavez took office

Venezuela's oil production and price



(Source) Oil Production: 1965-95 from BP(2019), other years from OPEC Monthly Oil Market Report. Oil Prices: BP(2019), except July 2019 from OPEC Monthly Oil Market Report July 2019. Blent prices. Author's elaboration.

Venezuela's two main oil fields



Oil production by region

	Maracaibo		Apure		Oriente		Total
	1,000bpd	(%)	1,000bpd	(%)	1,000bpd	(%)	
1991	1518	63.6	105	4.4	765	32.0	2,388
1995	1599	57.1	137	4.9	1,063	38.0	2,799
2000	1467	46.6	111	3.5	1,567	49.8	3,146
2010	831	28.0	61	2.1	2,076	69.9	2,968
2014	745	26.8	36	1.3	1,997	71.9	2,779

(Source) PODE 2014.

Increasing dependence on extra-heavy oil

Oil Production by API

	~22.0		22.0 < API < 30.0		30.0 ~		Total	
	Volume	%	Volume	%	Volume	%	Volume	%
1991	622	26.0%	1,013	42.4%	753	31.5%	2,388	
1995	915	32.7%	1,096	39.2%	788	28.2%	2,799	
2000	1,332	42.3%	1,099	34.9%	715	22.7%	3,146	
2010	1,510	50.9%	807	27.2%	651	21.9%	2,968	
2014	1,639	59.0%	619	22.3%	521	18.7%	2,779	

(note) extra-heavy (API less than 25.99), heavy crude (29.99-26.00), according to JOGMEC.

(Source) *PODE 2004, PODE 2014*.

Oil Production by specific gravity

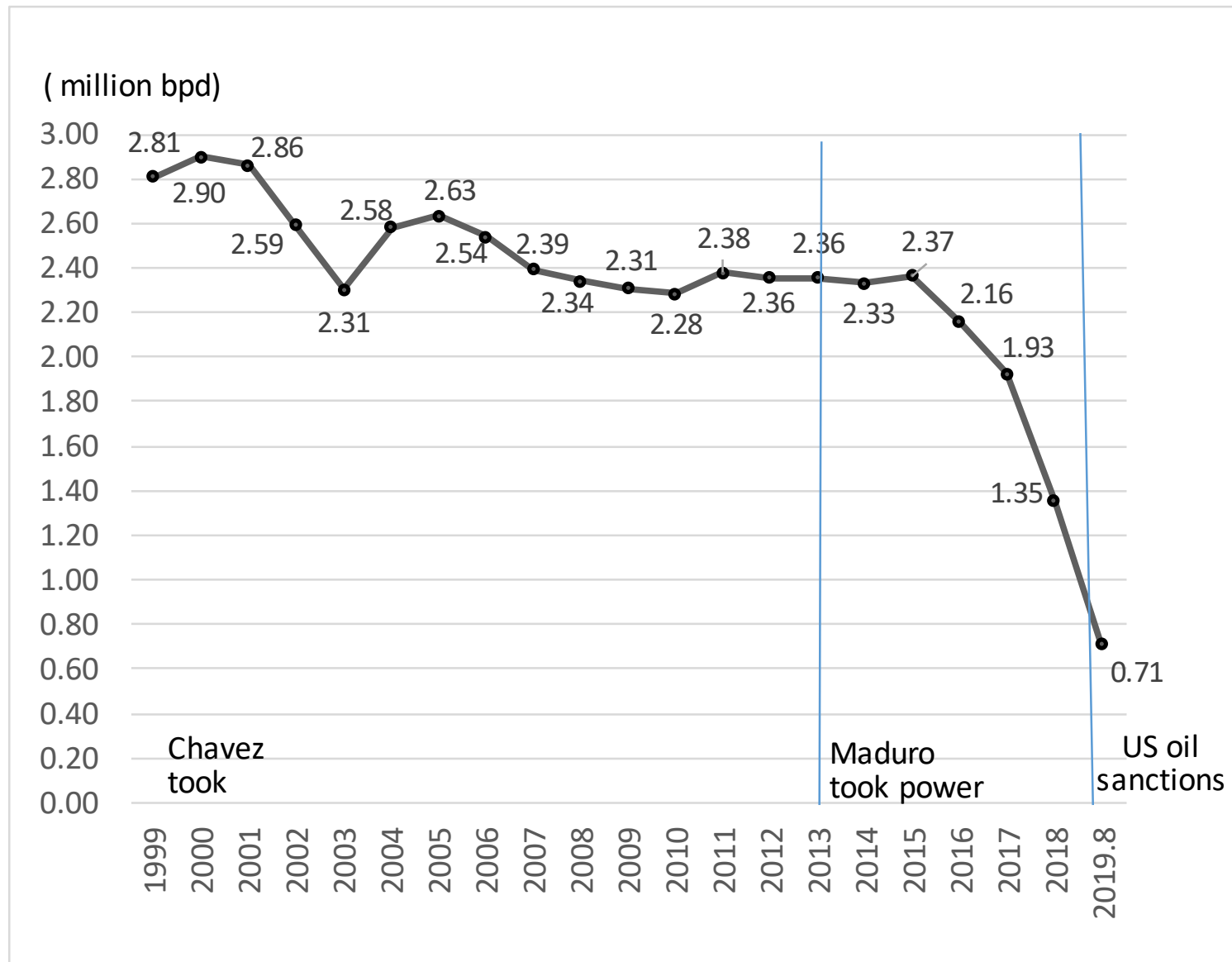
	heavy+ extraheavy (~29.99)		medium (30.00~33.99)		light(34.00~38.99)		Condensate		Total
	Volume	%	Volume	%	Volume	%	Volume	%	
2002	934	34.4%	962	35.4%	774	28.5%	46	1.7%	2,716
2006	1,120	38.5%	1,020	35.1%	642	22.1%	125	4.3%	2,907
2012	1,441	49.5%	875	30.1%	487	16.7%	107	3.7%	2,910
2016	1,492	60.5%	573	23.2%	313	12.7%	88	3.6%	2,466

(note) extra-heavy (API less than 25.99), heavy crude (29.99-26.00), according to JOGMEC.

Condensate is liquid oil which is found as gas underground, and its API varies depending on the fields, but normally very high as more than 50.00.

(Source) PDVSA, *Informe de gestión anual 2016*, p.47.

Decline of oil production under Chavez and Maduro administrations



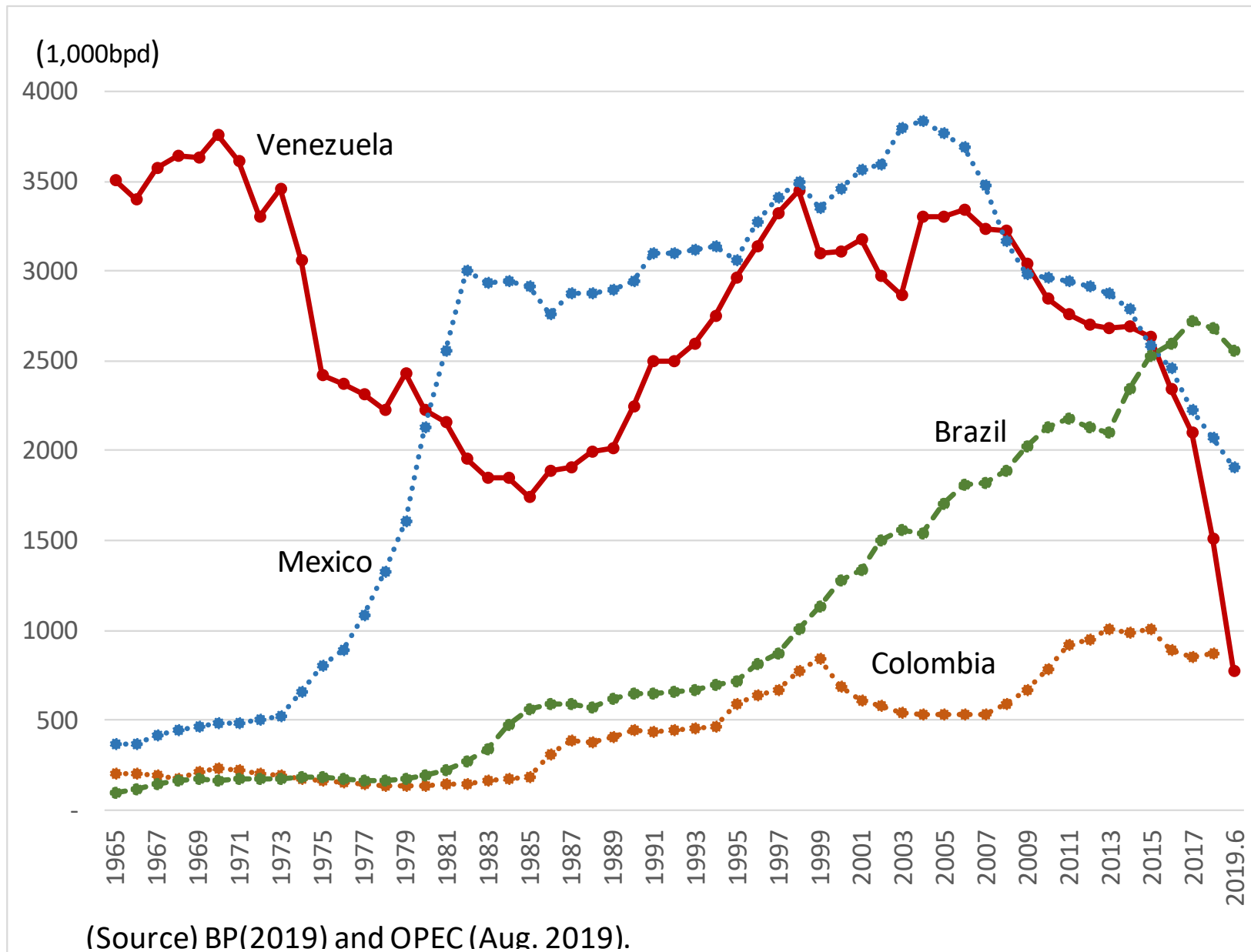
Ironically more dependent on foreign companies under nationalistic Chavez-Maduro administrations

Oil production of PDVSA and joint venture with foreign/domestic capital (1,000bpd)

	2012		2014		2016	
Total	3,005	100.0%	2,880	100.0%	2,557	100.0%
PDVSA	1,921	63.9%	1,728	60.0%	1,404	54.9%
Joint venture with foreign and domestic capital	1,084	36.1%	1,152	40.0%	1,153	45.1%

(Source) PDVSA, *Informe de gestión anual 2016*, p.46.

Oil Production of Latin American Countries



Swings in the oil policies in Latin American countries

Venezuela

- 1990s Dependence on Orinoco Extraheavy oil → Opening to foreign companies to take advantage of their capital and technology
→ Oil production expanded
- 1999~ Chavez's strong nationalism (nationalization, exclusion of US oil companies, etc.) and state intervention to the oil industry (increase in fiscal contribution) → drastic drop in oil production

Mexico

- 1998 Drastic drop in the oil reserve
- 2004~ Drastic drop in the production of the largest oil fields, which led the estimate of P/R ration less than 10 years.
← Urgent necessity to develop the deep sea oilfields
- 2013 Energy reform to open the oil sector to private sector (foreign and national).

Brazil

- 1990s It used to be an oil importing country, but opened the oil industry to foreign companies and ended the monopoly of the state oil company. → Increase in the oil production and became the largest oil producing country in the region.

Final remarks

- Venezuela (and Mexico) have the persistent tendency for leftist, nationalist and state-interventionist policy orientations rooted in its history.
- The strong state intervention makes oil policies and management of NOCs lacking of economic rationality. Fiscal contribution of NOCs leaves little resource for investment → weakened the oil sector of the countries.
- The traditional oil countries in the region (Venezuela and Mexico) have little left with the relatively easy oilfields, and the future production depends on the challenging oil fields with technological difficulties.
- Venezuela (and Mexico) does not have the high technology and enough capital to undertake the difficult project by themselves such as development of extra-heavy crude and deep sea oilfields. They can obtain technology by purchasing the technology using service companies, but it is expensive. If not, another alternative is to invite oil companies (foreign state/private, national private) to use their capital and technology.

➔ Recently, the traditional Big Two in the region (Mexico and Venezuela) which have had nationalistic oil policies suffer from severe decline in oil production, while newcomers (Brazil and Colombia) have increased the oil production by opening the oil industry for foreign capital.