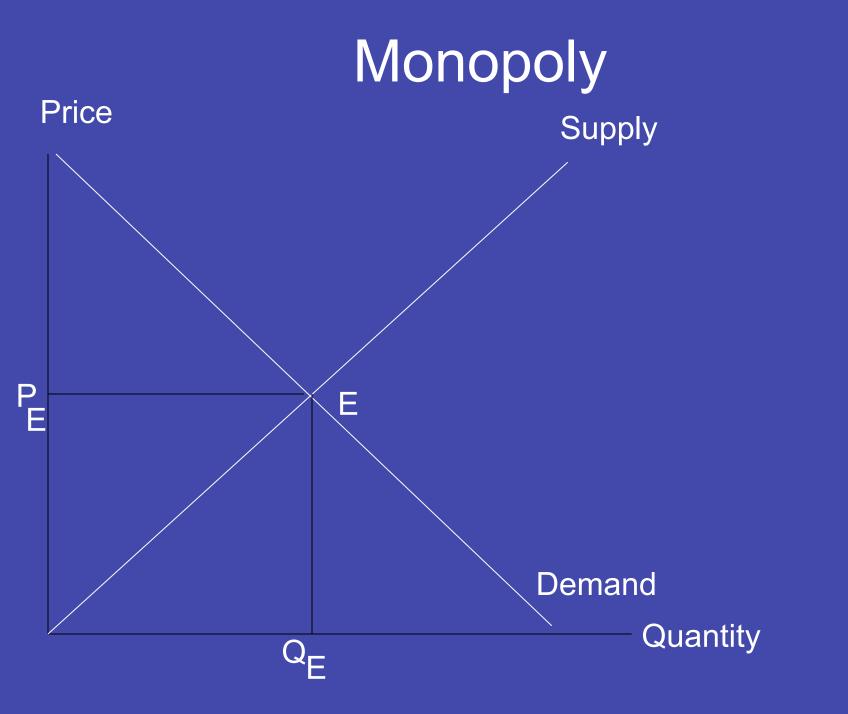


http://upload.wikimedia.org/wikipedia/commons/7/73/OPEC_headquarters.jpg



Monopoly

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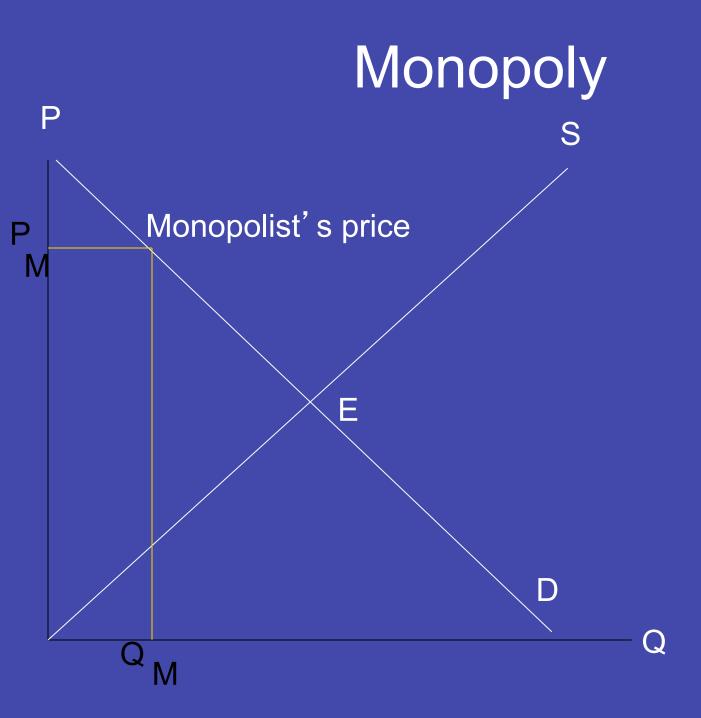
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Marshall's "Consumer Surplus" - a benefit to the entire community, a measure of economic efficiency.



Monopoly Ρ S Marshall's Dead-Weight Μ Loss: it benefits no one! Ε D

 \mathbf{Q}

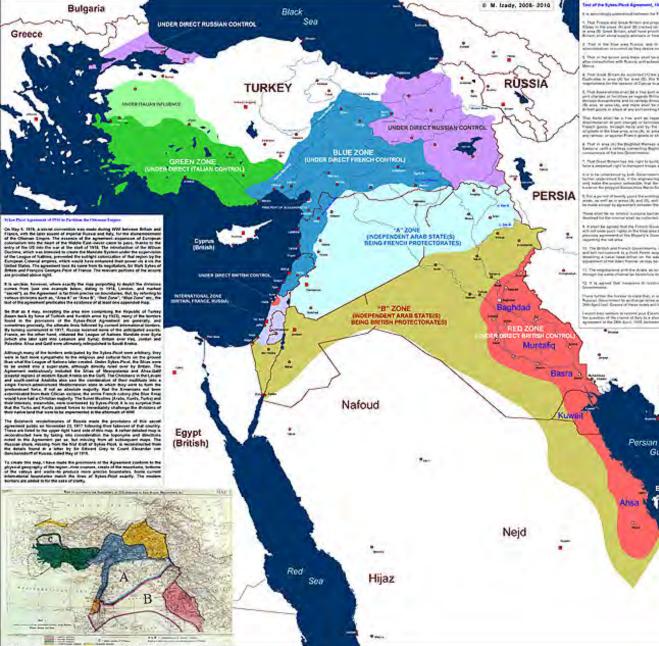
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Brief Distraction: Ottoman Empire



1919: Sikes-Picot



Text of the Sylves, Plank Agroumont, 1916 (sections pertaining to the division of the Ottoman Empire)

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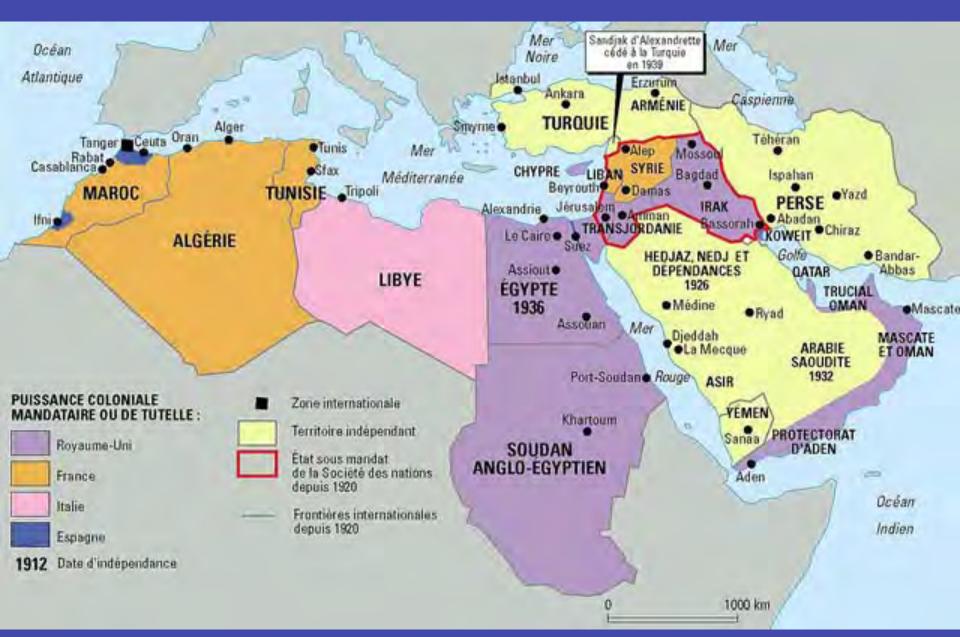
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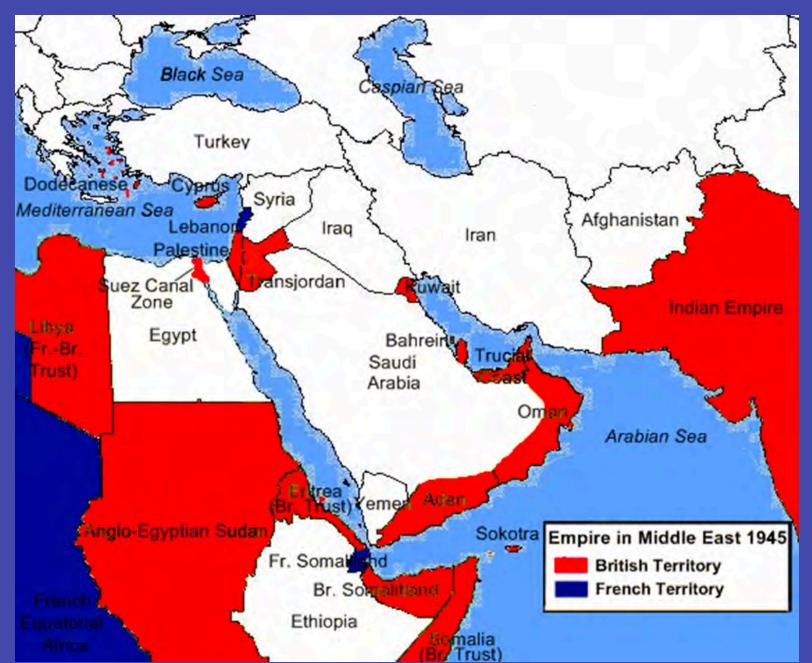
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Feb 2011: End of Distraction

Northern Africa and the Middle East

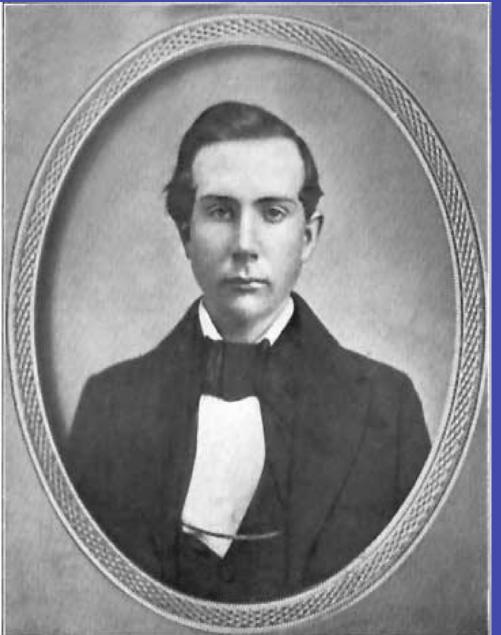


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The Organization of Petroleum Exporting Countries

Saudi Arabia, Venezuela, Iran, Iraq, Kuwait, Qatar, UAE, Nigeria Colombia, (Indonesia), (Angola), (Ecuador)

But first a digression . . .



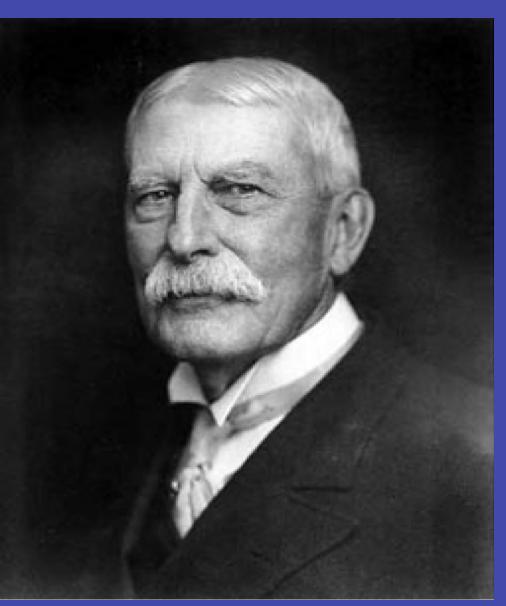
Born in New York, family moved To Cleveland in 1853.

First job as bookkeeper in 1855, became grain merchant for same Company in 1857.

Oil discovered in 1859 in Titusville, Pennsylvania.

1863: Rockefeller, Maurice Clark, and Samuel Andrews founded Andrews, Clark and Co, a Cleveland OH refining company.

John D Rockefeller (1839-1937)



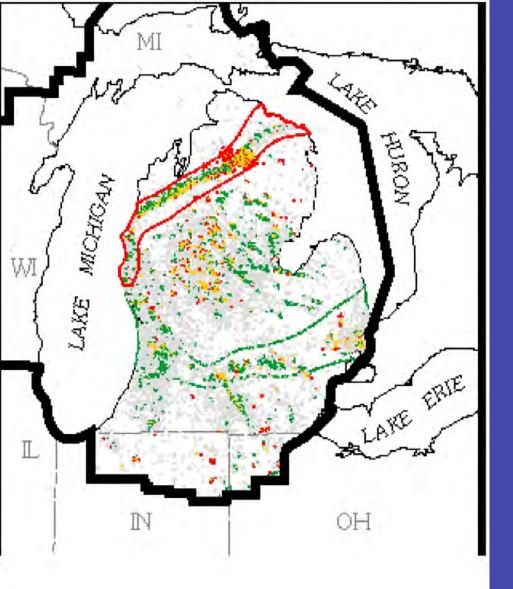
Henry Flagler 1830-1913

Raised in Hopewell NY Moved to Bellevue OH at 16 Worked in uncle's grain store.

Founded Flagler and York Salt Company in 1862. Company bankrupt in 1865 following end of Civil war.

Returned to family business as a grain merchant in 1866.

Met a fellow grain merchant employed by family business: John D Rockefeller, who was also a partner in a small company . . .



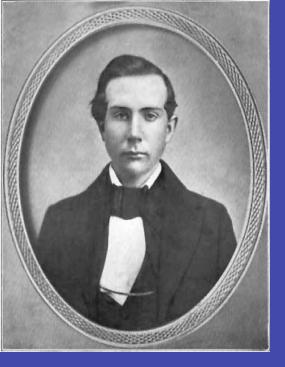
Pop Quiz:

What's so great about Cleveland?

Answer:

Proximity to the first major petroleum province: The Michigan Basin.

Also the source of salt sold by Flagler and York Salt Company.



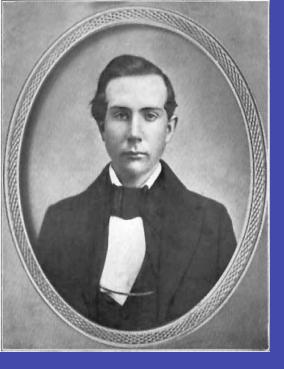
In 1865 Rockefeller and Andrews bought the refinery from their partners for \$72,000.

In 1870 Rockefeller organized Standard Oil with William Rockefeller, Andrews, S V Harkness, and Henry Flagler with capital of one million dollars. By 1872 Standard purchased almost all of the refineries in Cleveland and two New York refineries.

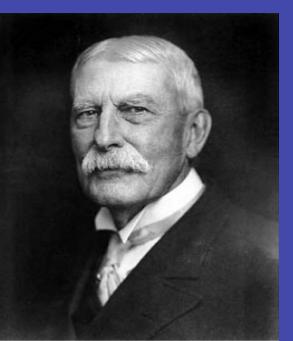


In 1882 all of Standard's properties were Merged to form the Standard Oil Trust, with Capital of 70 million dollars.

In 1882 Flagler left Standard's daily operations but remained on the Board of Directors. He devoted his remaining days Developing Florida's east coast.



In 1892 an Ohio court dissolved the Trust, creating several smaller companies. These companies reorganized in New Jersey the following year as Standard Oil Company (New Jersey). Soon this company owned Up to 75% of the US oil business.

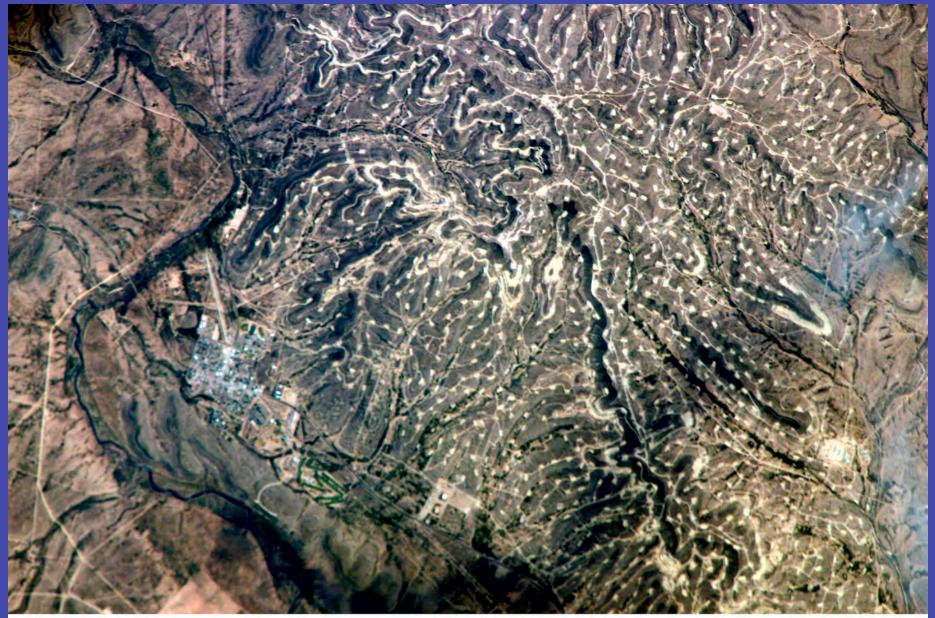




Rockefeller left daily activities of the company in 1896, remaining Chairman of the Board. His later years were devoted to philanthropy: University of Chicago (1889), Rockefeller Institute (1901), Rockefeller Foundation (1913).

In 1911 the US Supreme Court ordered the issolution of Standard Oil, creating 38 individual firms, including the "Seven Sisters".

The Yates Field and the Texas Railroad Commission



ISS013E26487

Yates Oil Field: 1.2 Billion Barrels

- Discovered 1926 at 992' below the surface
- First large field west of the Pecos River
- In 1928 The Texas Railroad Commission set a quota for each well in the field so that each well owner could ship some oil through the field's only pipeline.
- In 1929 a Yates well flowed 204,672 BOPD
- The TRC soon dictated "prudent" oil field practices throughout the Texas, known as "pro-rationing".

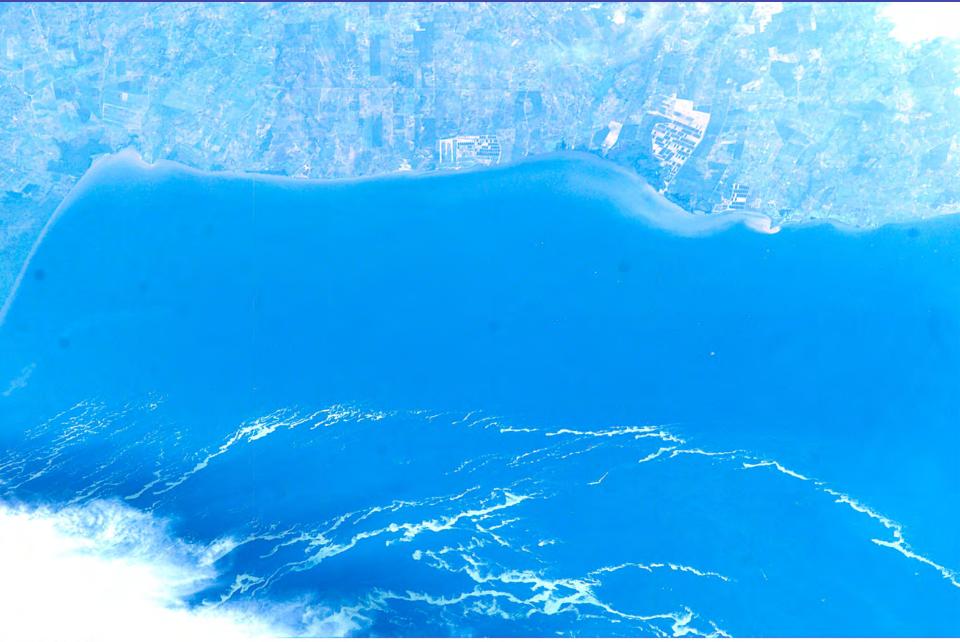
East Texas Field: Six billion barrels of oil Discovered 1930



East Texas Field

- HL Hunt purchased leases from "Dad" Joiner
- Price oil fell from \$1/bbl to \$0.15/bbl between 1930 and mid-1931.
- F. Godber of Shell Oil asked Texas Legislature to "pro-ration" East Texas Field production.
- Mid-1931 East Texas Field accounted for half of world's oil production.
- Founded in 1891 to regulate in-state railroads, the TRC shut down East Texas Field. August 1931
- Nov 1931 the TRC introduced "pro-ration" statewide.
- Hunt founded Hunt Oil Co in 1934.

Lake Maracaibo, Venezuela: Mene Grande Field 1914



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http://geoinfo.nmt.edu/staff/scholle/graphics/stamps/venezprf/VenPostcd.jpg

Juan Carlos Perez Alfonso

- Venezuelan businessman
- Moved to US after 1948 coup d'etat
- Detailed study of Texas Railroad Commission oil regulatory activities
- Proposed formation of an organization of petroleum exporting countries in 1949.

The Arab Peninsula and Gulf

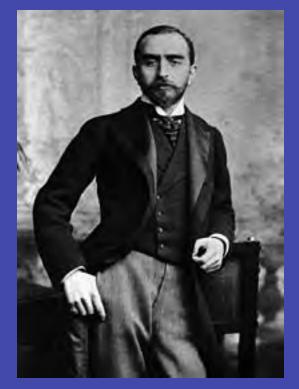
- 1914 Turkish Petroleum Co. Concession
- 1914 Archduke assassinated
- 1919 Treaty of Versailles
- 1920 San Remo Agreement
- 1921 Faisal made King of Iraq
- 1925 TPC Concession revised
- 1926 The Treaty of Lausanne
- 1927 Baba Gurgur-1 oil discovery
- 1928 TPC Red Line Agreement
- 1932 minor discoveries in Bahrain

1914 Turkish Petroleum Co. Concession Founded in 1912 to seek Iraqi concessions. Anglo-Persian Oil Co (British Government) 50%

Deutsche Bank

Royal Dutch Shell

Calouste Gulbankian Mr Five Percent



1920 San Remo Agreement British control of Mesopotamian oil (ie TPC) Option for Iraq to claim 20% interest German interest transferred to France (CFP) US and Italy excluded from TPC

 1925 TPC Concession revised Concession did not include Iraq Granted for 75 years TPC chose 24 plots for its holding Iraq government to receive royalty for each ton of oil produced after 20 years Iraq permitted to tax TPC at same rate as Other companies. TPC to build refinery and pipeline for Iraq

- 1926 The Treaty of Lausanne Ended the Ottoman Empire - Defined the borders of Turkey 1927 Baba Gurgur-1 oil discovery - 5 US companies then added to TPC Anglo-Persian given 10% royalty 1928 TPC Red Line Agreemen - TPC partners could not act independently within the borders of the Ottoman Empire
 - US and other TPC members excluded from exploration in Arab/Persian Gulf until 1945

- 1914 Turkish Petroleum Co. Concession
- 1914 Archduke assassinated
- 1919 Treaty of Versailles
- 1920 San Remo Agreement
- 1921 Faisal made King of Iraq
- 1925 TPC Concession revised
- 1926 The Treaty of Lausanne
- 1927 Baba Gurgur-1 oil discovery
- 1928 TPC Red Line Agreement

1928 TPC Red Line Agreement 1929 TPC renamed Iraq Petroleum Co (IPC) **Anglo-Persian** Esso (later EXXON) CFP "minor" US companies 1931 IPC contract renegotiated 75 year term over 83,200 sq km Commited to build two pipelines to Med

Burgan Discovery Well Kuwait 1938

شركة نفط لكونت المحدودة KUWAIT OIL COMPANY LTD. BURKAN FIELD DISCOVERY WELL الآيارالكتنفه فيعتل يرقان BG-I-IM برقان اي بدايةالغر SPUDDED 16-10-1937 19541-17 FIFST PRODUCED 23-2-1938 1957-5-55 اول انتاع COMPLETED 14.5-38 التوقف عن الخبر ١٩٣٨ • ١٩٣٨ RECOMPLETED 286. 5 1905-7-54

http://www.geoexpro.com/sfiles/66/19/1/picture/burgan464.jpg

Damman Field Discovery Well Saudi Arabia 1938



1938 Burgan Field discovered in Kuwait

- 1939 Iraq exports 4 tons/year (30 mmbo/year)
- 1938 Damman Field discovered in Saudi Arabia
- January 1941 World War Two shut-down
 World Reserves: 63% US, 5% Middle East
- 1946 Socony and Standard Oil form Aramco
- 1948 Iraq Petroleum Co formed, Red Line Agreement ended
- 1949 Getty Oil agrees to pay Saudi Arabia \$0.55/bbl royalty
- 1953 CIA-led coup in Iran places Shah in power.
- 1958 Army coup in Iraq
- 1960 IPC 99.5% concession in Iraq revoked
- 1960 OPEC founded

Question: Why OPEC? Answer: Standard Oil

- 1960 Middle East oil production depressed world crude prices
- July 1960 Standard Oil reduced the posted price it paid by seven percent
- Perez contacted Abdullah Tariki, Minister of Energy, Saudi Arabia, suggesting they formulate a joint response to Standard Oil's decision.

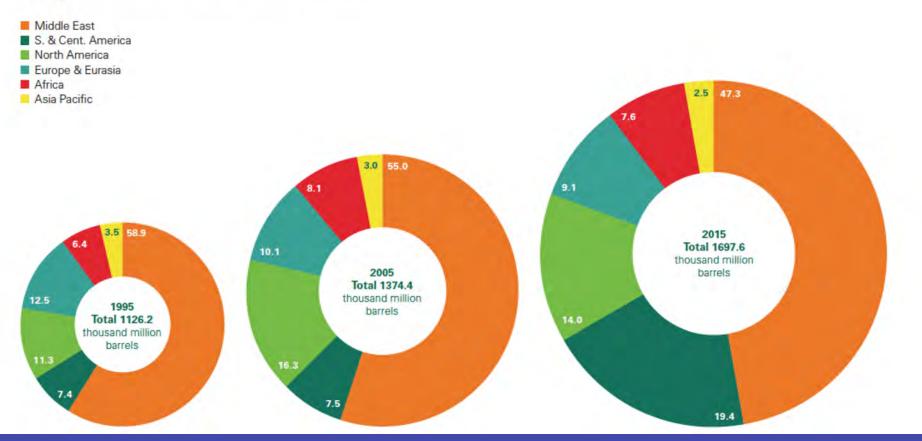
Recent History of Oil in the Gulf

- 1960 OPEC founded
- 1972 Kirkuk Field discovered in Iraq
- 1973 First Arab Oil Embargo following October Yom Kippur War
- January 1979 Shah of Iran deposed
- November 1979 US Embassy in Tehran seized
- Carter embargoes Iranian Oil the next day
- 1979 Second Arab Oil Embargo begins with 15% reduction in OPEC production

Further History of Oil in the Gulf 1982-1988 Iraq-Iran War 1995 – US expands sanctions to include companies doing business with Iran 1998-1999 Saudi Arabia-Venezuela oil dispute 2003-U S invaded Iraq 2006 UN imposes sanctions on Iran for its nuclear wapons program 2011-? U S withdrawal from Iraq? (Syria?) 2016-Nuclear sanctions on Iran lifted 2017-US expands sanctions . . .

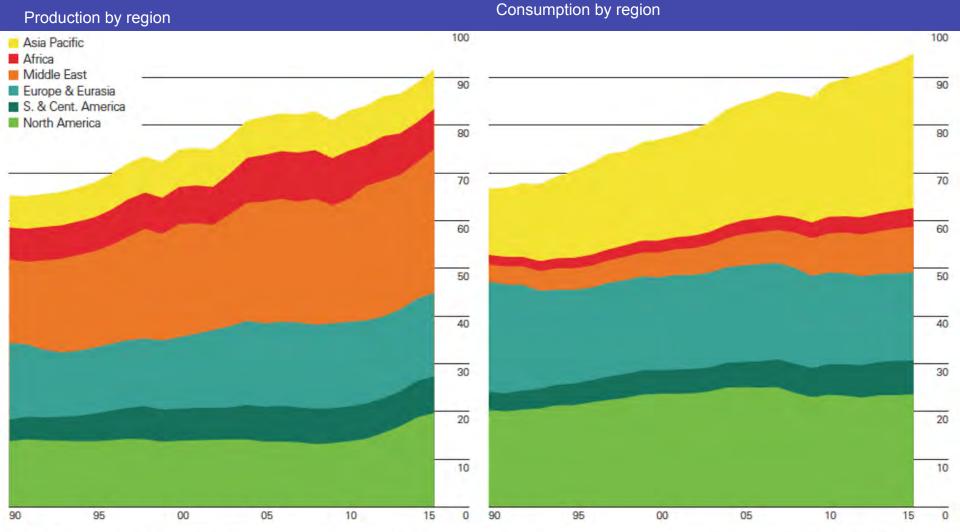
Distribution of proved oil reserves: 1994, 2004 and 2014 Percentage

Distribution of proved reserves in 1995, 2005 and 2015 Percentage



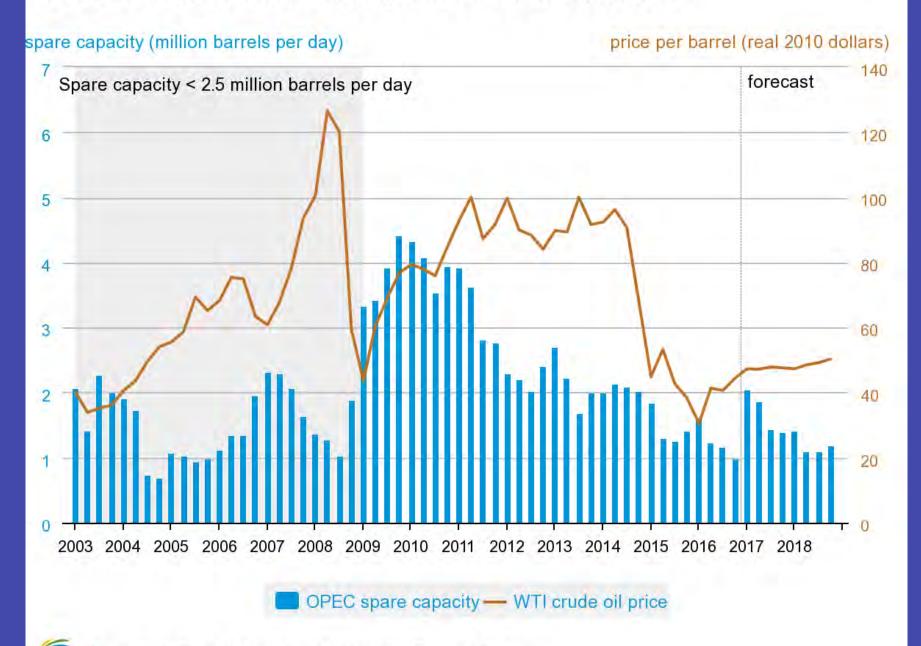
BP Statistical Review of World Energy 2015 © BP p.l.c. 2016

Oil production/consumption by region Million barrels daily



World oil production growth in 2015 significantly exceeded the growth in oil consumption for a second consecutive year. Production grew by 2.8 million b/d, led by increases in the Middle East (+1.5 million b/d) and North America (+0.9 million b/d). Global oil consumption increased by 1.9 million b/d, nearly double the 10-year average, with above-average growth driven by OECD countries. The Asia Pacific region accounted for 74% of global growth, with China once again contributing the largest national increment to global oil consumption growth (+770,000 b/d).

OPEC spare production capacity and WTI crude oil prices

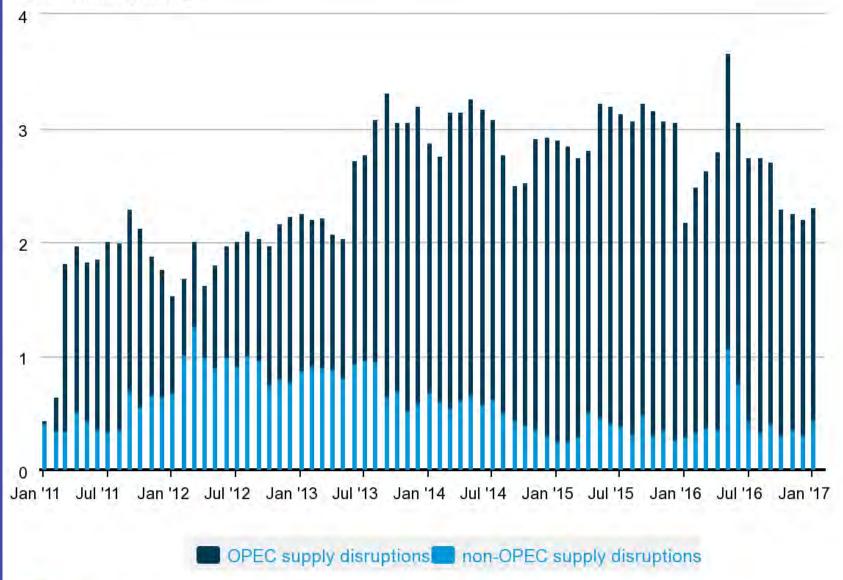


Source: U.S. Energy Information Administration, Thomson Reuters

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OPEC and non-OPEC supply disruptions





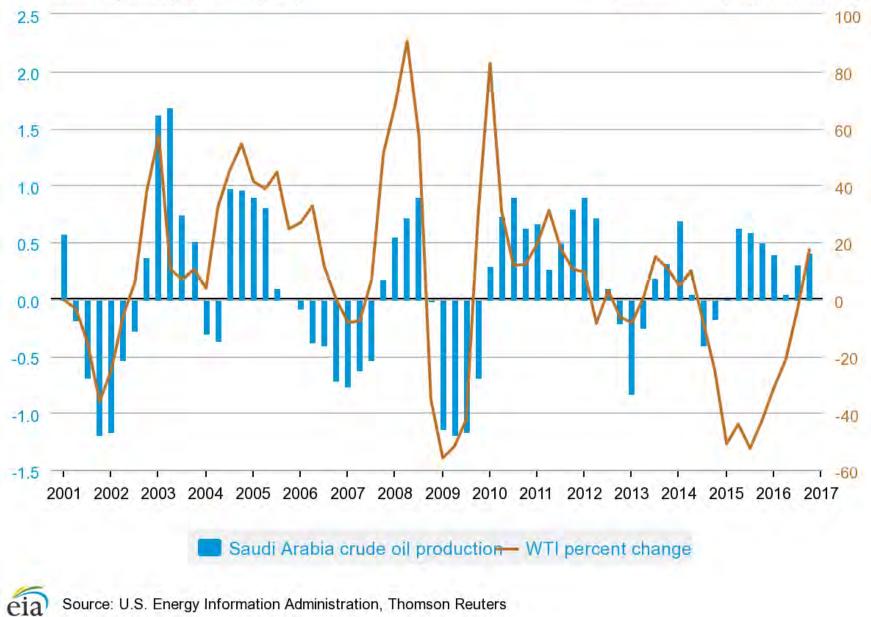
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Changes in Saudi Arabia crude oil production and WTI crude oil

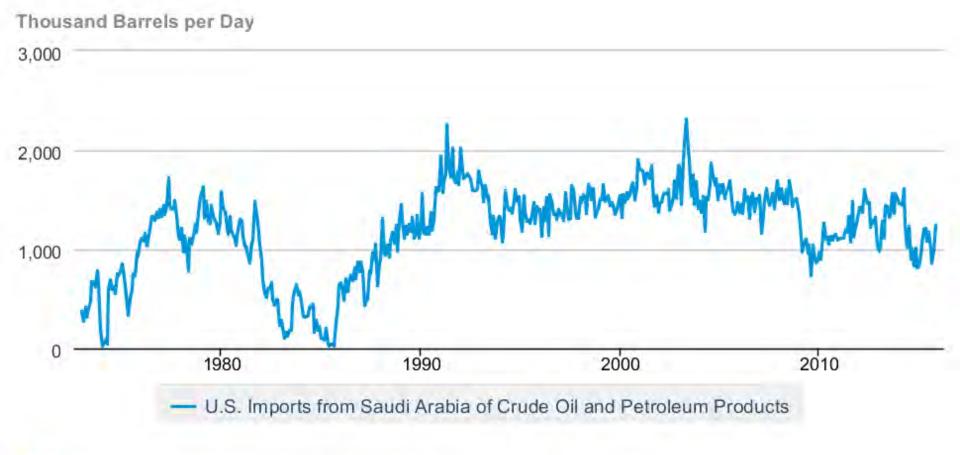
prices



percent change (year-on-year)



U.S. Imports from Saudi Arabia of Crude Oil and Petroleum Products





Source: U.S. Energy Information Administration

