



# The New World of Oil

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# What is the “New World of Oil”?

Modern age of the oil and gas industry:  
Post-Cold War/USSR collapse  
Russian Globalization

Existing production/undeveloped territory  
opened to global market

Western involvement and large scale  
collaborations



# What is the “New World of Oil”?

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- Rise of modern large oil companies
- The prototypical petro-state
- Events taking price of oil to historic levels
- War in the heart of oil country

# What is the “New World of Oil”?

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- Chapter 8: The Demand Shock- 8 slides
  - West Texas Intermediate, Cushing's, Ascent of oil prices, OPEC, NYMEX, BRICs, CaIPERs, MEND, Recession, Lehman Collapse
- Chapter 9 : China's Rise- 4 slides
  - PetroChina, IPOs, Daqing, Spirit of Daqing, Mao, WTO, INOCs
- Chapter 10: China in the Fast Lane- 7 slides
  - Rivalry, stakeholders, auto nation's, energy efficiency, foreign policy

# Russia Returns

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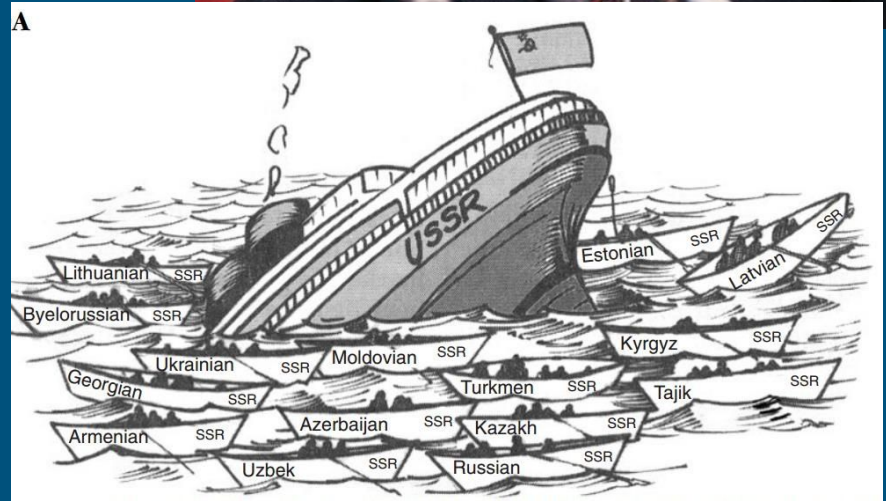
The new Russian Federation struggles to regain control of its economy following USSR collapse.

# Soviet Union is No More

Mikhail Gorbachev steps down Dec. 25, 1991  
USSR dissolved

15 new, independent states  
Largest is Russian Federation

Smaller states struggle for validity,  
maintaining independence



# A New Russian Order: “No One at the Controls”

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Communism vanishes from Russia

Centrally-planned economy suddenly without a central authority

New government struggles to provide basic necessities

Assets privatized “wildly, spontaneously, and often on a criminal basis.”

Much left over from Soviet system



# Reconstructing the Industry

Oil/gas reserves are critical to new economy

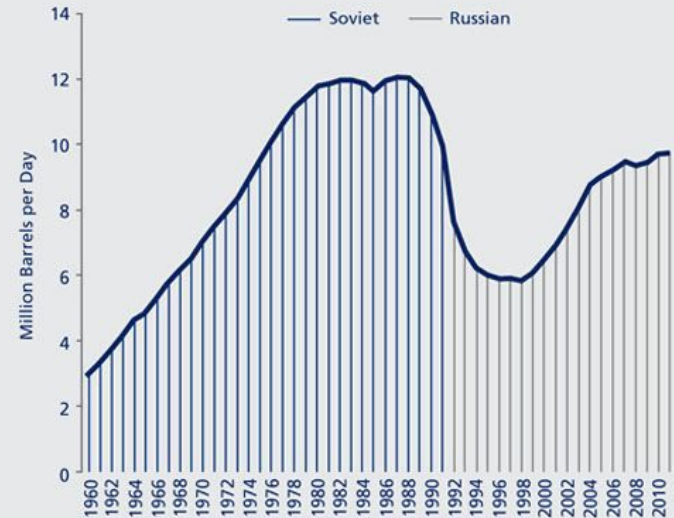
Then: Single horizontally organized, state-owned ministry

Now: Vertically integrated, privately owned companies

Problem: Power vacuum causes anarchy during transition

Russian gangs (*mafias*) taking over

Figure 1. Soviet/Russian Oil Production, 1960–2011



Source: U.S. Energy Information Administration, 2012, [http://www.eia.gov/countries/img/charts\\_png/RS\\_petttop\\_img.png](http://www.eia.gov/countries/img/charts_png/RS_petttop_img.png)



# Privatization: Decree 1403

LUKOIL

Law created 3 vertically integrated oil companies:  
Lukoil, Yukos, Surgut



Transition period:

- Ownership temporarily with state under Rosneft
- Companies to assert/capture control over production

“Loans-for-shares” - sale of the century



# Opening Up: Western Partnerships

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Russian resistance - resented their technology being substandard

Vladimir Putin writes: “entry of Russia into the world economy” ... Russia “a great economic power”

Conoco/Lukoil, Arctic

Exxon/Shell, Sakhalin

TNK-BP 50/50, West Siberia

# The Caspian Derby

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Nation-states must navigate a complicated web of interests and ambitions of greater powers while establishing legitimacy and maintaining newfound independence.

# The Players

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Russia

United States

Britain

Turkey

Iran

China

New nations themselves - Have not been self governed for many decades, used to be khanates, etc.



# “The Oil Kingdom”: Baku, Azerbaijan

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Long history, dates back to the early years of oil

Neglected by Soviets, lacked modern technology

Azerbaijan plagued by political instability,  
conflict with Armenia

Heydar Aliyev - “The Native Son”

“Deal of the Century”



# Early Oil? “Offend No One”

North through Russian territory?

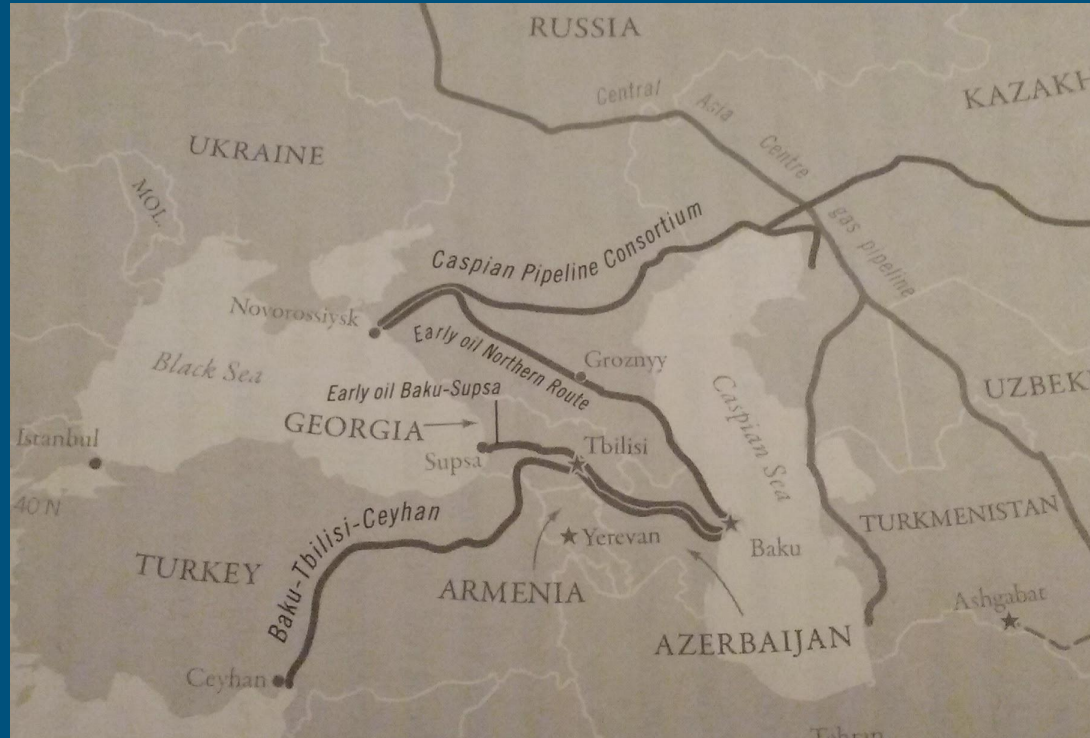
OR

West through unstable Georgia?

OR... Both?

What about the main pipeline?

- Bosporus Strait is a no-go
- Dealing with Iran is a no-go
- BTC - massive engineering challenges



# Across the Caspian

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Across the sea: more complicated logistical challenges, negotiations, and geopolitical turmoil.

# Kazakhstan, Tengiz, and More Pipeline Politics

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Nazarbayev: Kazakhstan will never again be “an appendage”

The easy part: Partnership with Chevron to develop Tengiz field

The hard part: Getting the slippery stuff to market

John Deuss/Oman; Lukoil/ARCO/Mobil negotiating the CPC



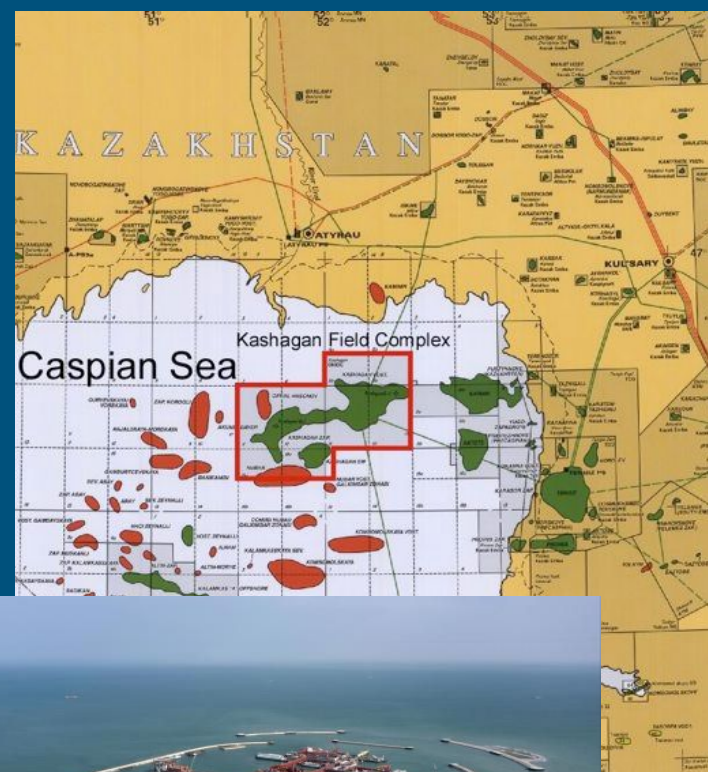


# Kashagan, and... China?

Kashagan: largest oil field discovered since 1968

Despite engineering setbacks, extremely promising future production

China purchased Kazakh oil company Aktobe Munaigas, wants pipeline



# Turkmenistan's Gas

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Was distributed in Russia via existing pipelines until demand died out

Unocal: TAP/CAOP would move oil/gas from Central Asia to markets in Pakistan/India - "peace pipeline"

Must transit Afghanistan - very politically unstable

- No Afghan government to negotiate with -

- Taliban vs. Northern Alliance

- Some really bad PR

"Once we understood who the Taliban were, and how radical, this project didn't look so good."





# “Supermajors”

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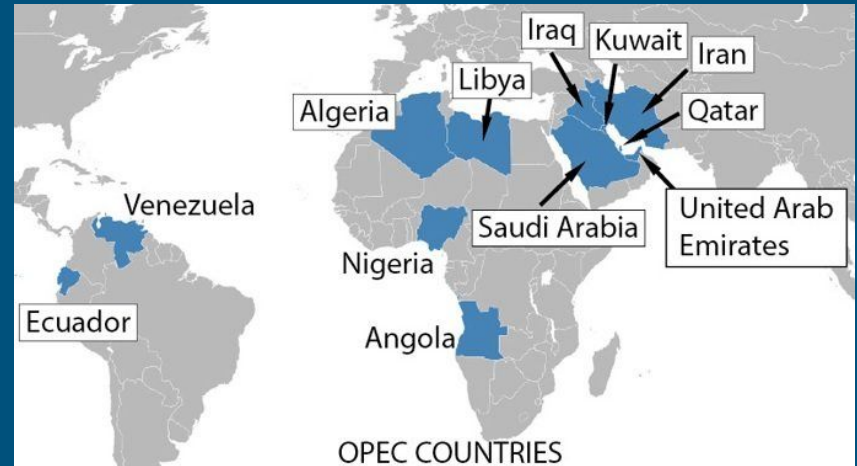
Rise of large oil conglomerates.



# OPEC

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- Nov. 1977, raise production by 2 million barrels / day based on strong growth in Asia in early 1990s
- Global financial collapse
- Never increase production on weakening demand
- Overproduction flooded market - price of oil collapsed



# Price of Oil

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# Standard Oil

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- 1860s - Rockefeller begins consolidating American oil companies
- Launched modern oil industry - first integrated oil company
- Controlled 90% American oil - richest man in America
- 1911 - ordered to be broken into 34 companies
- Become model for the current day "supermajors"



# The Rise of Supermajors

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- Companies not big enough - take over or get taken over
- Achieve economies of scale - lower average costs
- Take on larger projects and risks

# BP & John Browne

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- Target Mobil for merger
  - No premium to shareholders - deal falls apart
- Next target - Amoco
  - August 1998 - largest merger in history (\$48 billion)
- ARCO calls Browne
  - Wants BP to buy ARCO out
  - Deal reached April 1999 (\$26.8 billion)
  - ARCO hit hard by drop in oil - would have recovered if held up a couple weeks





# Exxon and Mobil

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- Taboo broken against large mergers - greater risk not to merge
- Exxon's CEO Lee Raymond reaches out to Mobil's Lou Noto
- Negotiations ramp up in response to BP-Amoco merger
- Deal reached Nov. 1998
  - Exxon 80%, Mobil 20%, 20% premium on Mobil shareholders
- Federal Trade Commission Reaction
  - BP-Amoco minor divestiture requirements
  - BP later divests in ARCO's Alaskan North Slope assets
  - Exxon-Mobil divest 2,431 gas stations and 1 oil refinery
  - 12-13% market share - below 15% limit

# Other Merger Dominoes

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- France: Total and Elf
  - Government control to fully privatized
  - Each company bid to buyout the other
  - Total takes over Belgian Petrofina followed by Elf in September 1999
- Chevron and Texaco
  - Mutual agreement for merger
  - Finalized in October 2000
- Conoco and Phillips
  - Merged November 2001 - “compete against biggest oil companies”
  - Phillips grabs North Slope assets - aids merger discussions



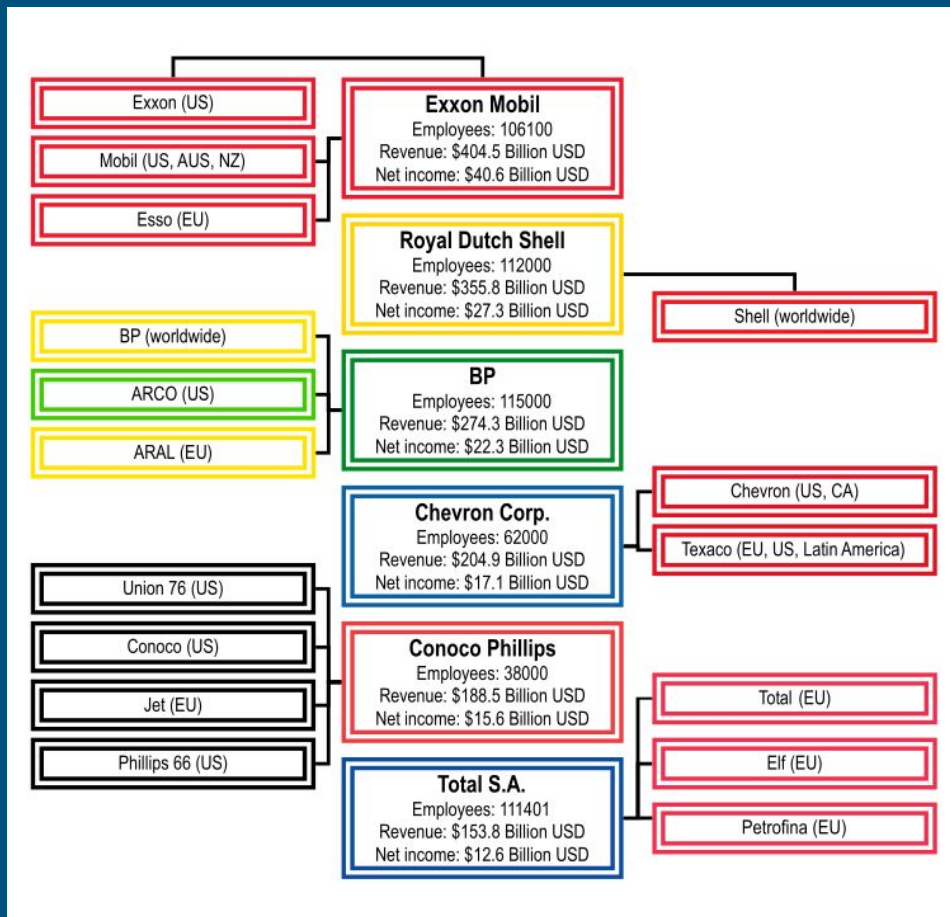
# Royal Dutch Shell: Riding Solo

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- Largest oil company prior to the mergers
- No company CEO
  - Company run by two separate boards
  - Difficult to orchestrate a merger with this structure



# The “Supermajors”





# The Petro-State



# Venezuela As Prototypical Petro-State

- Discovery of oil in 1920s
- Transition from agricultural economy to oil economy
- Over 70% of economy by 1980s-1990s
- Country rich because of resource, not its people
- Economy of petro-state fluctuates with price of oil



# Carlos Andres Perez

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- President at height of 1970s oil boom
- 1976 - government takeover of oil industry
  - Petroleos de Venezuela, S.A.
- Price of oil falls in 1980s
  - Venezuelan economy falls with it
- Perez re-elected in 1989
  - Realized trap of oil economy
  - Reforms to reduce dependency on oil



# Rise of Hugo Chavez

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- Venezuelan military leader
  - Lead Caracas coup against President Perez
  - Political unrest caused by Perez's oil reforms
- Coup failed - Chavez arrested
  - Transformed into national celebrity





# Caldera and La Apertura

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- 1992: Perez impeached on counts of corruption
- Successor Rafael Caldera
  - Freed Chavez and reinstated him into political life
- La Apertura - “the opening”
  - Open Venezuela to foreign investments to partner with the PDVSA
  - Needed investment for increased production and technologies
  - Pushed by new PDVSA president, Luis Giusti
  - Disregarded OPEC production limits - produced at nation’s max output

# Chavez in Charge

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- Wins 1998 election
  - Campaigned against the La Apertura platform
- Taken under Castro's wing
  - Provides Cuba cheap oil after fall of USSR
- Chavez becomes strong advocate of OPEC production limit
  - Wants to cut production and observe quotas
- Price of oil rebounds
  - Asia market recovers, OPEC back in driver's seat





# Aggregate Disruption

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The rising price of oil.



# September 11th, 2001

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- Revealed dark underside to globalization
  - Cheaper travel/communication - easier to undermine globalization
- Created rift between US and Saudi Arabia
  - Did not close until attack on Saudi Arabia in 2003 - gave common enemy
- 9/11 did not change price of oil directly
  - Disrupted security/international affairs - altered thinking on oil



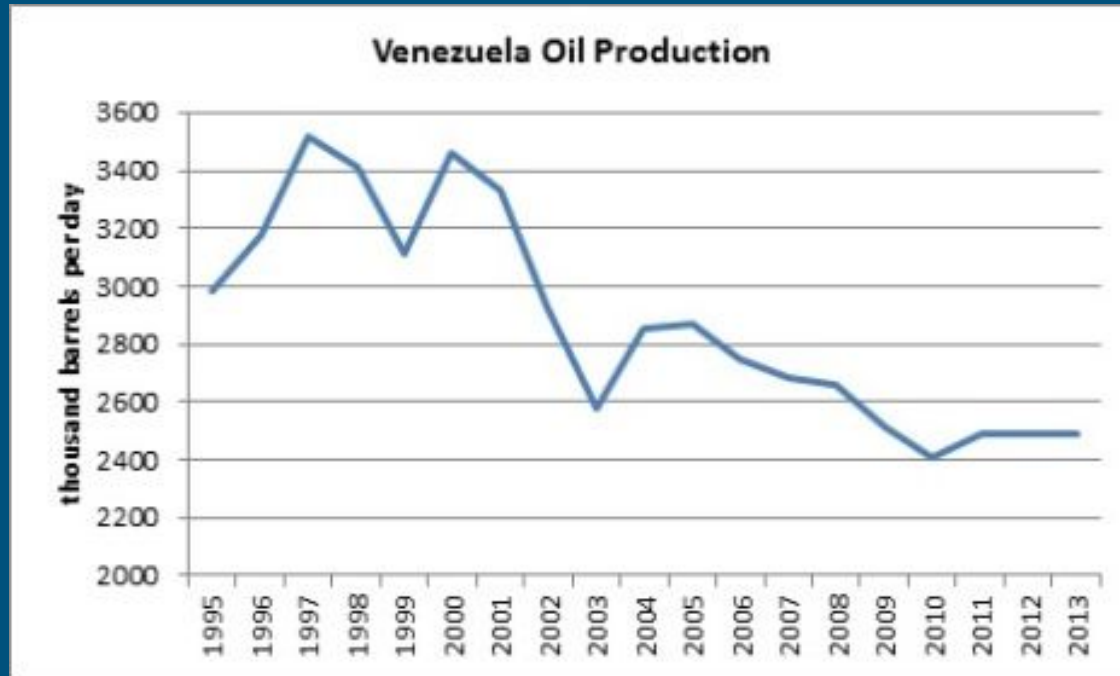
# Back to Chavez

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- Re-elected in 2000
  - Expanded power in government and control over PDVSA
  - Created domestic unrest
- Chavez forced to “resign” and exiled
  - Lasts three days - opposition can't seize power and Chavez back as president
- Venezuelan oil production plummets
  - 3.1 million to 200,000 per day
  - Chavez out waits PDVSA strike
  - Fires 20,000 workers (half of workforce) - replaced with inexperienced workers
  - Cannot regain pre-strike output levels

# Venezuelan Oil Production

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# Conflict in Nigeria

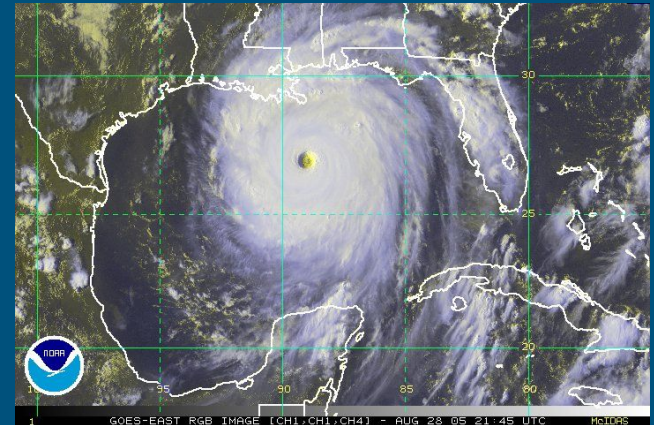
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- Divided by ethnicities and religion - 250 ethnic groups
- Power struggle throughout nation over oil supply
- Political unrest under dictator General Sani Abacha and following election
  - Local politicians promote violence to seize oil for campaign funding
- Heavy corruption from politicians and militias stealing oil
  - Up to 10% production - \$5 billion in 2010 dollars
- Movement for the Emancipation of the Niger Delta (MEND) - 2006
  - Raids on oil platforms - steal oil / kill workers
  - Destroy government's ability to export oil
- Price effect in US - Nigeria third largest source of import oil

# Natural Disasters

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- Hurricanes Katrina & Rita - August/September 2005
  - Direct hit on US's largest energy complex in Gulf of Mexico
  - Region held 30% oil & 20% natural gas domestic production
  - 3,000 platforms & 22,000 miles of pipeline in path of these storms
  - Knocked out 29% oil production and 30% refining capacity
  - Gas shortages across southeast and mid-atlantic
  - Disruption of 1.5 million barrels a day at peak
  - Oil prices surge





# Price of Oil

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# War in Iraq

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War in the heart of oil country.



# The Build-up

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- Iraq - oil country / “petro - state”
- Why fight?
  - Saddam Hussein, believed WMD's, links to Al Qaeda, emplace a democracy
- Oil industry must operate during war
- Iraq under dictatorship for 35 years
  - Must break down institutions before setting up democracy
  - Not an easy task
- Oil industry - only export
  - 75% GDP before war, 95% government revenue afterward



# The Aftermath

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- Oil industry - dilapidated
  - Lack of investment, not updated since 1950s
  - Lack of security - workers don't want to show up
  - Looting and breakdown of infrastructure - hard to restart oil industry postwar
- De-Baathification
  - Postwar Iraq in disarray / rising unemployment (60%) - breeding ground for Al Qaeda
- Civil war - Sunni & Shia
  - War against the occupation
- Post invasion production at best  $\frac{2}{3}$  capacity
  - Not reach pre-war production until 2009
  - Constant terror attacks disrupt Iraqi oil market



# Changes in the Oil Industry

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How world demand for oil and additional players in the industry changed the market forever

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# The Demand Shock

History of US Oil consumption + distribution,  
impact on the rest of the world

# The Demand Shock: West Texas Intermediate

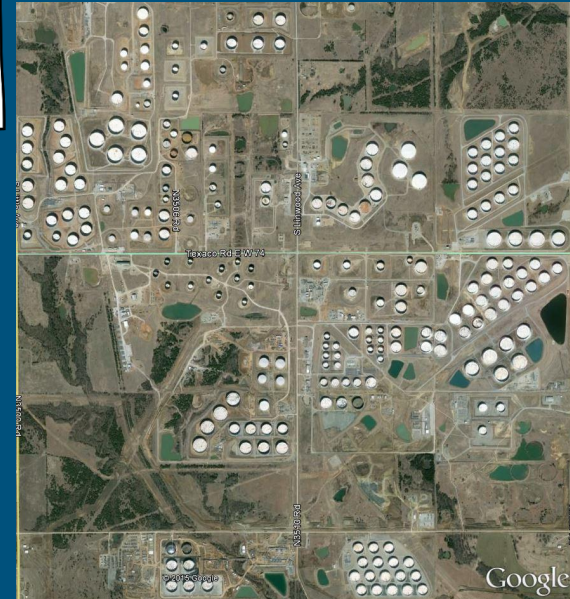
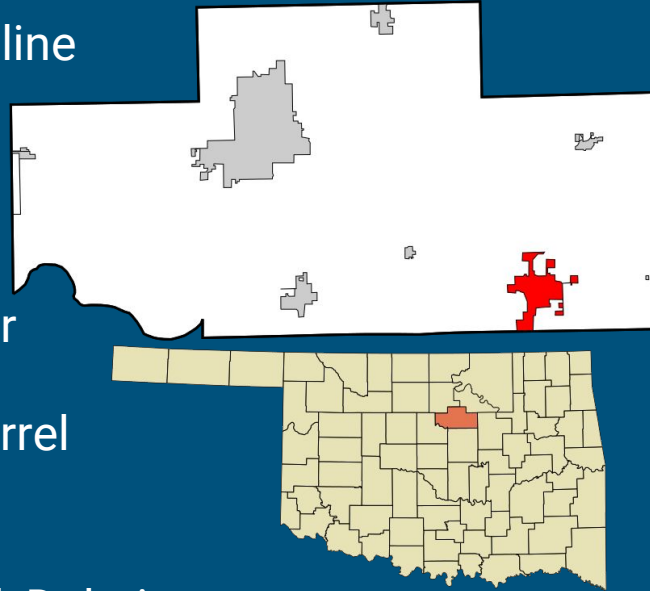
Cushing, Oklahoma, 2003: Pipeline  
Crossroads of the World

Oil boom began in 1912

Developed into a refining center

WTI as benchmark for other barrel  
prices- “domestic sweet”

Other benchmarks: Brent Blend, Dubai  
Crude



# The Demand Shock: Cushing's Unique Role

Pipe network brings in oil from states

Crude → gasoline, jet fuel, diesel, heating oil

After production dropped, became a key petroleum pipeline junction





# The Demand Shock: Globalization of Demand

Ascent of oil prices beginning in 2004

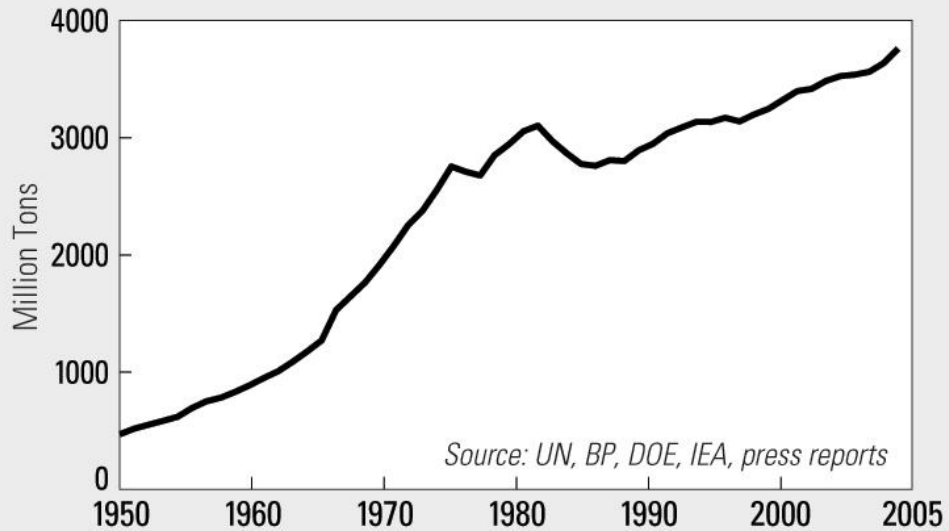
Globalization of Demand

Total world petroleum consumption grows

Split between developed and developing world

New demand shock powered by strong global economic performance

**World Oil Consumption, 1950–2004**



# The Demand Shock: OPEC Meeting

February 2004, Algiers, Algeria

Production cut, yet prices rose steadily

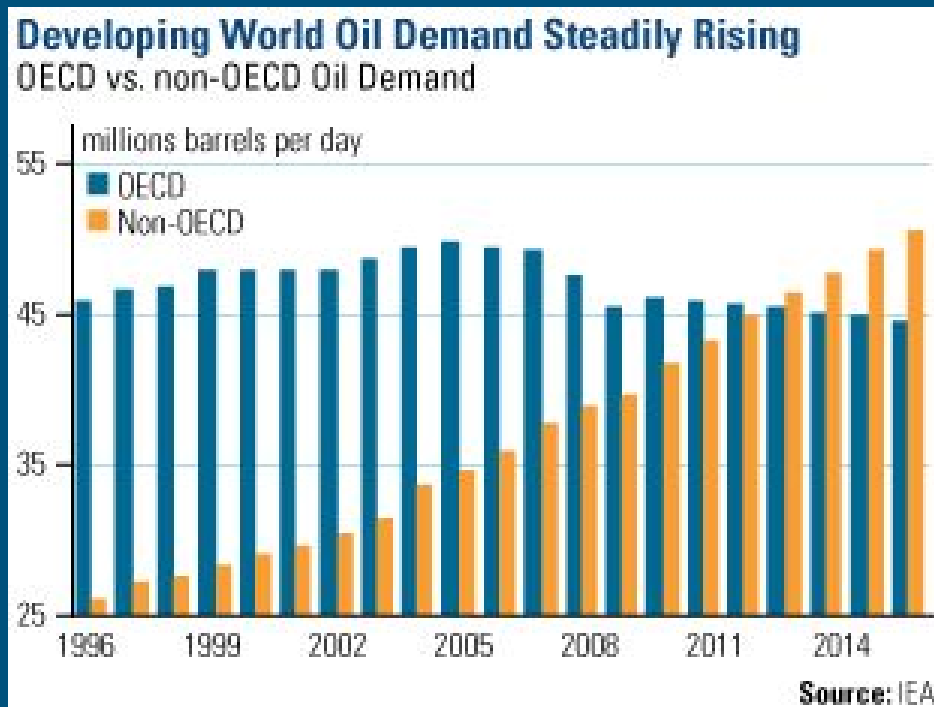
Oil as an alternative to coal

Strong global growth → higher oil demand

Boom anticipated- tight market

Spare capacity shrinks

Reinforcing of price trend



# The Demand Shock: Aftermath of Price

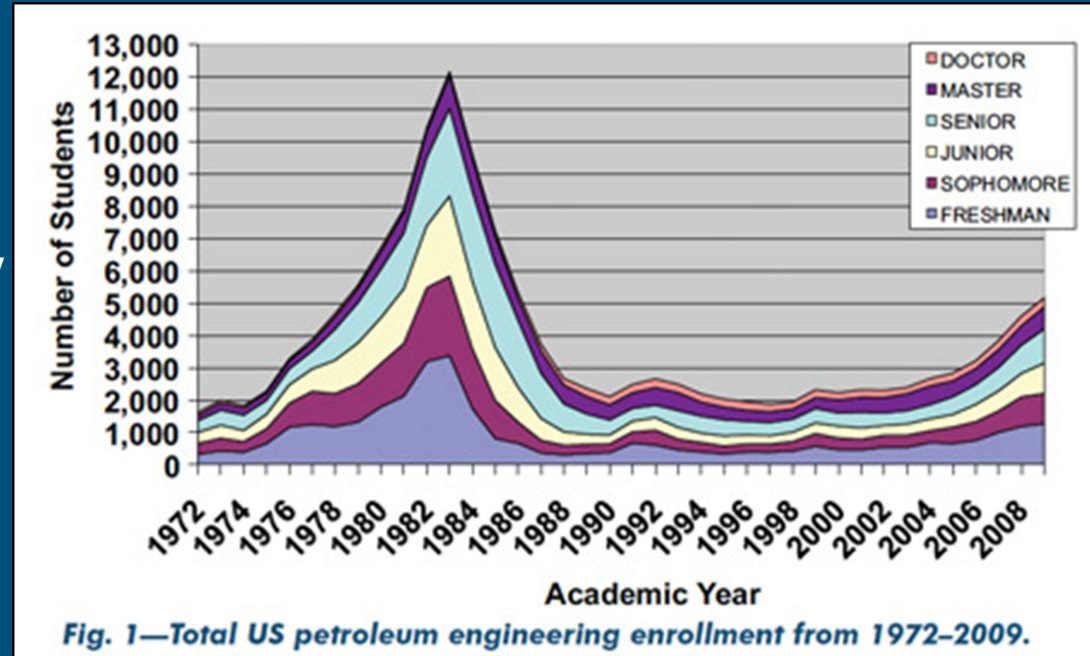
“Take out cost and reduce capacity”

Bull market for commodities

Financialization: co-move negatively  
with the U.S dollar exchange rate

Government control

Worldwide impact



# The Demand Shock: NYMEX

Commodities and future trading

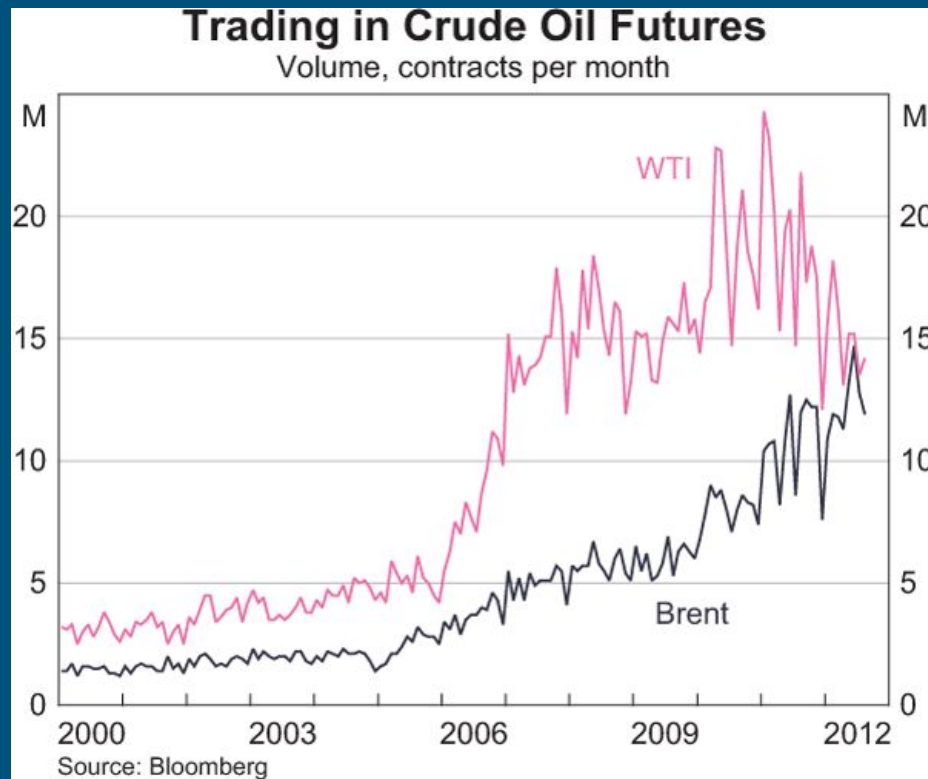
Risk-management tool for oil futures

The BRICs: Brazil, Russia, India, China

More people in the oil market

Importance of floor traders declined

Rise of a new belief system



# The Demand Shock: Split of the Oil World

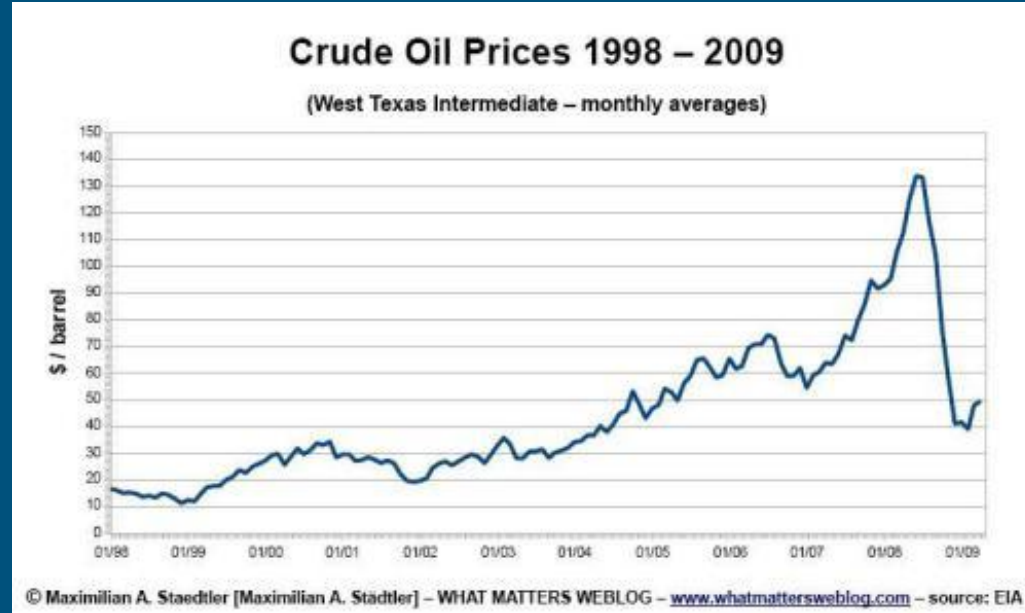
Does price matter?

CalPERS- deems commodities part of a distinct asset class

\$3 barrier broken in February 2008

Break point: energy users and oil company spending

“Addiction to oil” and the auto industry



# The Demand Shock: The Great Recession

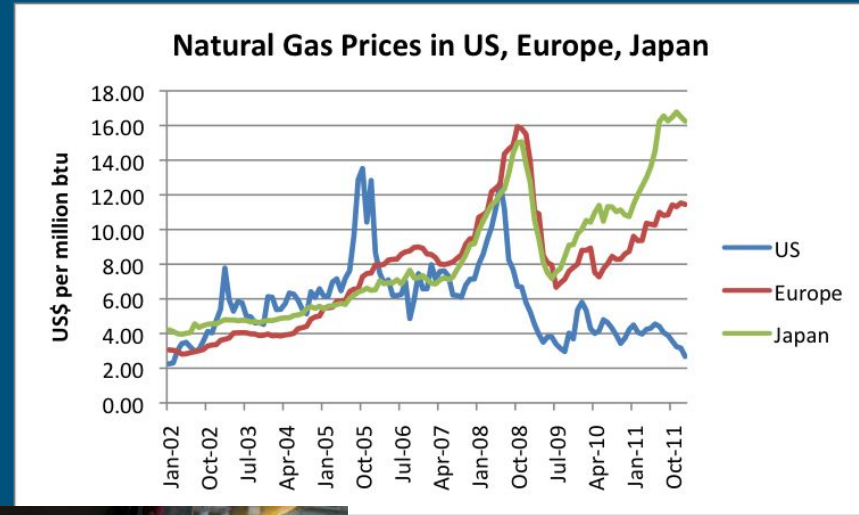
Surge in oil prices contributed to downturn

Felt in other developed countries

Income: consumer countries  
-->producer countries

July 11, 2008: peak reached

September 2008:  
Lehman collapse



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# China's Rise

From small supplier to one of the oil  
industry's top players

# China's Rise: Beginnings + Risk

Dream of a competitive economy

Prospects for IPOs

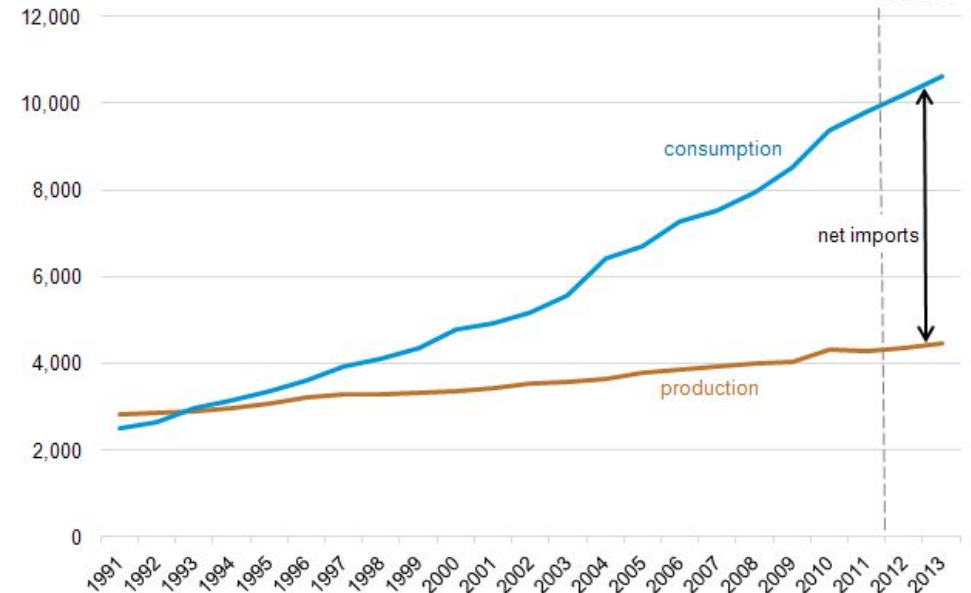
PetroChina launched in April 2000

Changes China's oil position in the world of oil

Growth and anxiety over assuring self-sufficient energy supply

China's oil production and consumption, 1990-2013

thousand barrels per day



Source: U.S. Energy Information Administration *International Energy Statistics and Short-Term Energy Outlook (August 2012)*



# China's Rise: Daqing, The Great Celebration

Discovery of new oil field in Manchuria

Guiding principles: self-sufficiency and determination

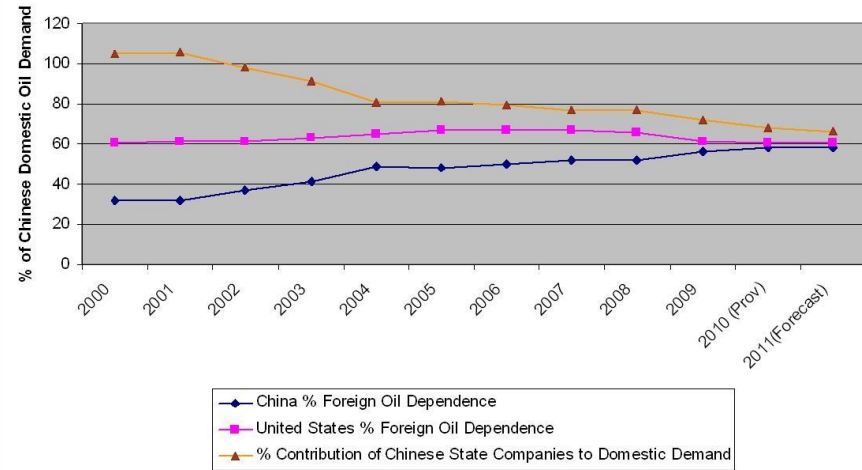
The Great Leap Forward + turmoil

Opening the Bamboo Curtain

Move towards integration with the global economy, end of self-sufficiency



China's Self-Sufficiency Falling Fast



# China's Rise: Controversy over Exit

2005: Chevron and CNOOC (Chinese National Offshore Oil Corporation)

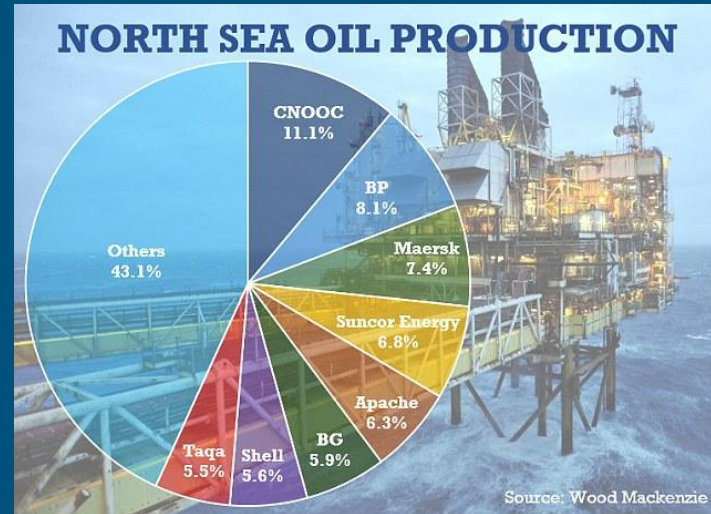
Acquiring Unocal- \$17.3b bid

2012: \$25b deal for Nexen

Chinese oil companies are hybrids:  
International oil companies (IOCs) and  
State-owned national oil companies  
(NOCs) = INOCs



**PetroChina**



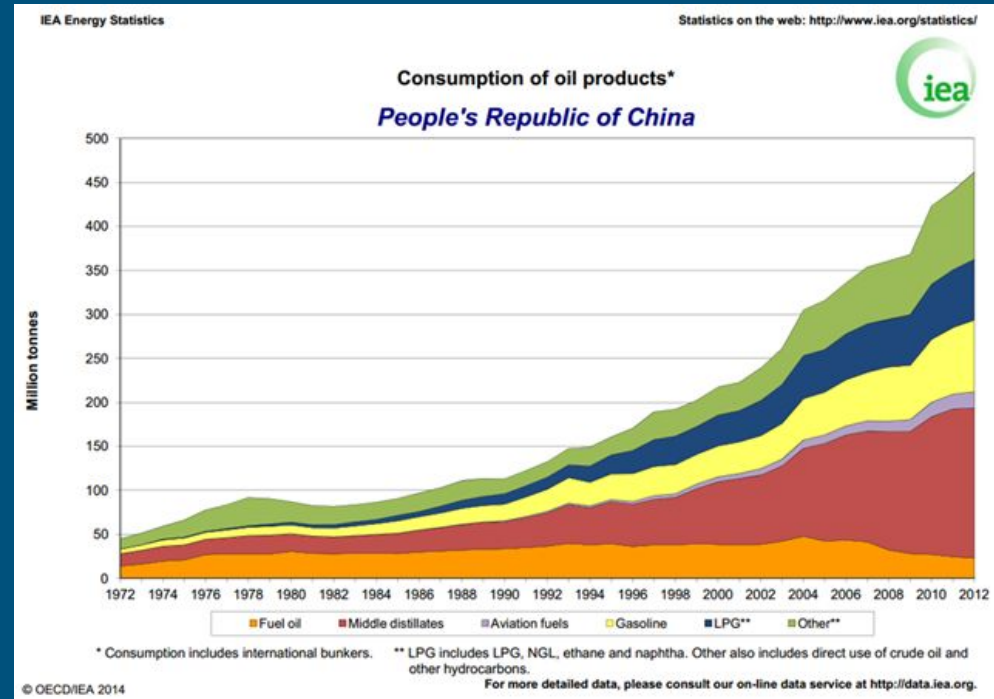
# China's Rise: Growth Still to Come

Sharing the stage: American, European, Middle Eastern, Russian, Asian, and Latin-American companies- often in partnerships

Entire overseas production less than just one of supermajor companies

Growing demand → more pressure → higher prices

Increasingly important player in the oil industry



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# China in the Fast Lane

Increasing domestic consumption,  
relationship with the US, and growing  
environmental concerns

# China in the Fast Lane: Energy Security

Late 1990s: increasing reliance on imports, prices rise

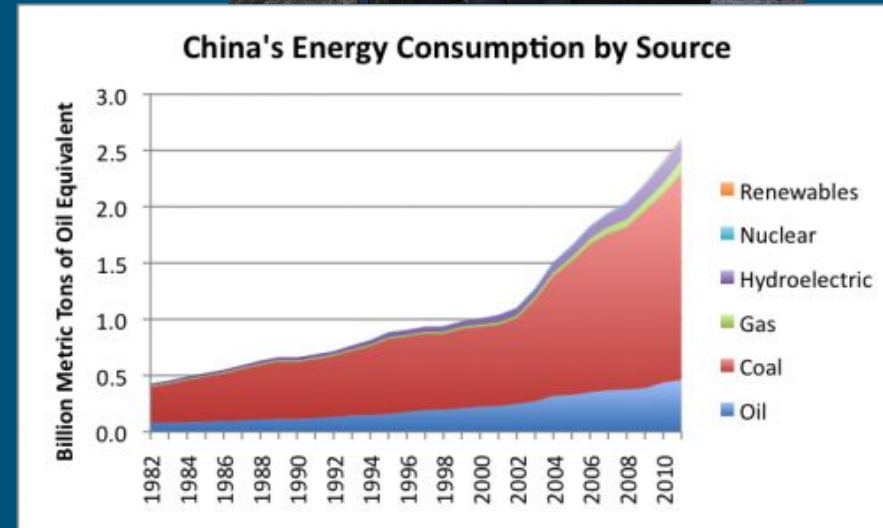
Dependency on the global market climbs

Late 2002: energy problem evident

Coal: 70% total energy, 80% electricity

Tight supplies of coal turned into shortages

2004: oil demand grew 2x fast as predicted



# China in the Fast Lane: Petro-Rivalry

US excessive influence vs. China's grand strategy

2002: China + ASEAN countries sign agreement to settle claims

Anxiety over energy security ceases

2006: G8 meeting: shift to collaboration deemed key

China 80% self-sufficient in overall energy

Bush administration: "Energy and environment cooperation framework"



# China in the Fast Lane: Automobile Growth

China transitions to mass automobile economy

Oil 40% of total energy in the US vs 20% in China

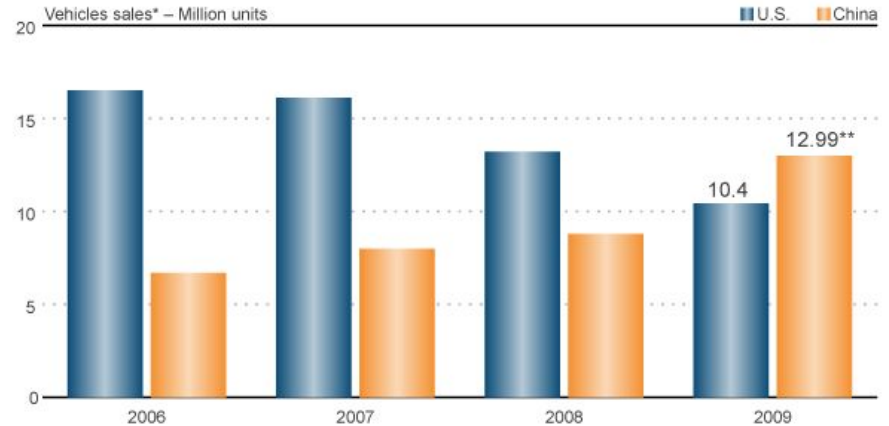
Previously: no room in the new industrial system, now: joint ventures emerge

2009: China overtakes the US as world's largest automobile market

Projected sales increase for the future is steady

## Auto sales - China vs U.S.

China overtook the U.S. as the world's largest auto market in 2009



Note: \*U.S. figures include cars and light trucks, China official figures also include heavy trucks.  
12.99\*\* = 13.64 mln (China auto sales in 2009, source: CAAM) - 0.65 mln (heavy truck sales, estimate by Orient Securities)

Sources: Official data, Orient Securities, Xinhua, Reuters calculations

Reuters graphics/Stephen Cole, China Daily

# China in the Fast Lane: Rapid Expansion

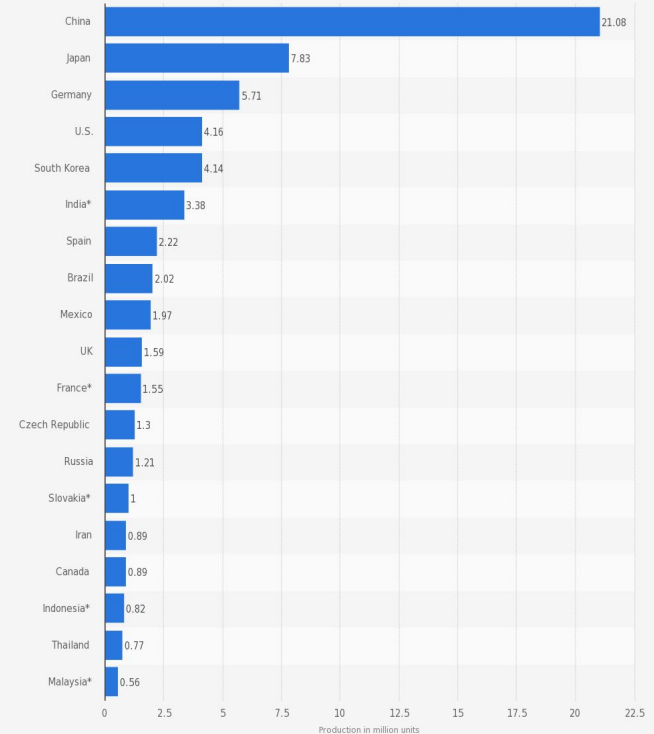
Producing automobiles for developing countries

Added jobs and stimulated domestic consumption

Quality of life a concern: traffic, delays, pollution



Passenger car production in selected countries in 2015, by country (in million units)



Source:  
OICA  
© Statista 2016

Additional information:  
Worldwide



# China in the Fast Lane: Price of Success

Poverty → economic growth + expanding opportunities

Environmental Price: water, air pollution, drop in energy efficiency

Emissions a factor in reshaping energy policy



# China in the Fast Lane: Challenges



**STATE GRID**  
CORPORATION OF CHINA

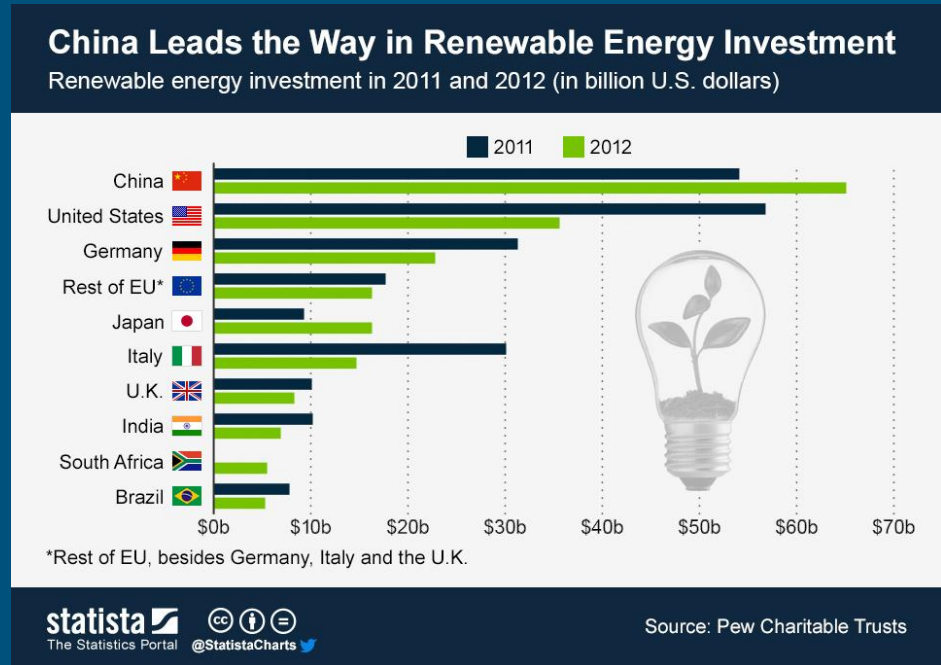
Balance economy and environment

Generation capacity now exceeds US

Renewable usage is growing

Promote efficiency: State Grid, largest utility in the world

2011: Five Year Plan: emphasis on emerging-energy policy



# China in the Fast Lane: Overlap of Interests

Minor part of global industry → most rapidly changing element in global oil market

Uncertainty for China + other major importers

Common ground between China and US: global network of trade and growth, shared interests

China + US = 35% of world petroleum consumption

Share interest in growing renewables



Country	2014 (billion \$)	Country	2004 - 2014 (billion \$)	Installed Capacity (megawatts)
China	\$89.491	US	\$447.642	121,660
US	\$51.770	China	\$427.617	224,788
Japan	\$41.342	Germany	\$244.949	86,946
Germany	\$15.299	Japan	\$189.188	32,679
UK	\$15.229	Italy	\$103.436	8,774

Source: Bloomberg New Energy Finance, Globaldata, BBC  
<http://www.bbc.com/news/business-31689722>