



Rice Global E&C Forum  
**Engineering &  
Construction**



# 2016 RICE GLOBAL E&C ANNUAL FORUM

## **The Oil Industry in Latin America: A New Liberalization Cycle? Opportunities and challenges**

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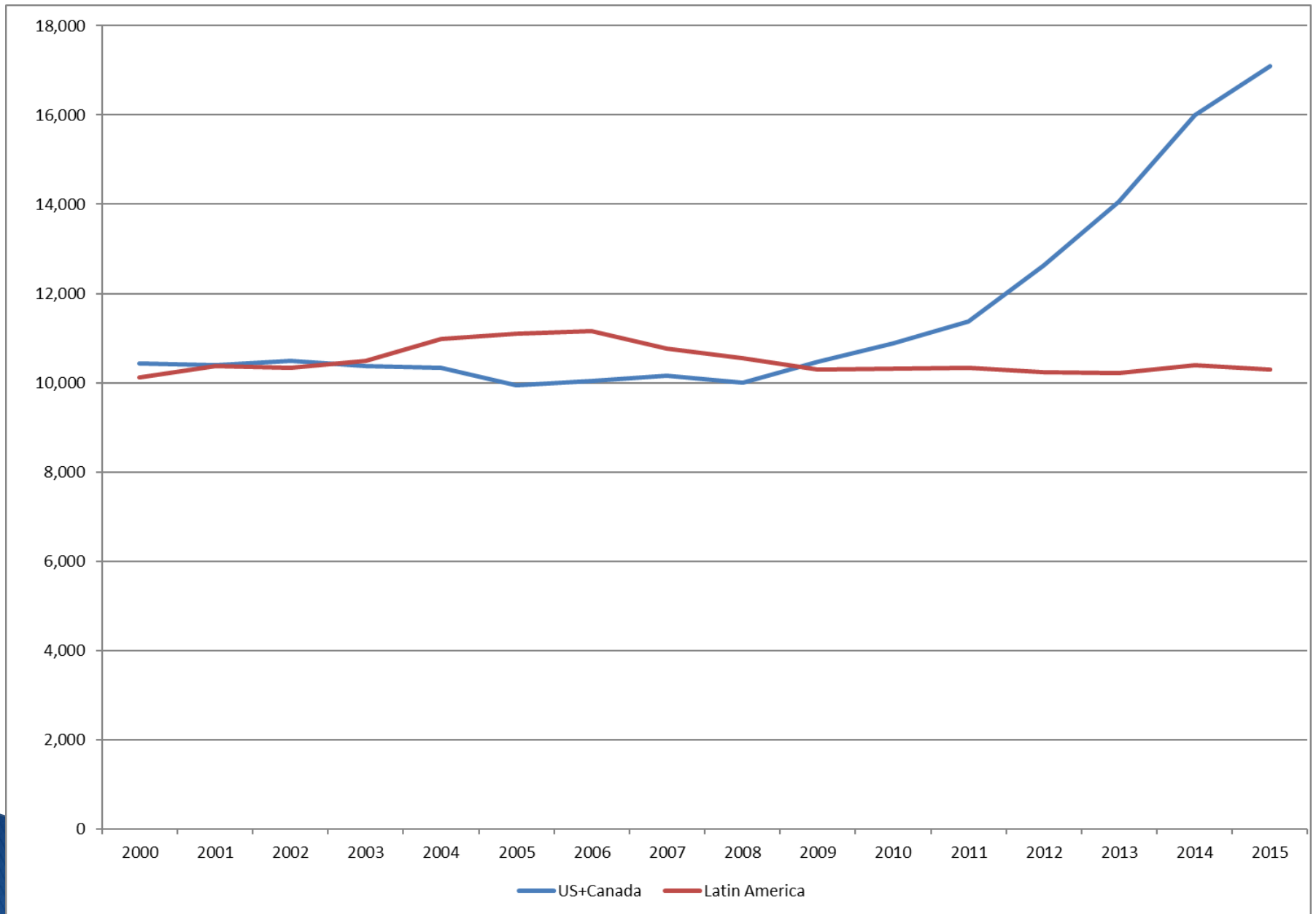
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## The Oil Industry in Latin America during the Boom: another wasted opportunity

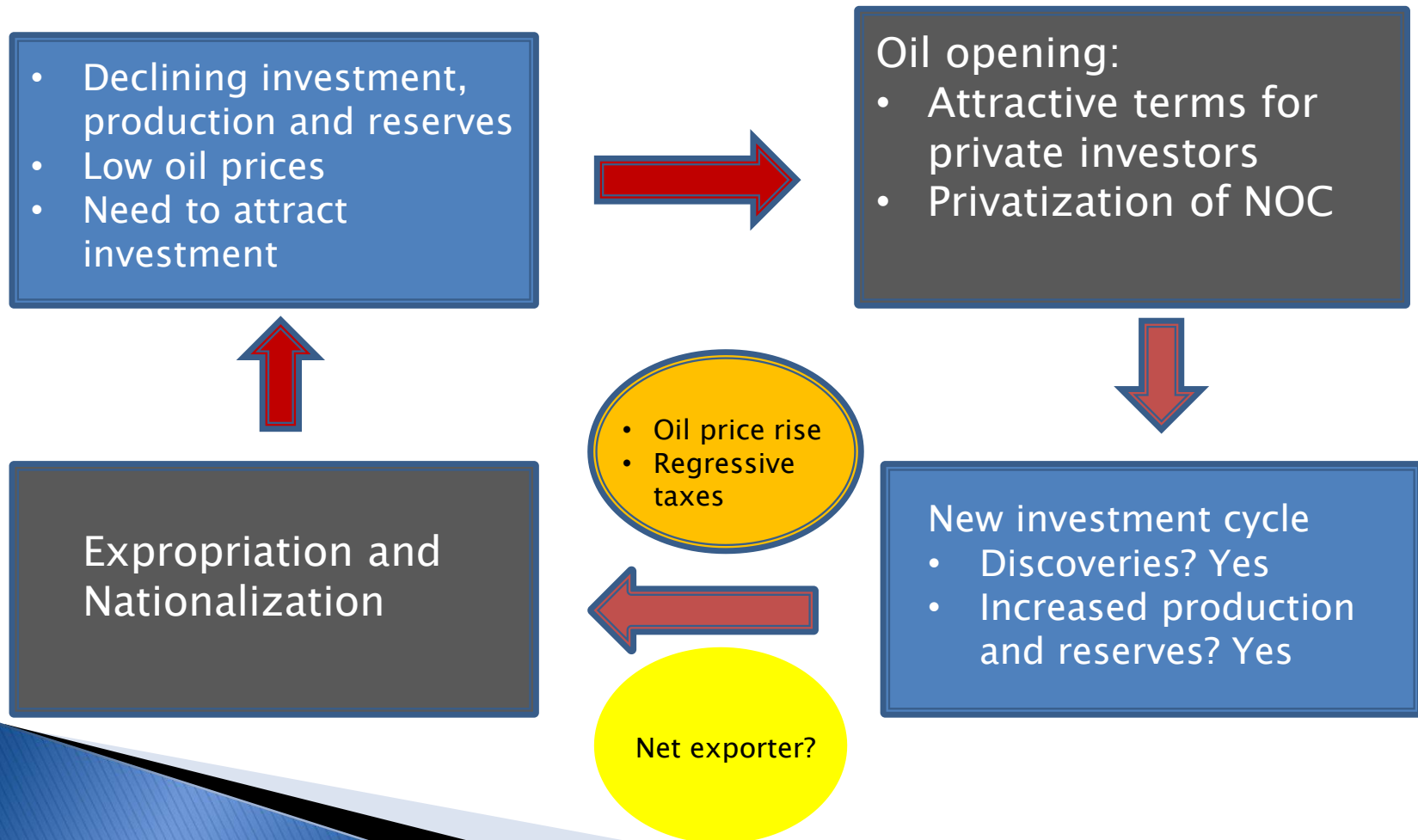
- In 2004 Latin America produced 11 mbd, in 2014, 10.4 mbd. A decline during the largest oil price boom in history? All other regions increased their production. The region lost more than 1% in the world's oil production share to less than 12%, even though it has close to 20% of the proved oil reserves (the largest outside the Middle East).
- Divergent trajectories. In which countries production declined? **México** (–1.1 mbd from peak in 2004), Venezuela (–800 from peak in 1997), and Argentina (–300). Ecuador stagnated.
- In which went up? Brazil (+800 tbd), Colombia (+400), and slightly in Peru.
- Why? Political economy of resource nationalism and NOCs.

# Oil Production: US + Canada vs. Latin America



Source: BP SRWE 2016

# The Investment / Expropriation Cycles



# Oil Reserves

## Proved reserves (billion barrels)

	1993	2003	2013	2014	%
Argentina	2.2	2.7	2.3	2.3	>1%
Brazil	5.0	10.6	15.6	16.2	5%
Colombia	3.2	1.5	2.4	2.4	>1%
Ecuador	3.7	5.1	8.2	8.0	2%
Mexico	50.8	16	11.1	11.1	3%
Peru	0.8	0.9	1.6	1.6	0%
Venezuela	64.4	77.2	298.3	298.3	88%
<b>Total</b>	<b>128.7</b>	<b>114.8</b>	<b>338.4</b>	<b>338.8</b>	<b>100%</b>

# Shale Resources in the Region

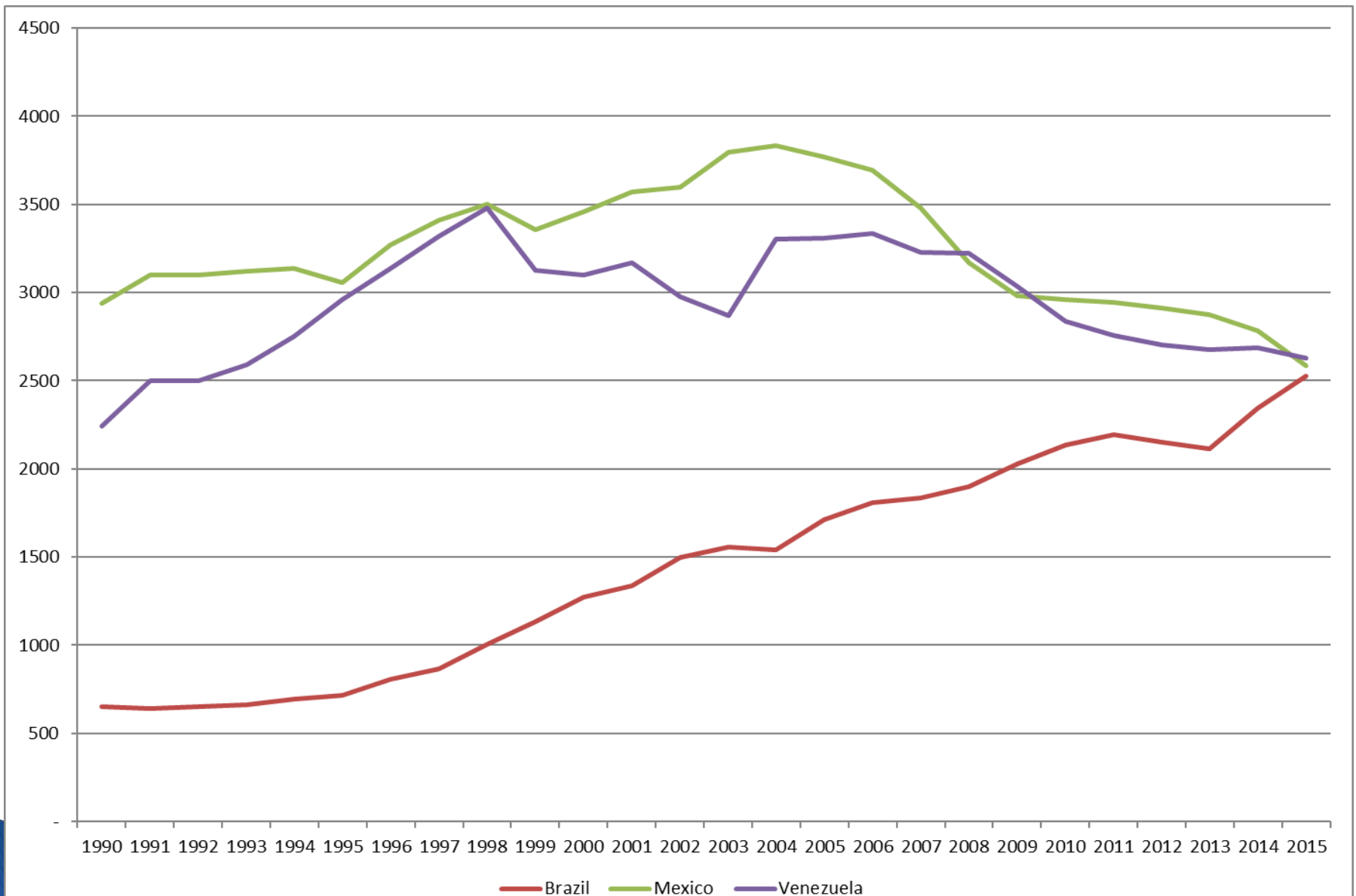
**Top 10 countries with technically recoverable shale oil resources**

Rank	Country	Shale oil (billion barrels)
1	Russia	75
2	U.S.	58
3	China	32
4 →	Argentina	27
5	Libya	26
6	Australia	18
7 →	Venezuela	13
8 →	Mexico	13
9	Pakistan	9
10	Canada	9
	<b>World Total</b>	<b>345</b>

**Top 10 countries with technically recoverable shale gas resources**

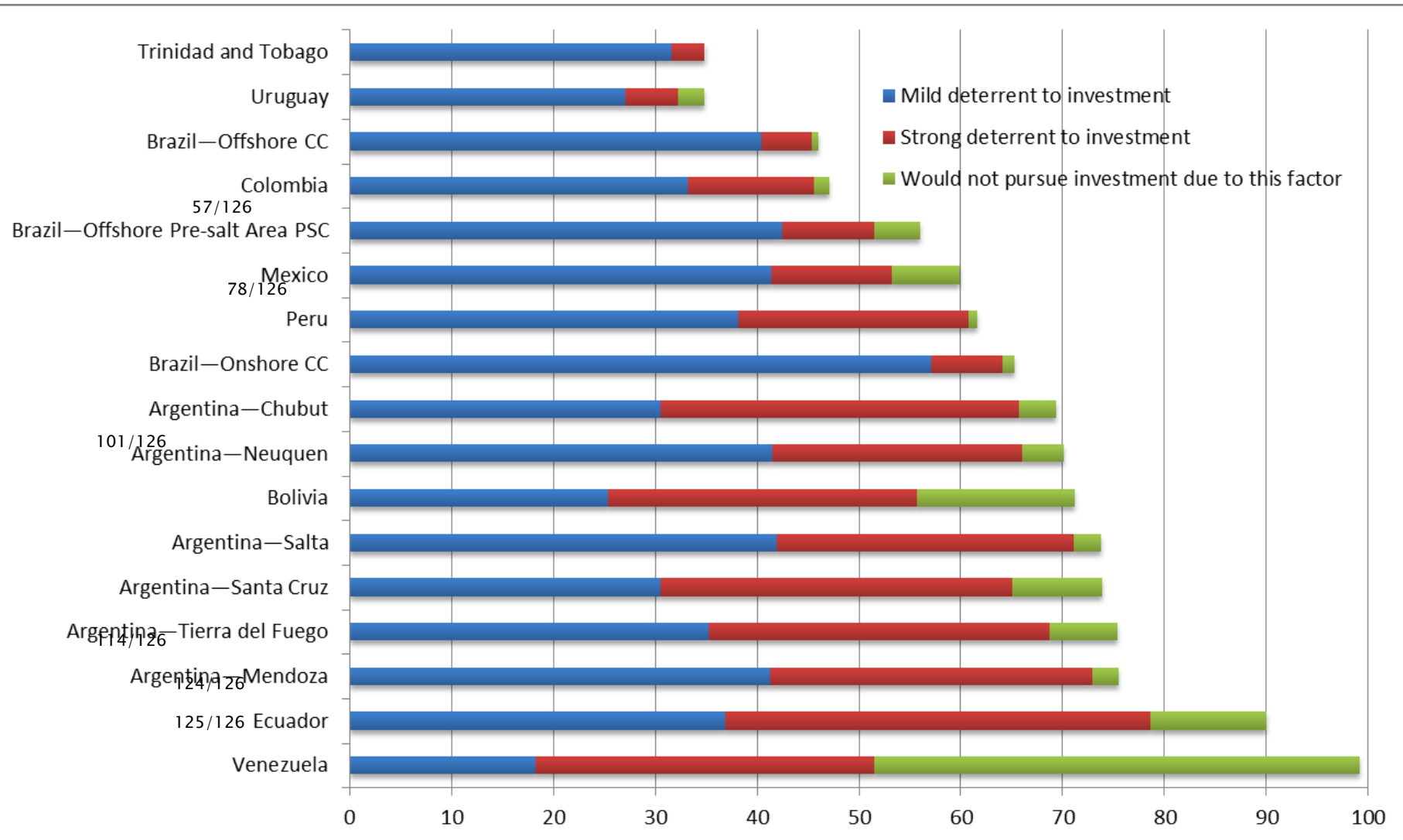
Rank	Country	Shale gas (trillion cubic feet)
1	China	1,115
2 →	Argentina	802
3	Algeria	707
4	U.S.	665
5	Canada	573
6 →	Mexico	545
7	Australia	437
8	South Africa	390
9	Russia	285
10 →	Brazil	245
	<b>World Total</b>	<b>7,299</b>

# The Big Three: Production



Source: BP SRWE 2016

## Fraser Institute Global Petroleum Survey 2015: Policy perception index

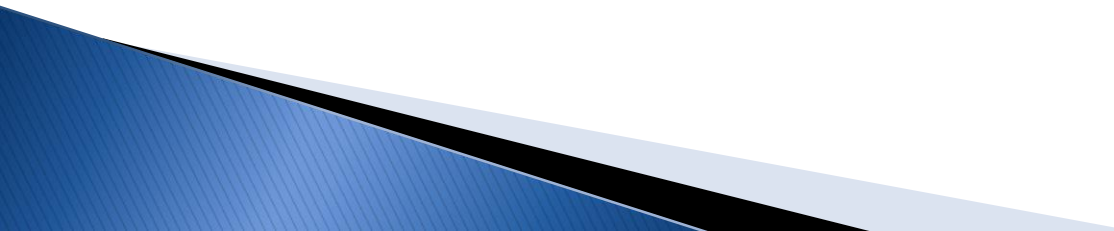




# After the price fall: a new liberalization cycle?

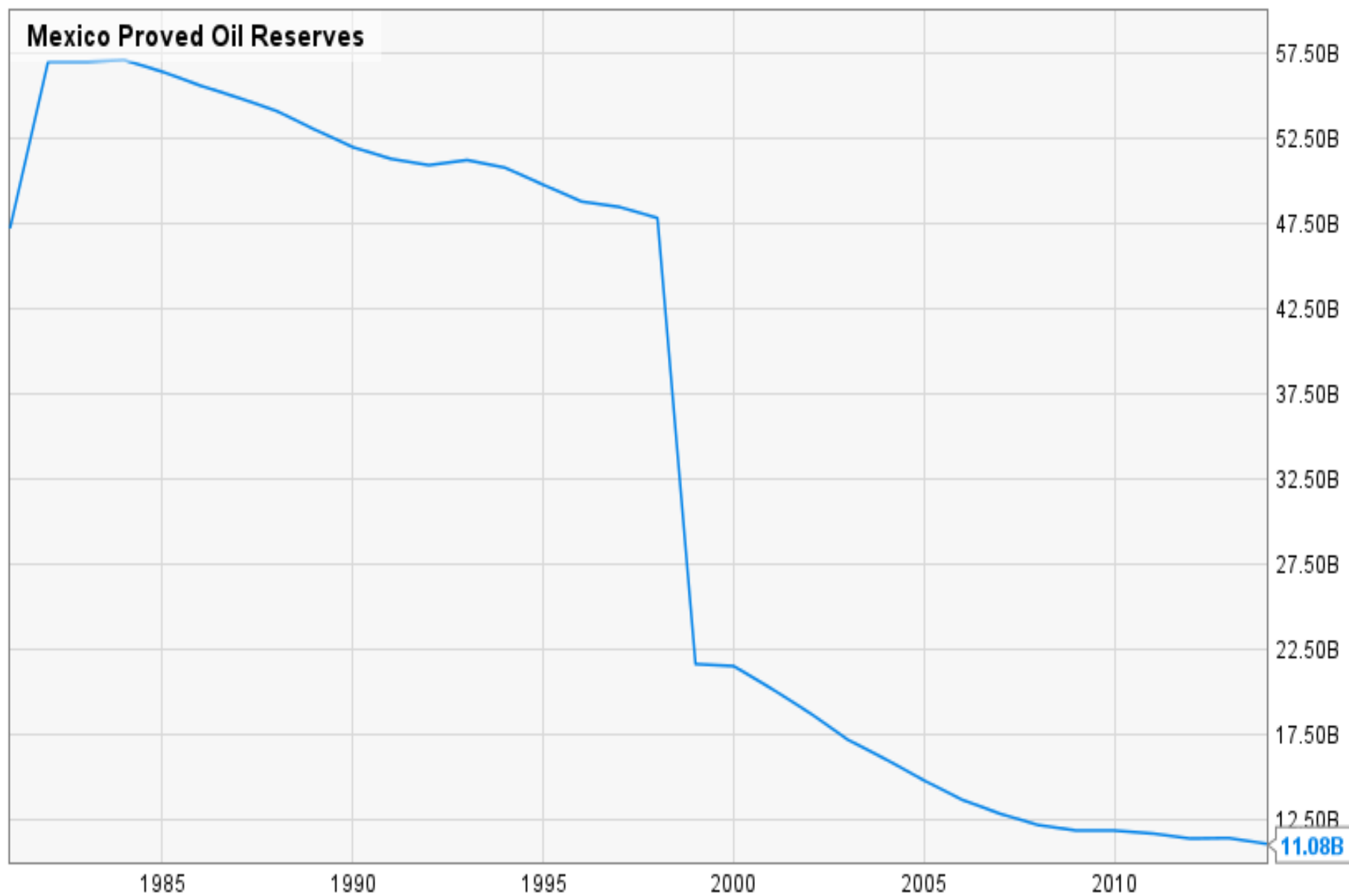
- Venezuela is liberalizing the oil sector. Cutting windfall taxes and royalties, giving JV partners control over cash flow, a weaker exchange rate to invest, and a more pragmatic model. But above ground risks still too large.
- Argentina approved a new more liberal law with attractive terms. Has signed deals with Chevron and others. Macri has shifted policy, but still very attractive framework for companies.
- Mexico's opening is going more or less as expected, still the more attractive areas have not been auctioned.
- Colombia and Peru continue to try to attract more investment.
- Brazil has shown some signs that it would become more pragmatic again, e.g. less domestic subsidies. The new government wants less Petrobras equity and possibly private operation, less local content requirements, etc.

# Key opportunities and challenges

- ▶ The Mexican oil and gas sector
    - Deep waters
    - Pipelines
    - Value chain
  - ▶ Venezuela after the transition
    - Extra-heavy
    - Mature fields
    - Gas exports to Trinidad and Colombia.
  - ▶ Brazil deep waters
  - ▶ Argentina's Vaca Muerta shale
- 

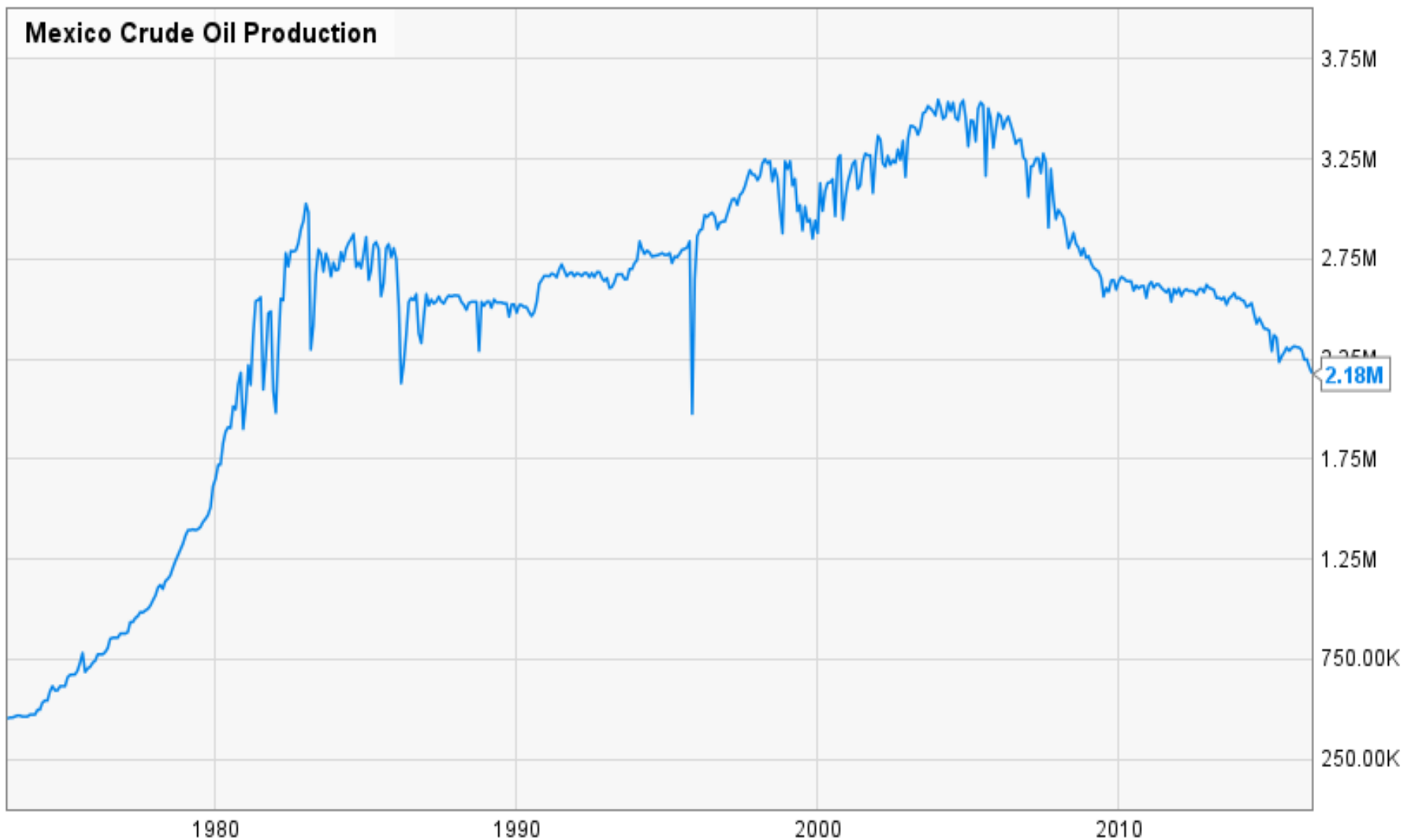
# Mexico

## Mexico Proved Oil Reserves



Source: BP

## Mexico Crude Oil Production



Source: EIA

## Mexico Oil Rig Count

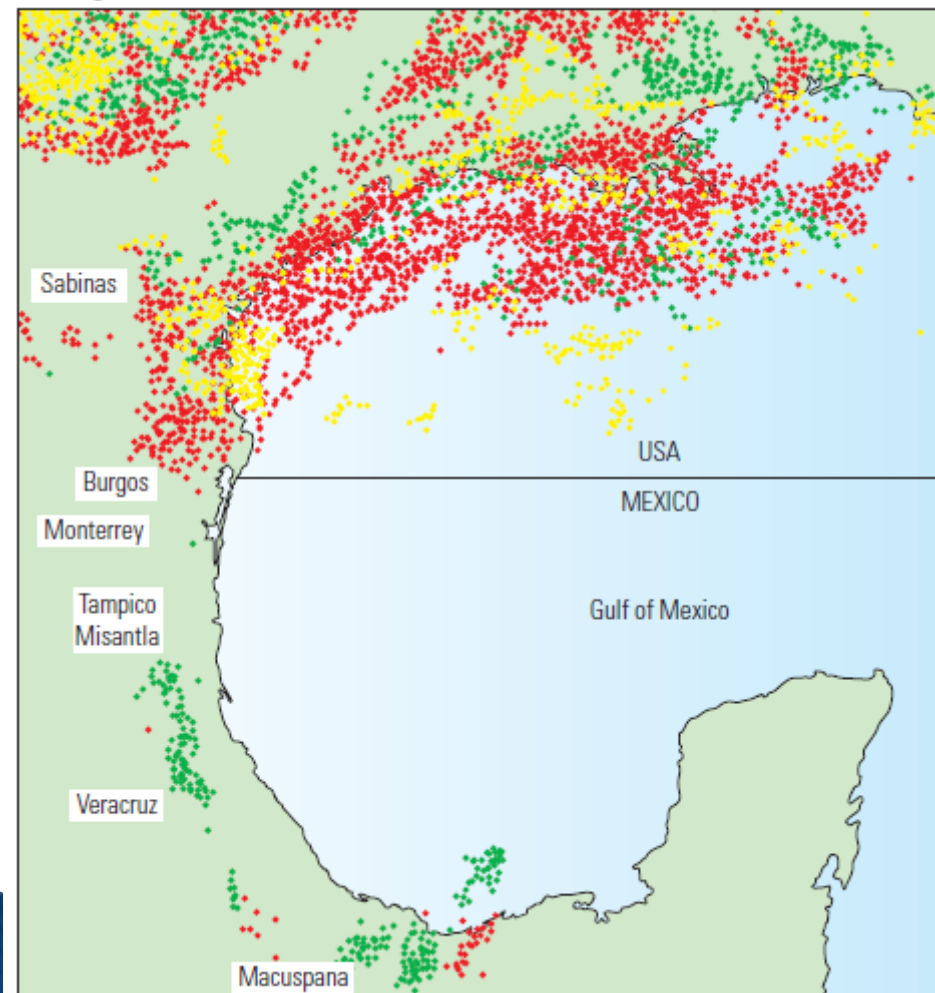


Source: Baker Hughes

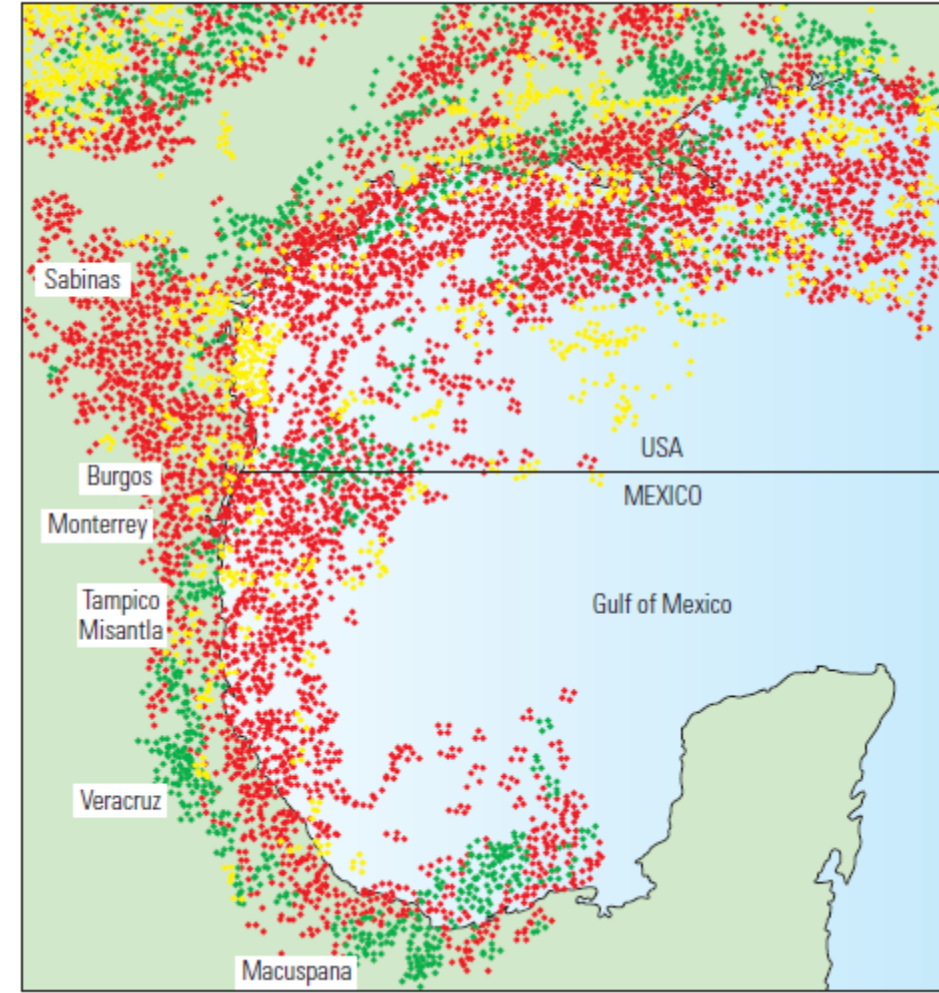
## What could happen in Mexico...

The Gulf of Mexico on the Mexican side could experiment a great expansion in well drilling activity in the next decade.

**Existing Oil and Gas Wells**



**Projected Oil and Gas Wells**

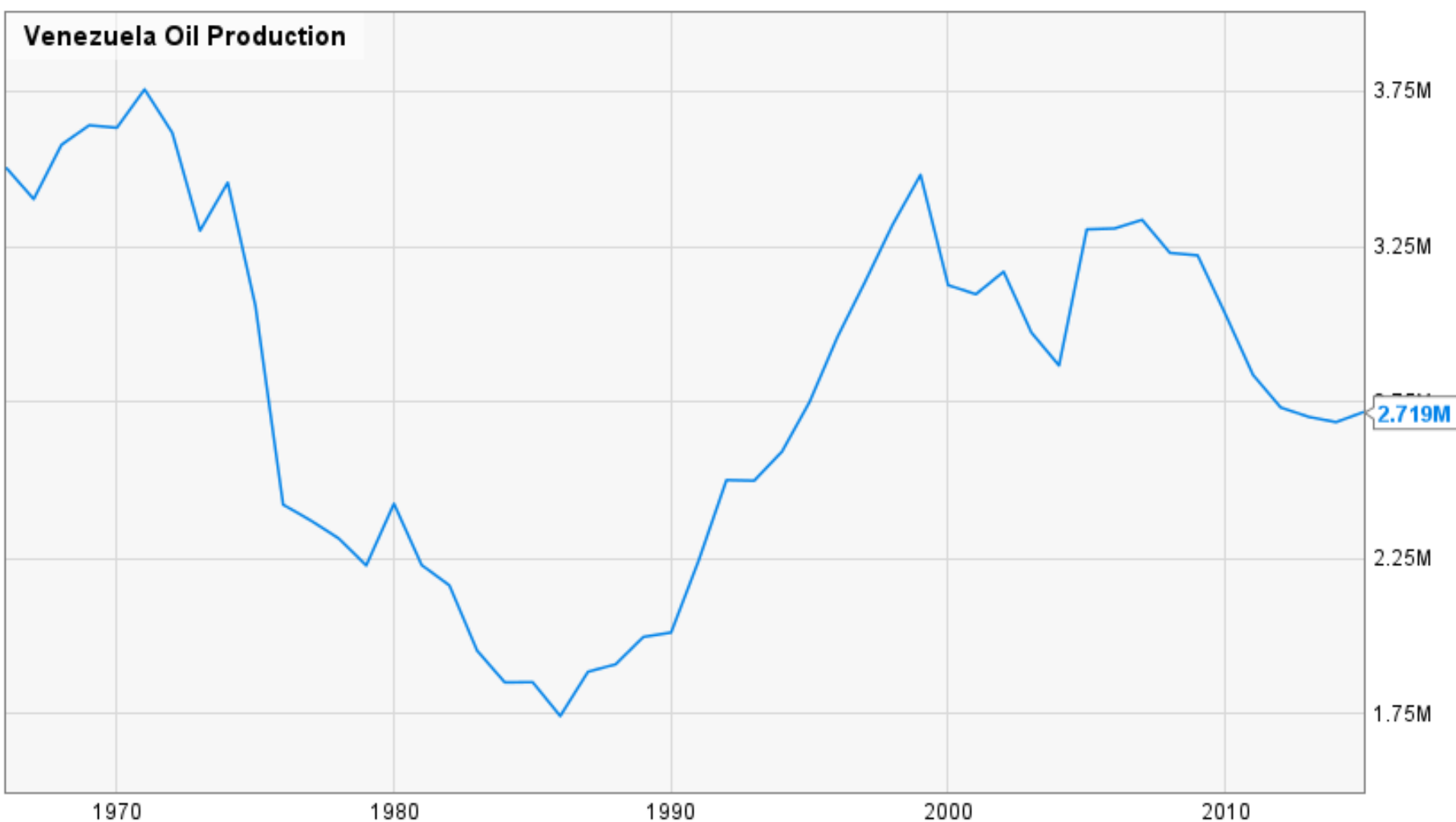




# Venezuela

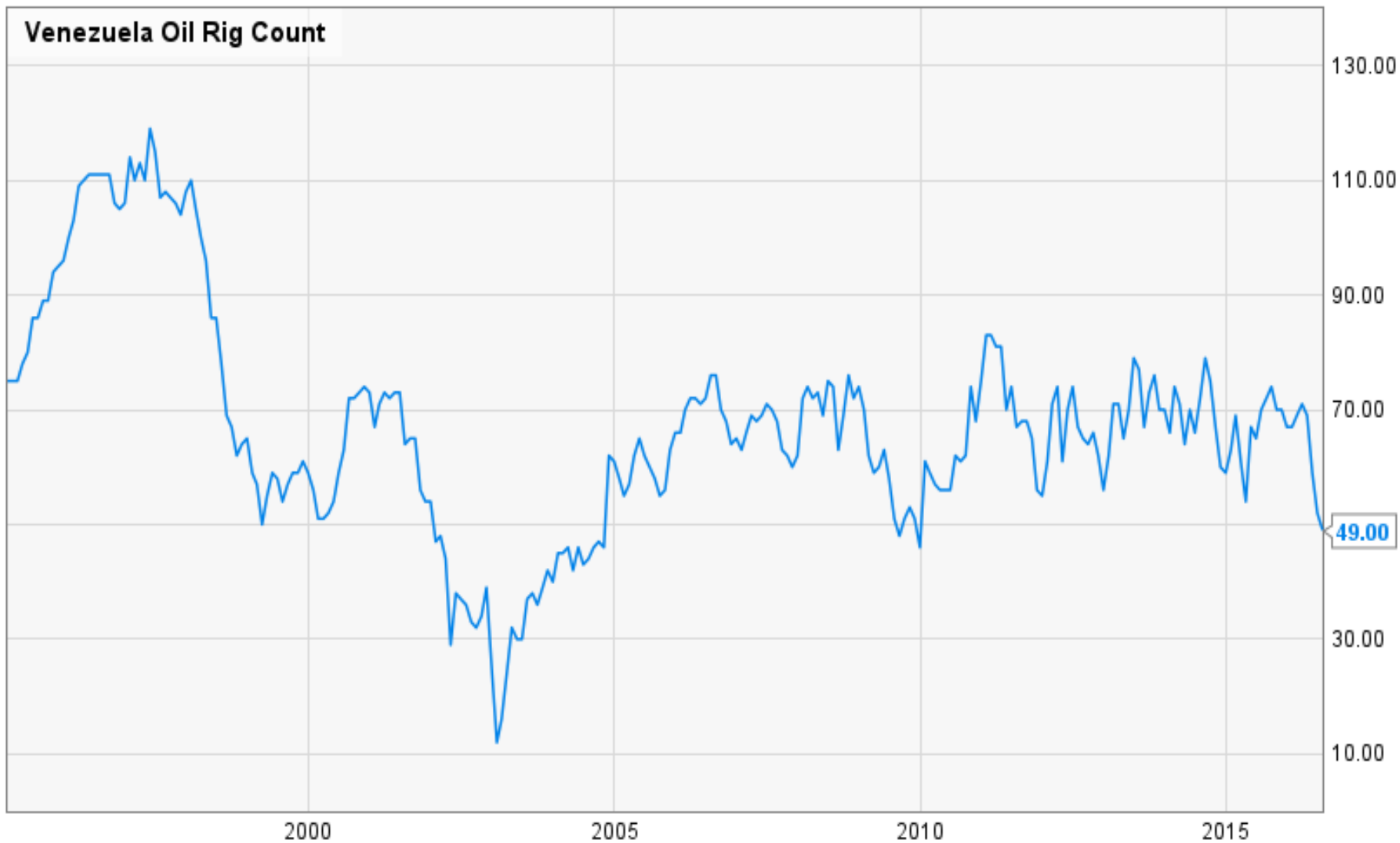


# The Rise and Fall... and Rise again and Fall again of the Venezuelan Oil Industry



Source: BP

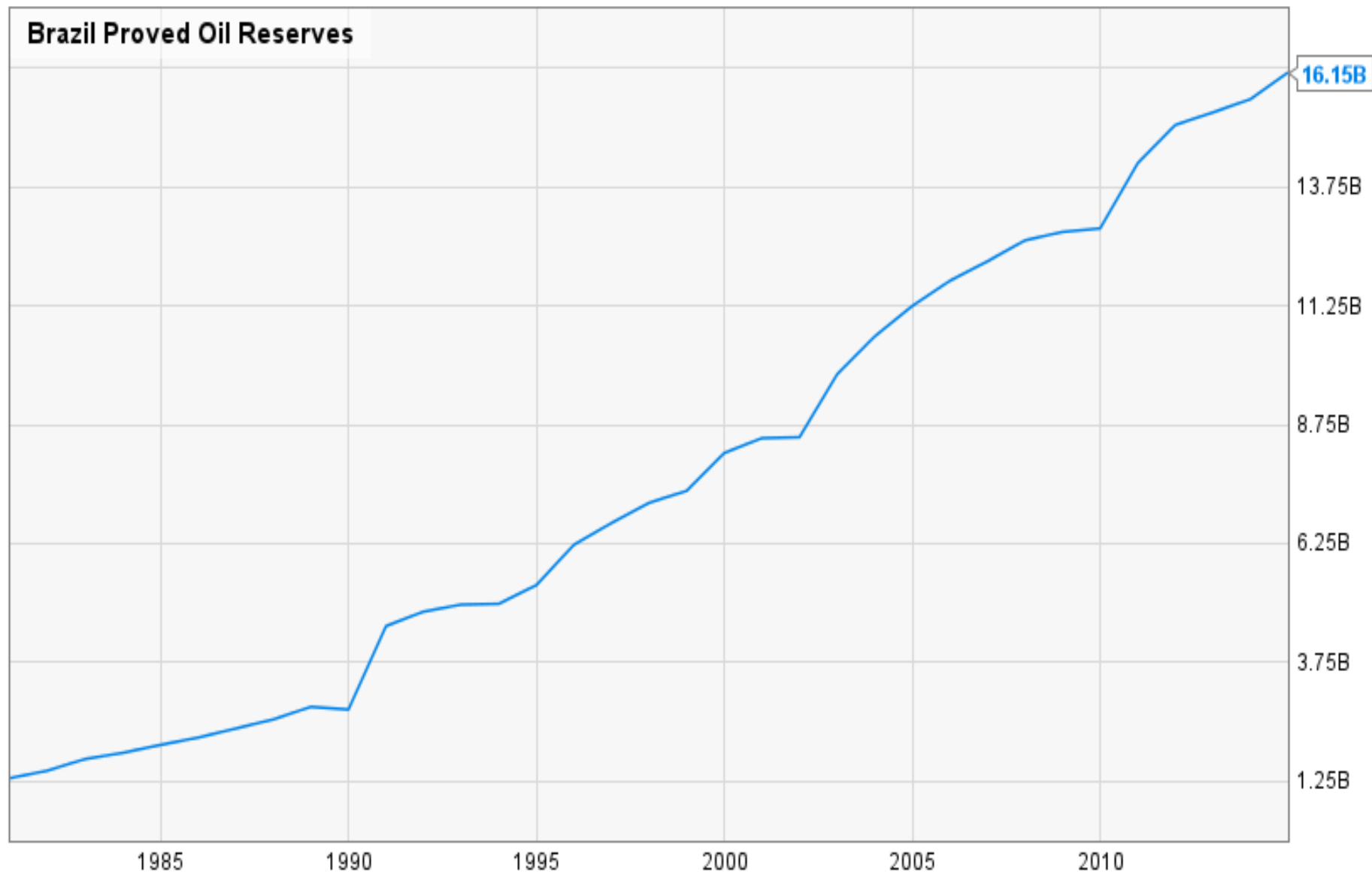
## Venezuela Oil Rig Count



Source: Baker Hughes

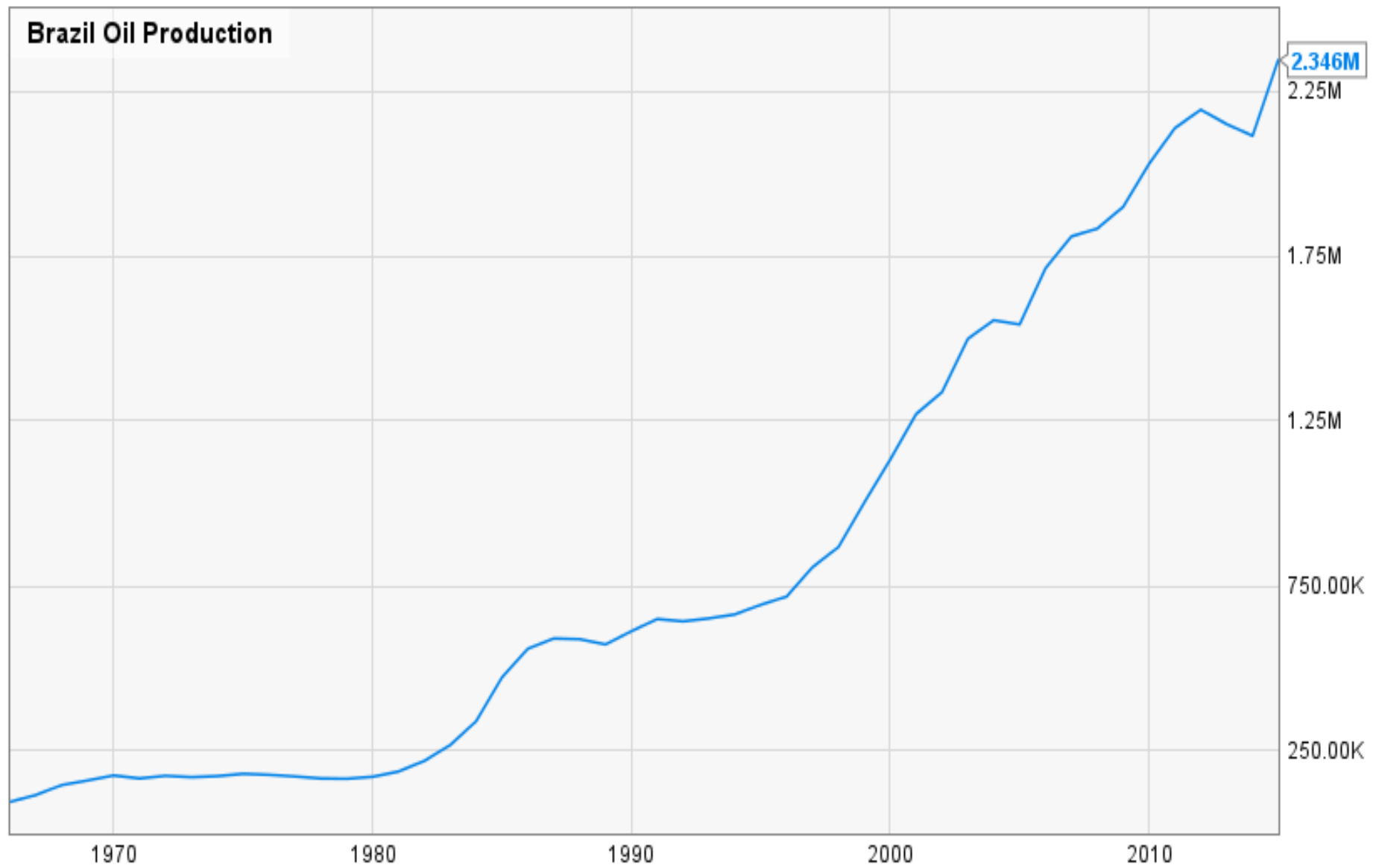
Brazil

## Brazil Proved Oil Reserves



Source: BP

## Brazil Oil Production



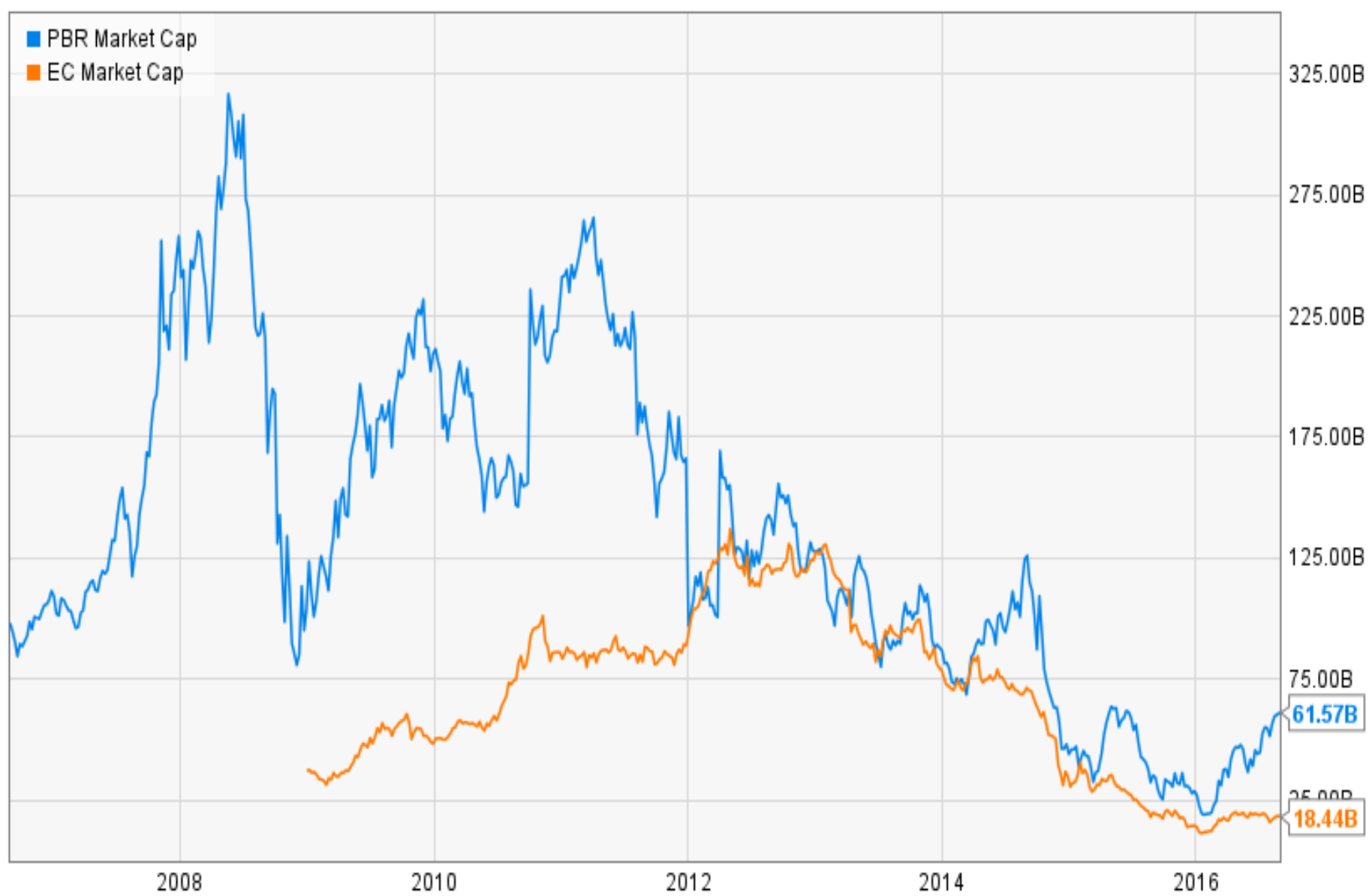
Source: BP

## Brazil Oil Rig Count



Source: Baker Hughes

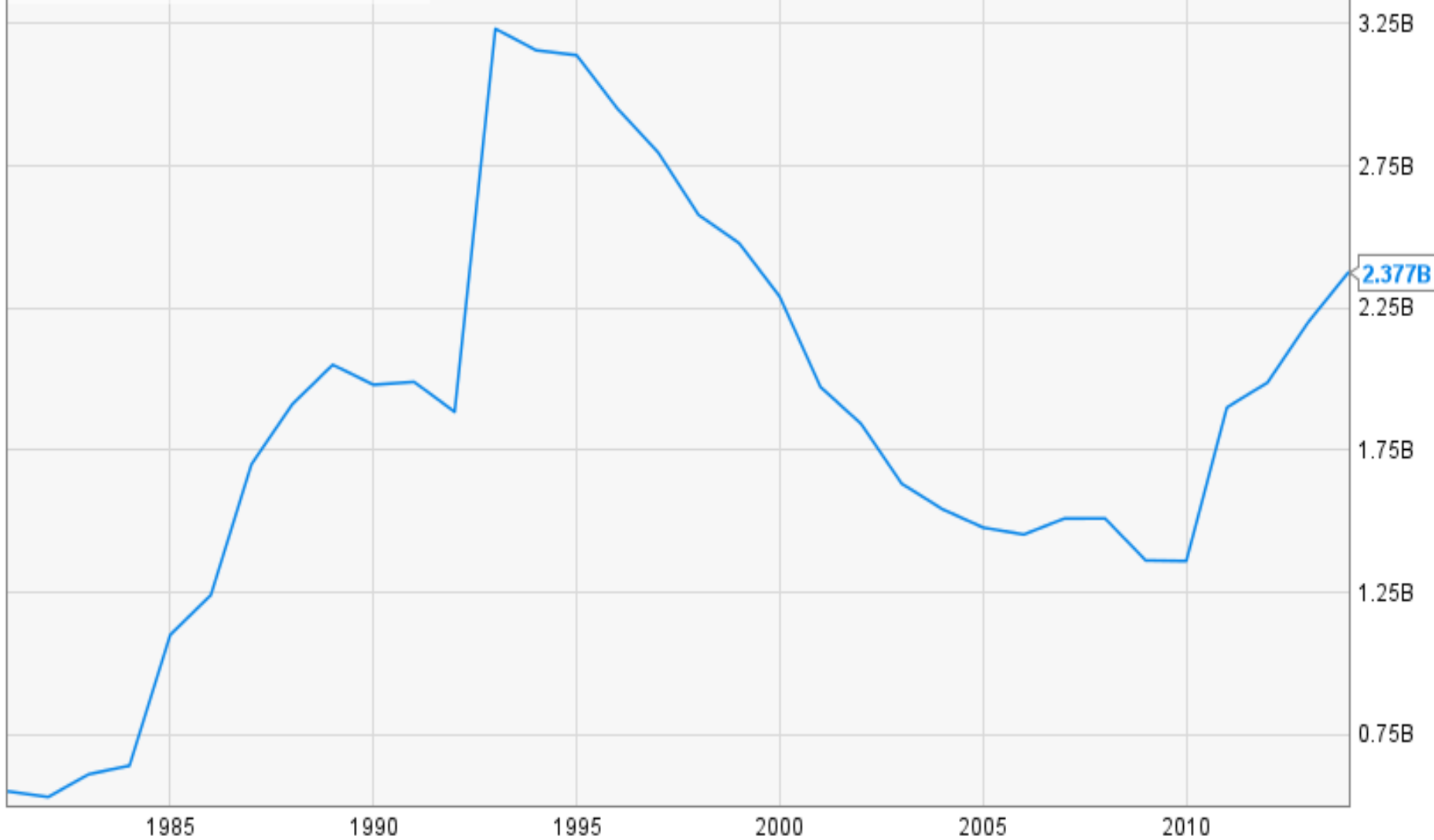
Aug 31 2016, 10:00AM EDT. Powered by **YCHARTS**



# Colombia

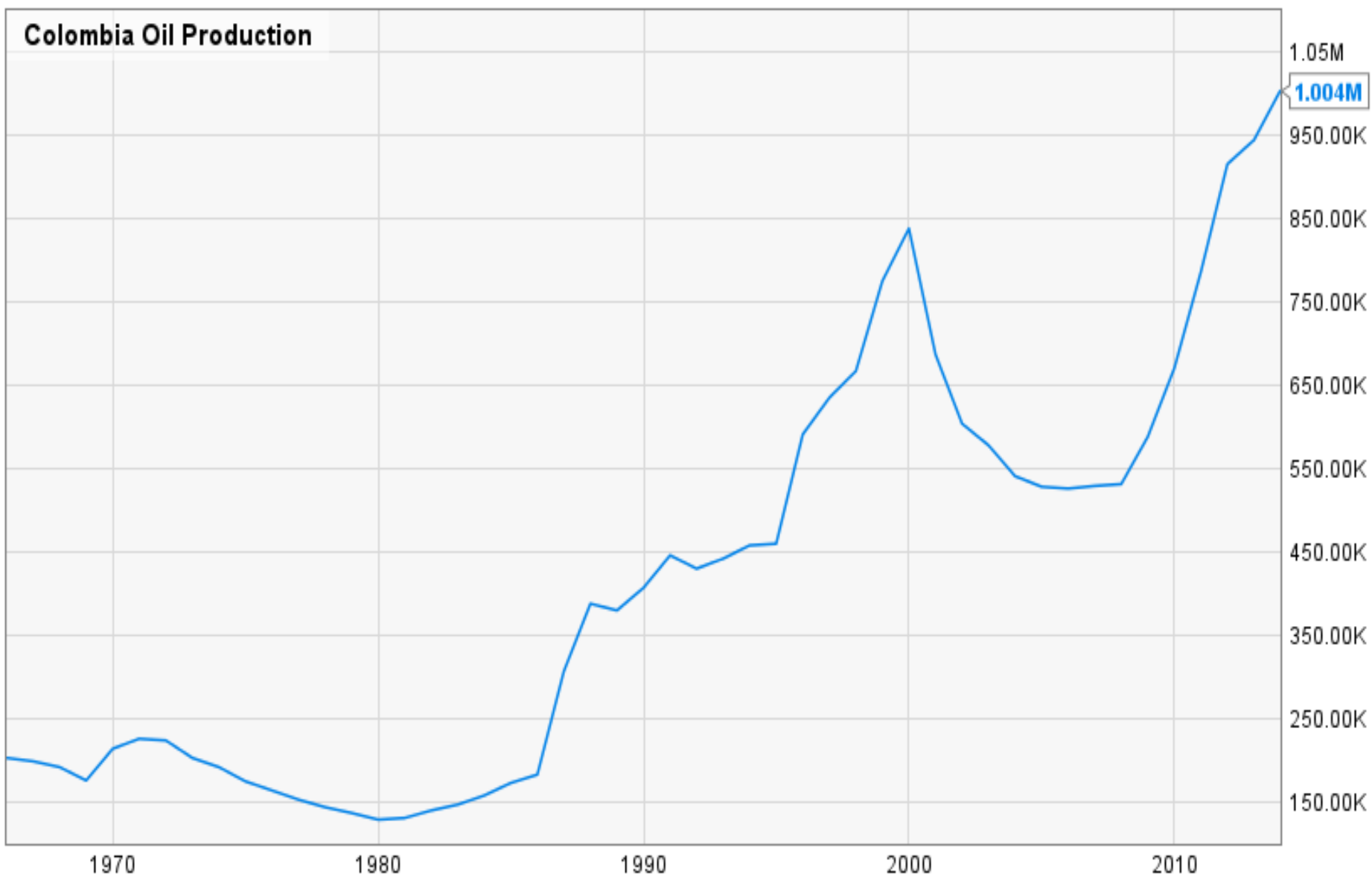


## Colombia Proved Oil Reserves



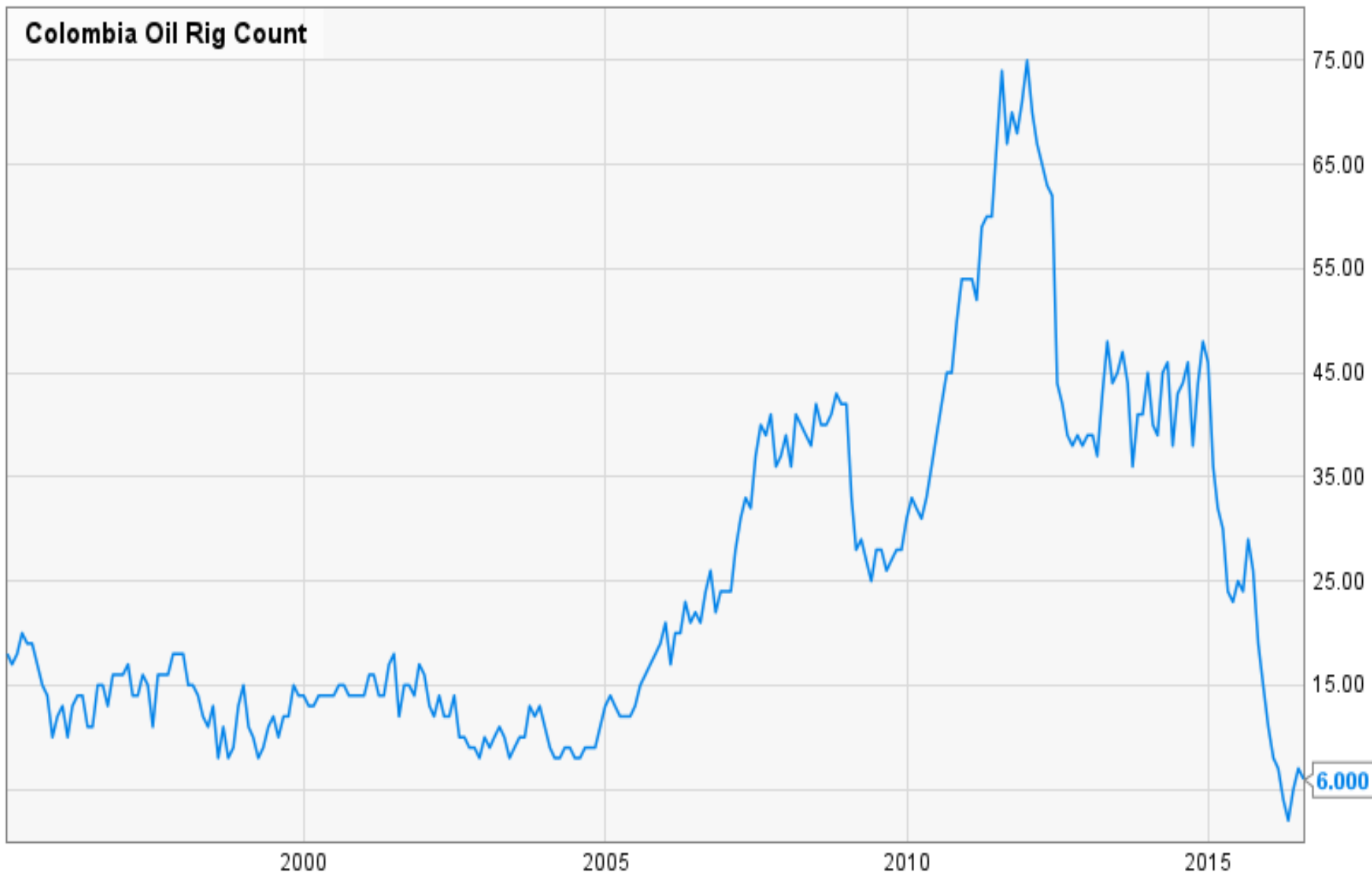
Source: BP

## Colombia Oil Production



Source: BP

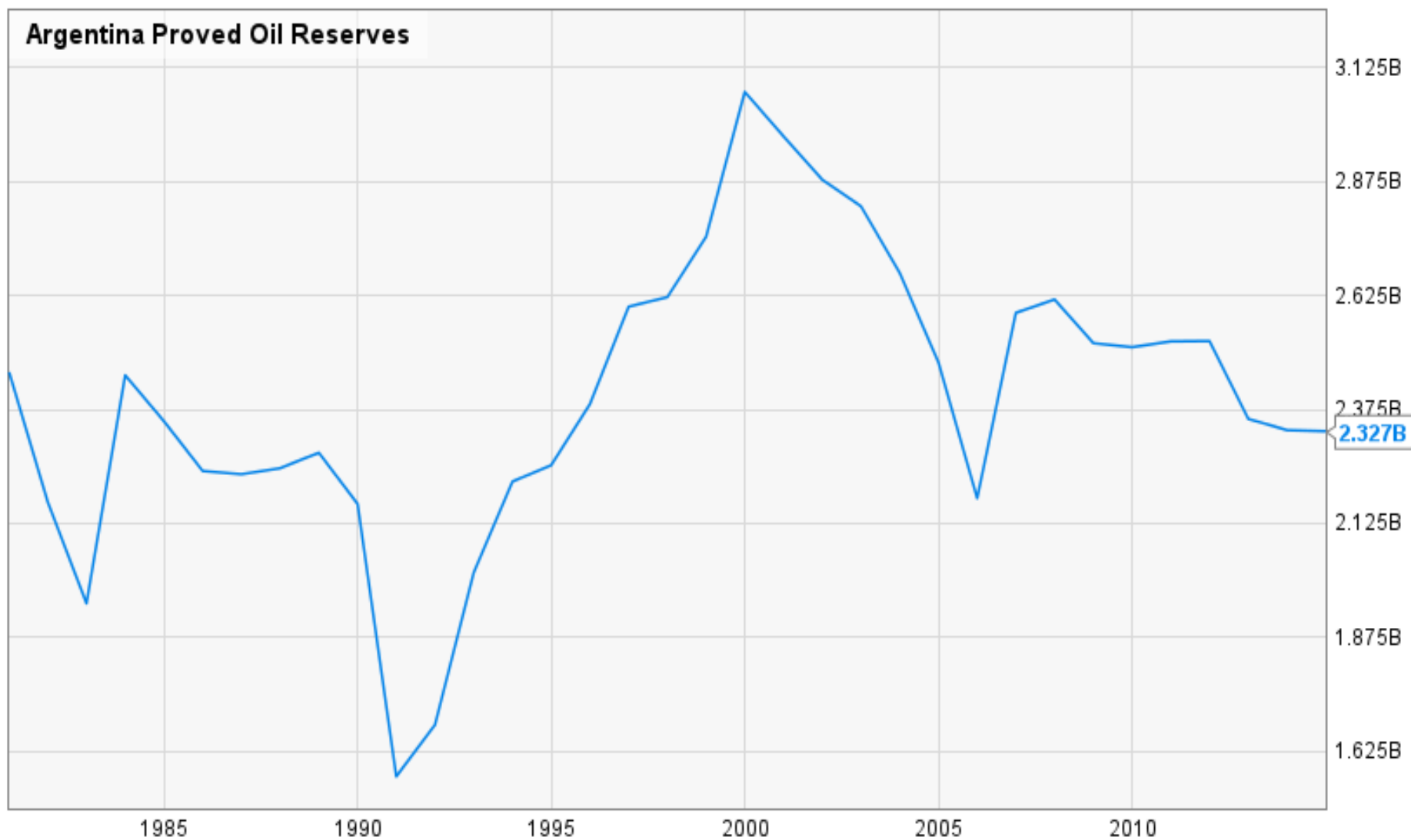
## Colombia Oil Rig Count



Source: Baker Hughes

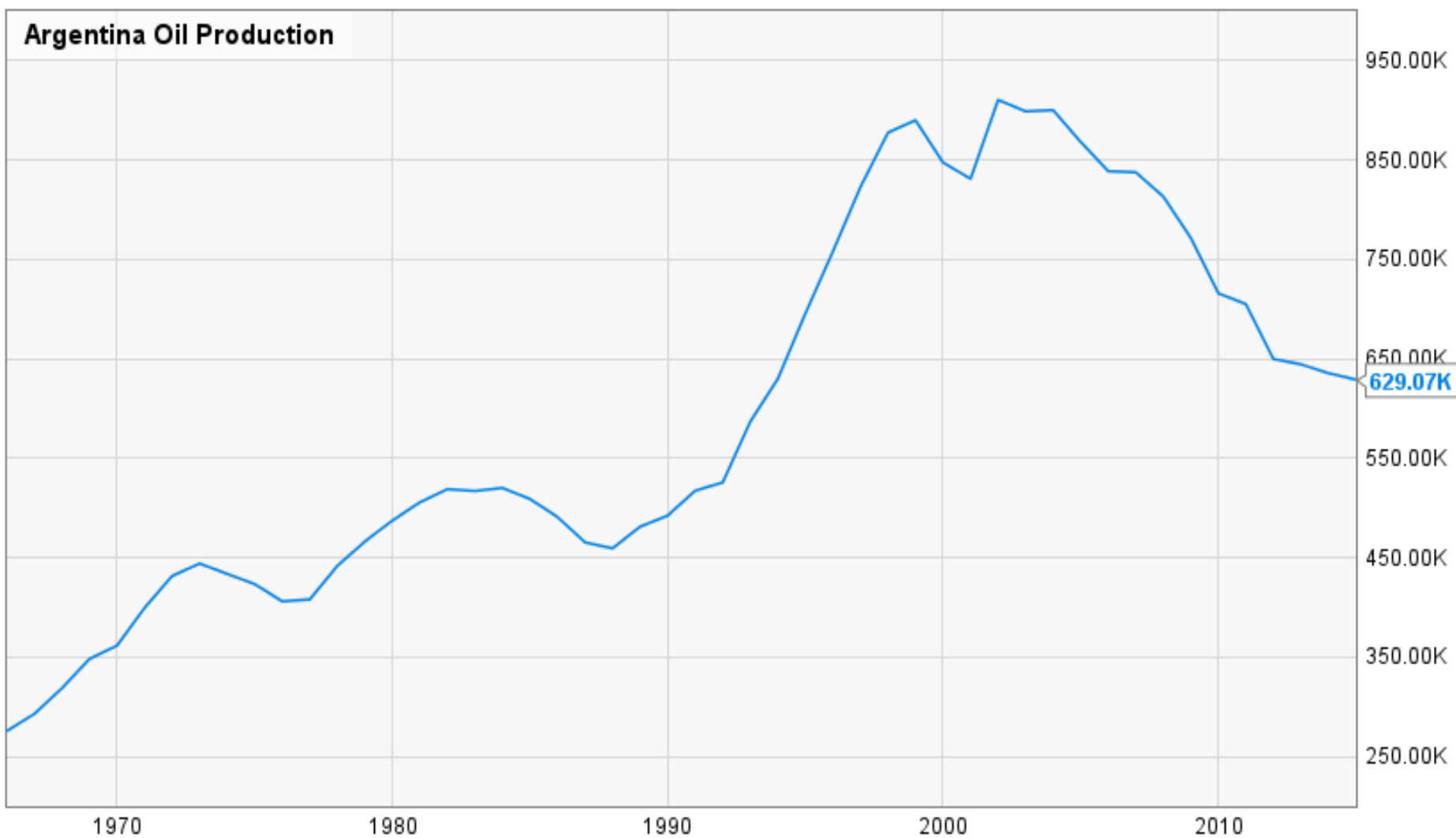
# Argentina

## Argentina Proved Oil Reserves



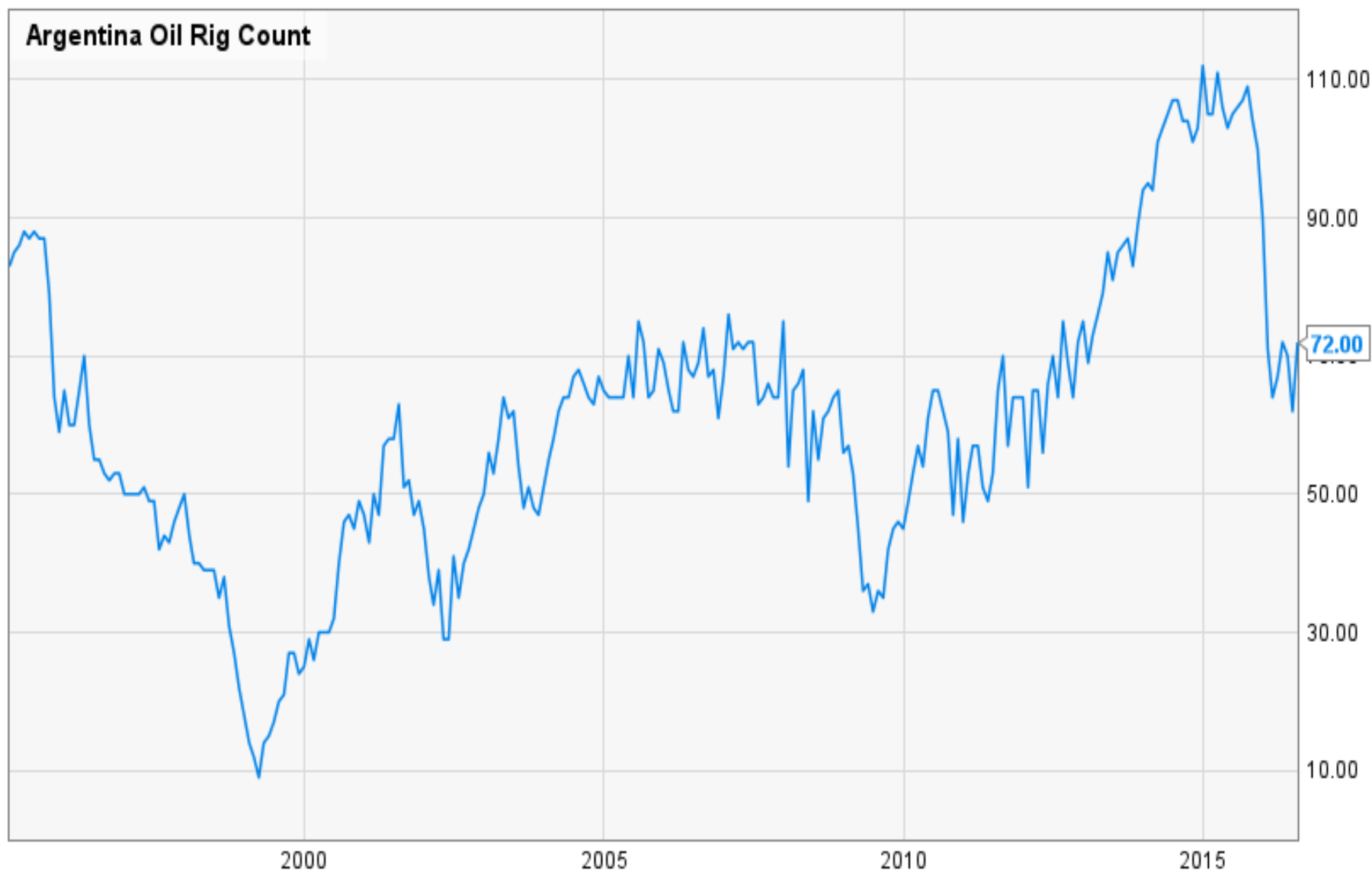
Source: BP

## Argentina Oil Production



Source: BP

## Argentina Oil Rig Count



Source: Baker Hughes

## YPF Market Cap





Thanks for your attention

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