

# **ABOUT OIL & IMPLICATIONS FOR ENERGY INVESTING**

AAll Silicon Valley

June 13, 2015

William Jump, AAll Si Valley Chapter Board

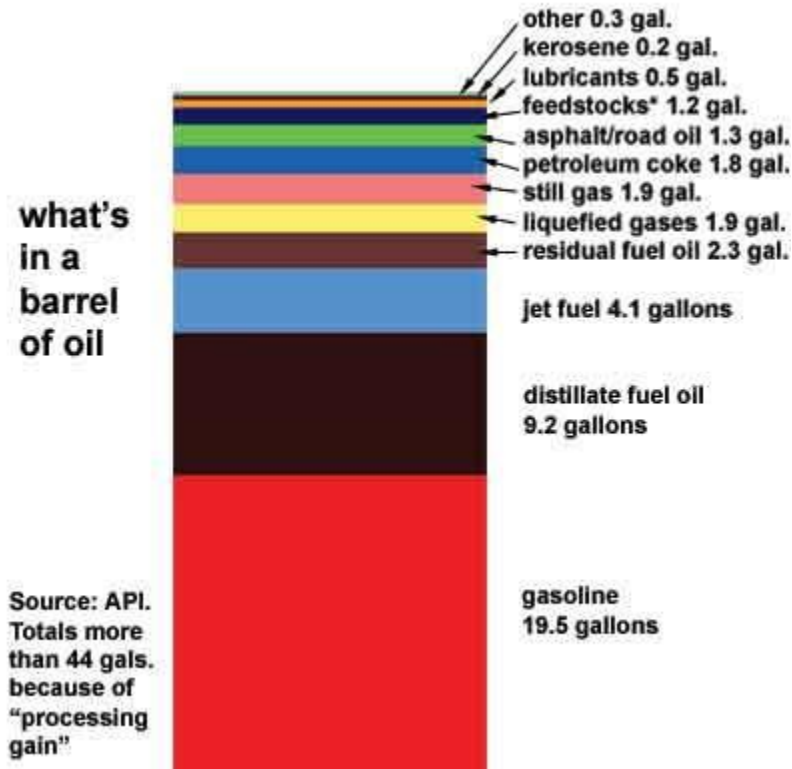
wljump@charter.net

# **OIL: Agenda/Outline**

- **Crude Oil**
- **Benchmarks**
- **What happened with oil last year?**
- **OPEC & Price History**
- **Consumption**
- **Producers & Reserves**
- **Price Impact**
- **Questions @ P 26 -----**
- **Technology, focus on Fracking**
- **Impacts of Price Movement- GDP**
- **Price Factors**
- **Supply/Demand**
- **Storage**
- **Questions @ P 56 -----**
- **Investing Vehicles**
- **Winners, Losers, Risks, Hedging**
- **Sentiment**
- **Where are Oil prices headed?**
- **Summary**

# Oil: Crude/Petroleum

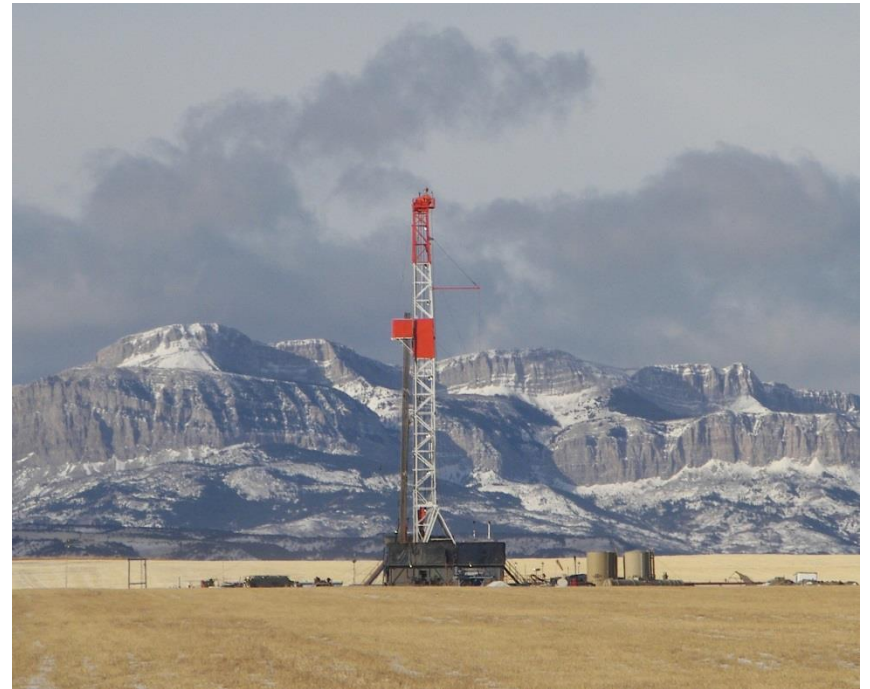
- **Typical Crude Oil Content**



- **Crude Oil has pervasive use in the economies of the world**
- **The big Kahuna is Transportation**
- **Many other industrial uses**

# Oil: Oil Core Sample and Rig Site in Montana

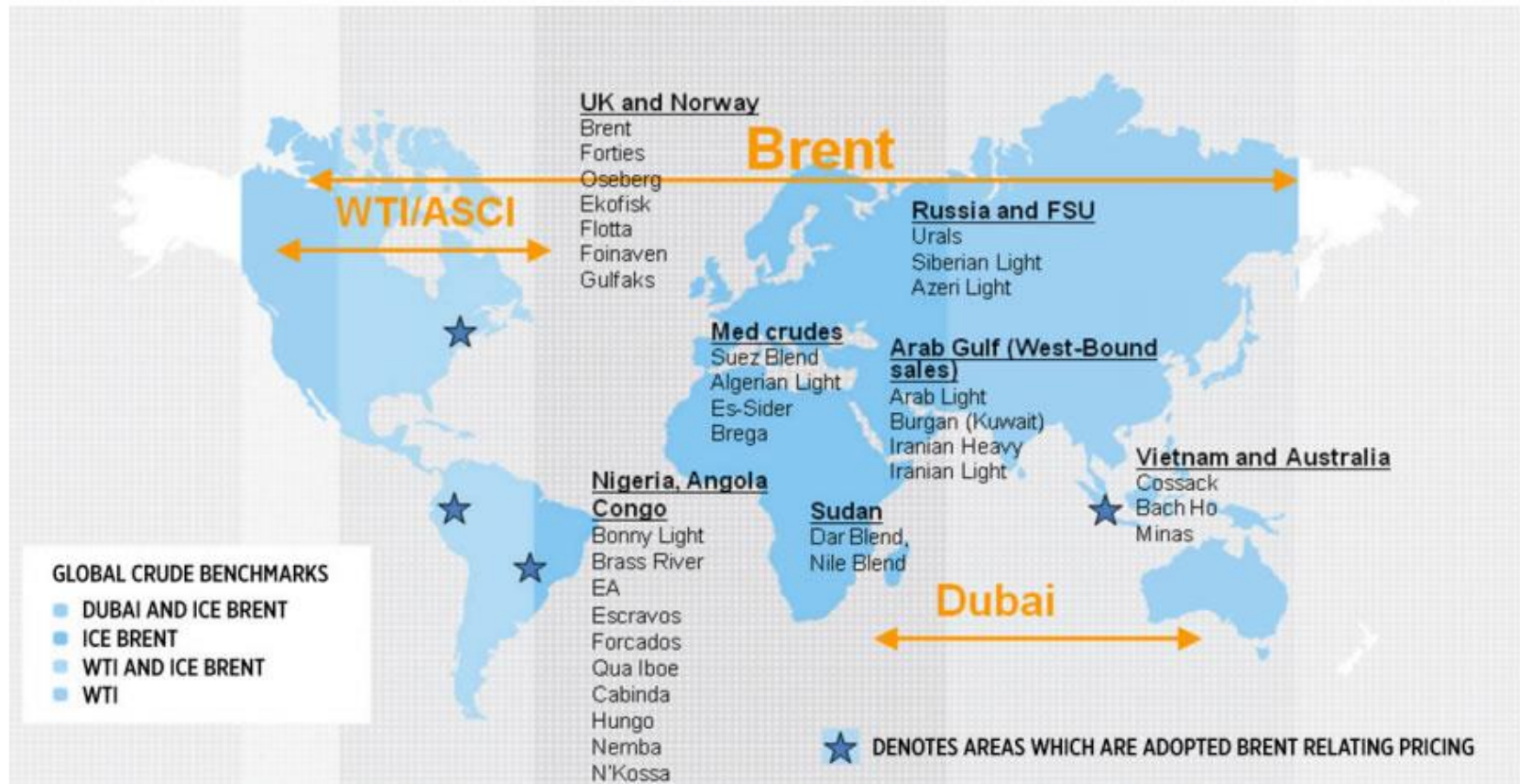
*Source: a former IBM associate that has had oil/gas leases, the rig can drill vertical & horizontal- 16K ft*



# Oil: WW Oil Benchmarks

< 3 key benchmarks: WTI, Brent, Dubai >

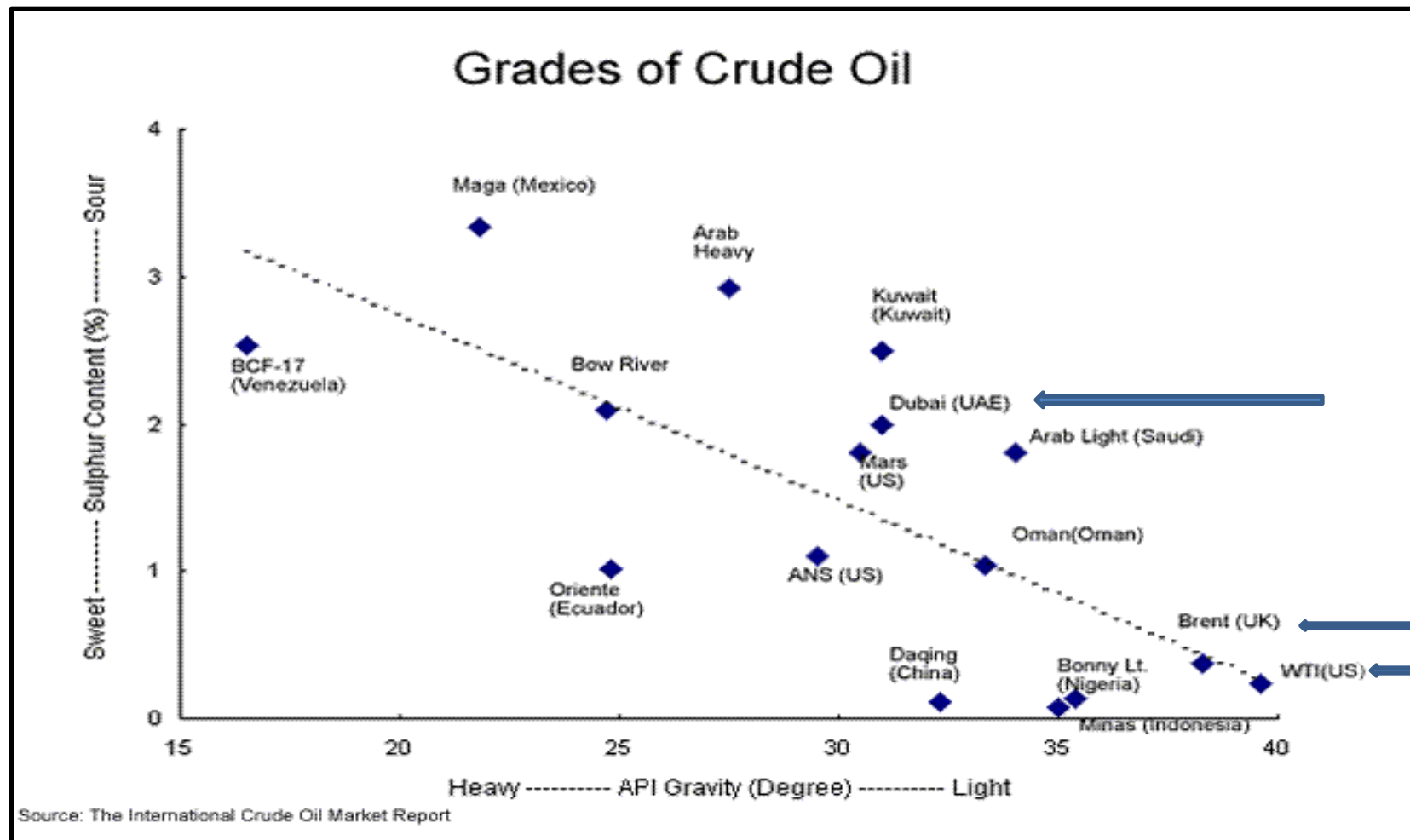
FIGURE 3: CRUDE OIL PRICING WORLDWIDE



# Oil: Grades of WW Crude- 3 Key Benchmarks

<Brent, WTI, Dubai>

Light has low sulfur content, Heavy has more sulfur content



# Oil: What Happened With Oil Prices Last year?

- US Shale Production Ramped to Where The SAUDIS Took Action, not with an EMBARGO but the opposite by increasing production, driving prices down. Note Brent spot price piercing the 200 day SMA last July. Ditto for WTI



# OIL:OPEC Position on Production 1/15/15 Per UAE >>

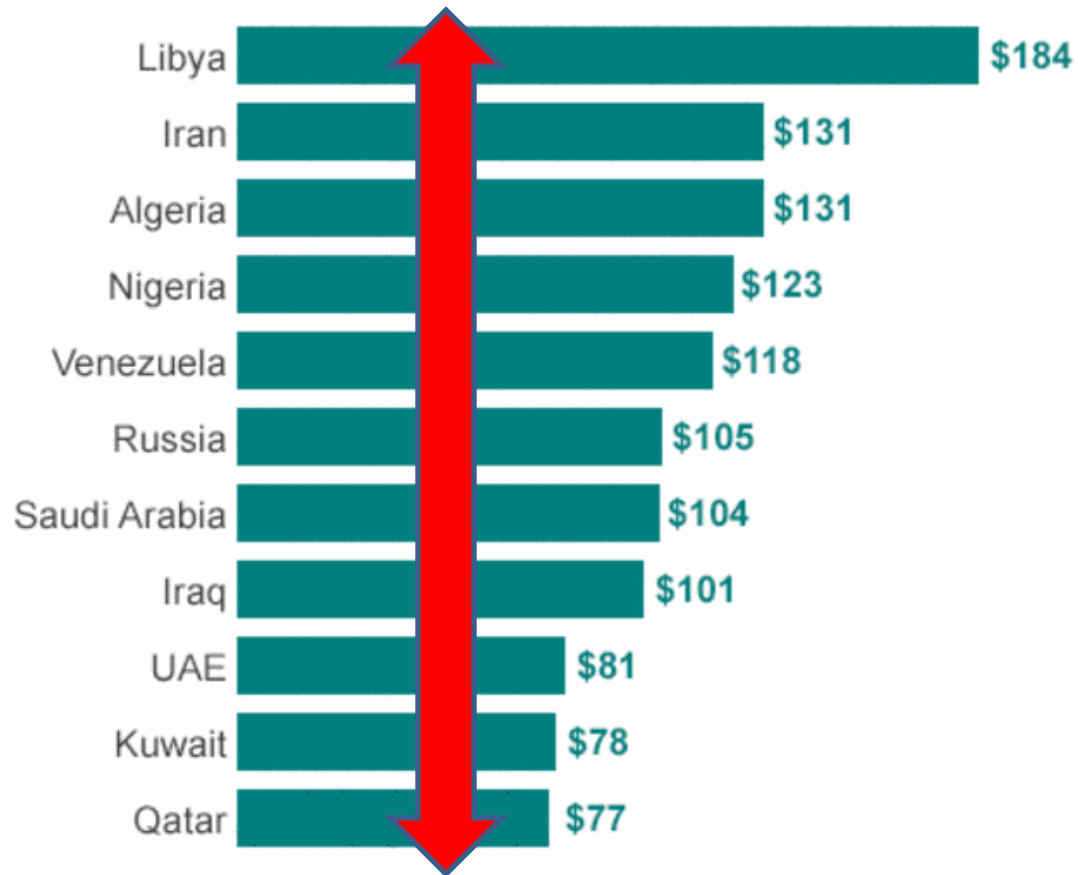
<http://www.livetradingnews.com/dubai-says-opec-powerless-oil-price-91844.htm#.VW07dc9Viko>

- “OPEC cannot protect world oil prices which have plunged since June, the United Arab Emirates said on Tuesday, adding that rising North American shale oil output needed to be curbed.
- World prices have been falling since June but the pace of the slide accelerated in November when the Organisation of the Petroleum Exporting Countries (OPEC) decided to keep its production unchanged at 30 million barrels per day.
- *Analysts say that richer OPEC members like the [UAE](#) have been ready to accept the price fall in the hope that it will force higher-cost shale producers out of the market.*
- “We cannot continue to be protecting a certain price,” [UAE](#) Energy Minister Suhail al-Mazrouei said.
- *“We have seen the oversupply, coming primarily from shale oil, and that needed to be corrected,” he told participants in the [Gulf Intelligence](#) [UAE](#) Energy Forum in [Abu Dhabi](#).*
- Oil prices continued their slide towards six-year lows in Asian [trade](#) on Tuesday after Brent crude closed below 50 a barrel the previous day for the first time since April 2009.
- The fall came after Wall Street investment titan Goldman Sachs slashed its price outlook, adding to anxiety about global oversupply, weak demand and soft growth in the key Chinese and European [markets](#).”

# OIL: Our 'Friends' Need for Higher Price on Oil

< But we have oil in a trading range \$55-65 now >

Oil price needed to balance budgets

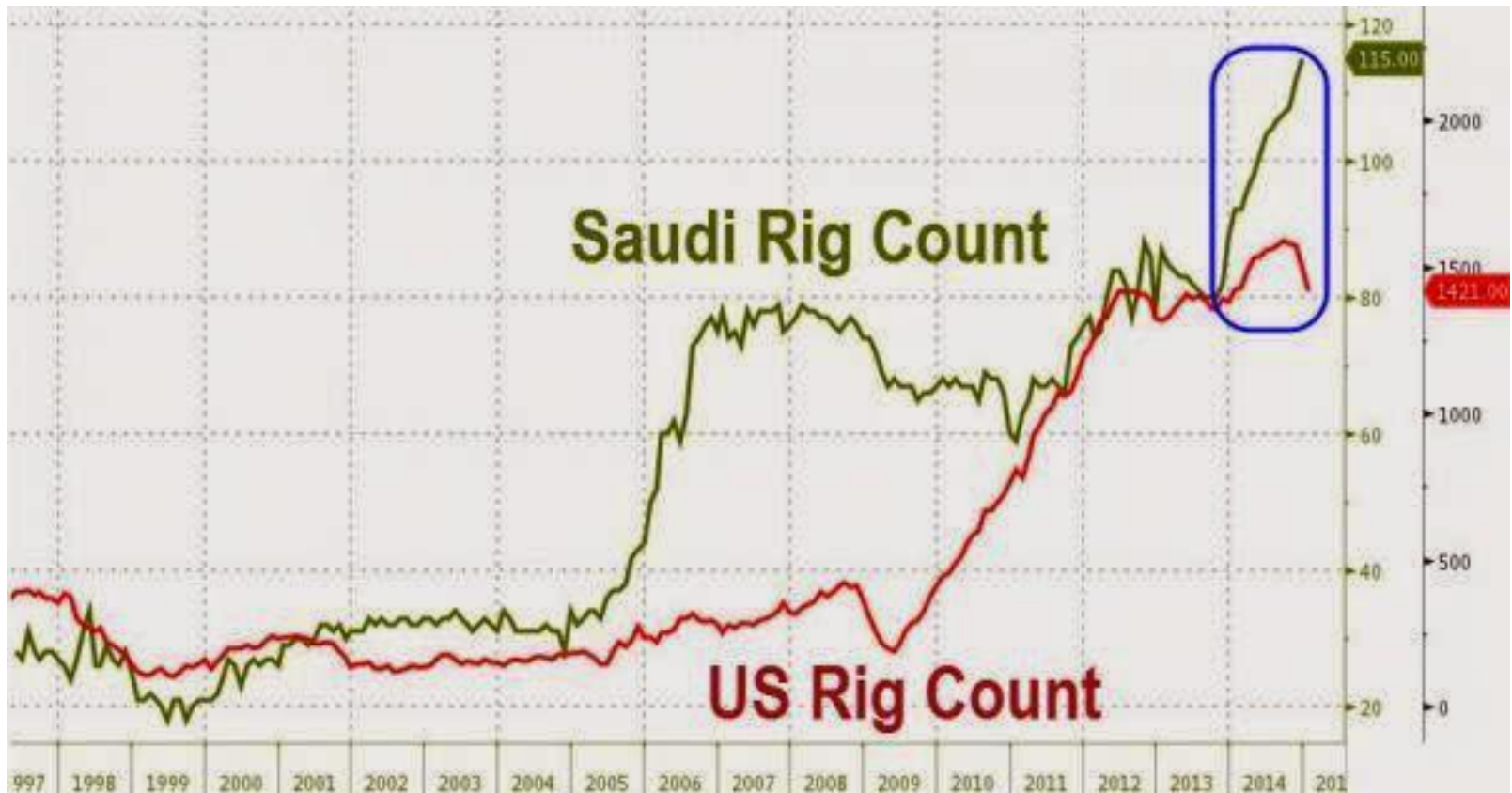


Source: Deutsche Bank and IMF

# OIL: And the Saudis have been Pumping

<The Saudis are attacking US Shale to preserve long term share>

This impacts other OPEC members- expect CHEATING



# OIL: OPEC Meeting Statements- June 5

[http://www.opec.org/opec\\_web/en/311.htm](http://www.opec.org/opec_web/en/311.htm)

[http://www.opec.org/opec\\_web/en/press\\_room/3046.htm](http://www.opec.org/opec_web/en/press_room/3046.htm)

- **Published Agenda >**
- **Tentative Programme**
  - 10.00 hrs. Opening Session ..
  - 12.00 hrs. **Closed Session** of the 167th Meeting of the Conference Attendance: OPEC Heads of Delegation and the Secretary General Venue: OPEC Secretariat
  - 16.00 hrs. Press Conference
  - **( At 30 M bpd OPEC Production)**
- **Excerpts of the Meeting Output**
  - In the current year, GDP growth is projected at 3.3%, with this expected to be at a slightly higher level of 3.5% for 2016.
  - sharp decline in oil prices witnessed at the end of last year and the start of this year – caused by oversupply and speculation – had now abated, with prices moving slightly higher in recent months.
  - world oil demand is forecast to increase in the second half of 2015 and in 2016, with growth driven by non-OECD countries. **On the supply side, non-OPEC growth in 2015 is expected to be just below 700,000 barrels per day, which is only around one-third of the growth witnessed in 2014.**

the Conference resolved to **maintain the 30 mb/d ceiling and urged Member Countries to adhere to it.** Member Countries, in agreeing to this decision, confirmed their commitment to a stable and balanced oil market, with prices at levels that are suitable for both producers and consumers
- **(Maintain 30 M bpd OPEC Production)**

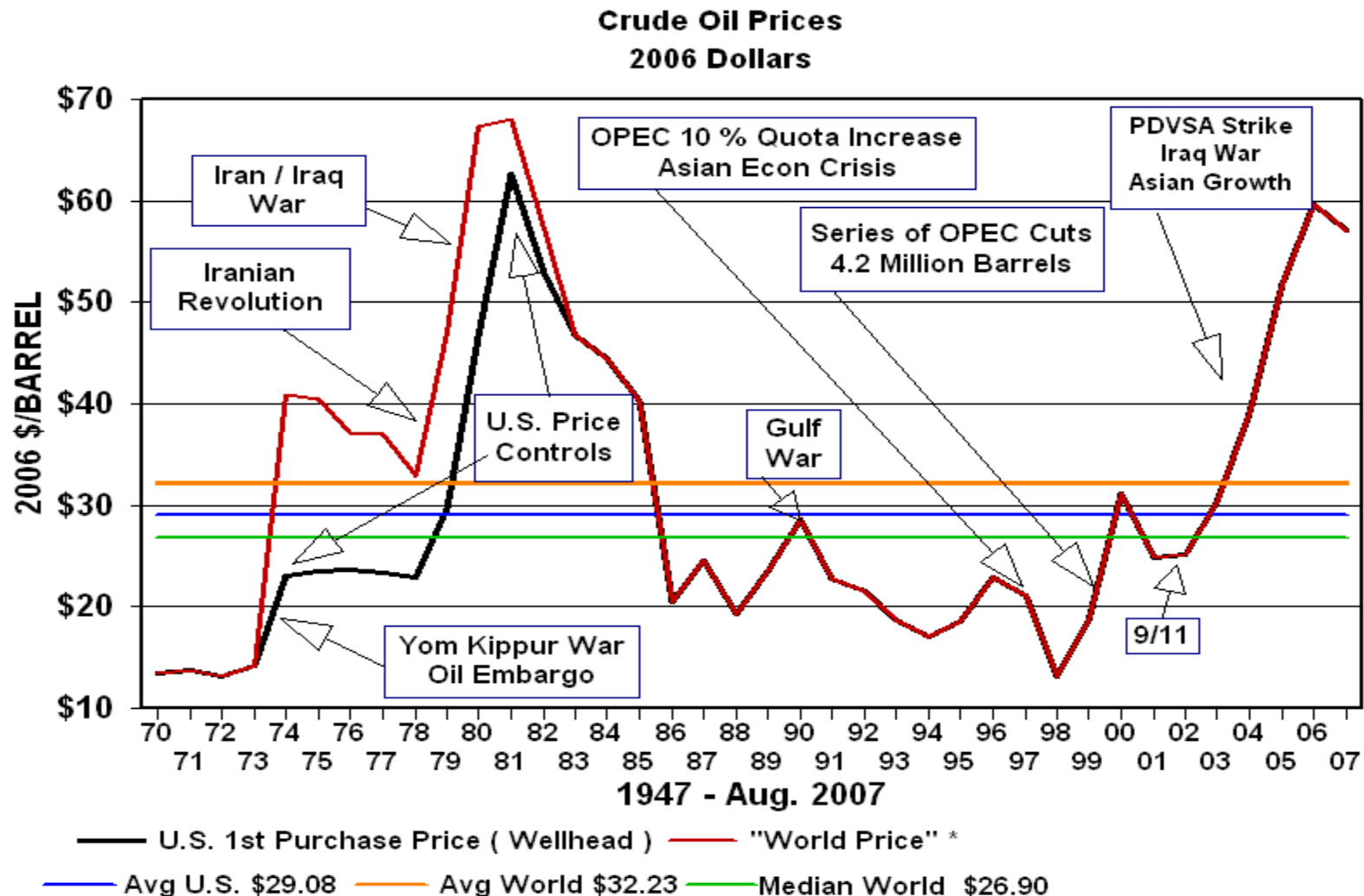
# OIL: Bull & Bear Since 2000

## EXHIBIT 1. THIS IS OUR 9TH CRUDE OIL BEAR MARKET SINCE 2000

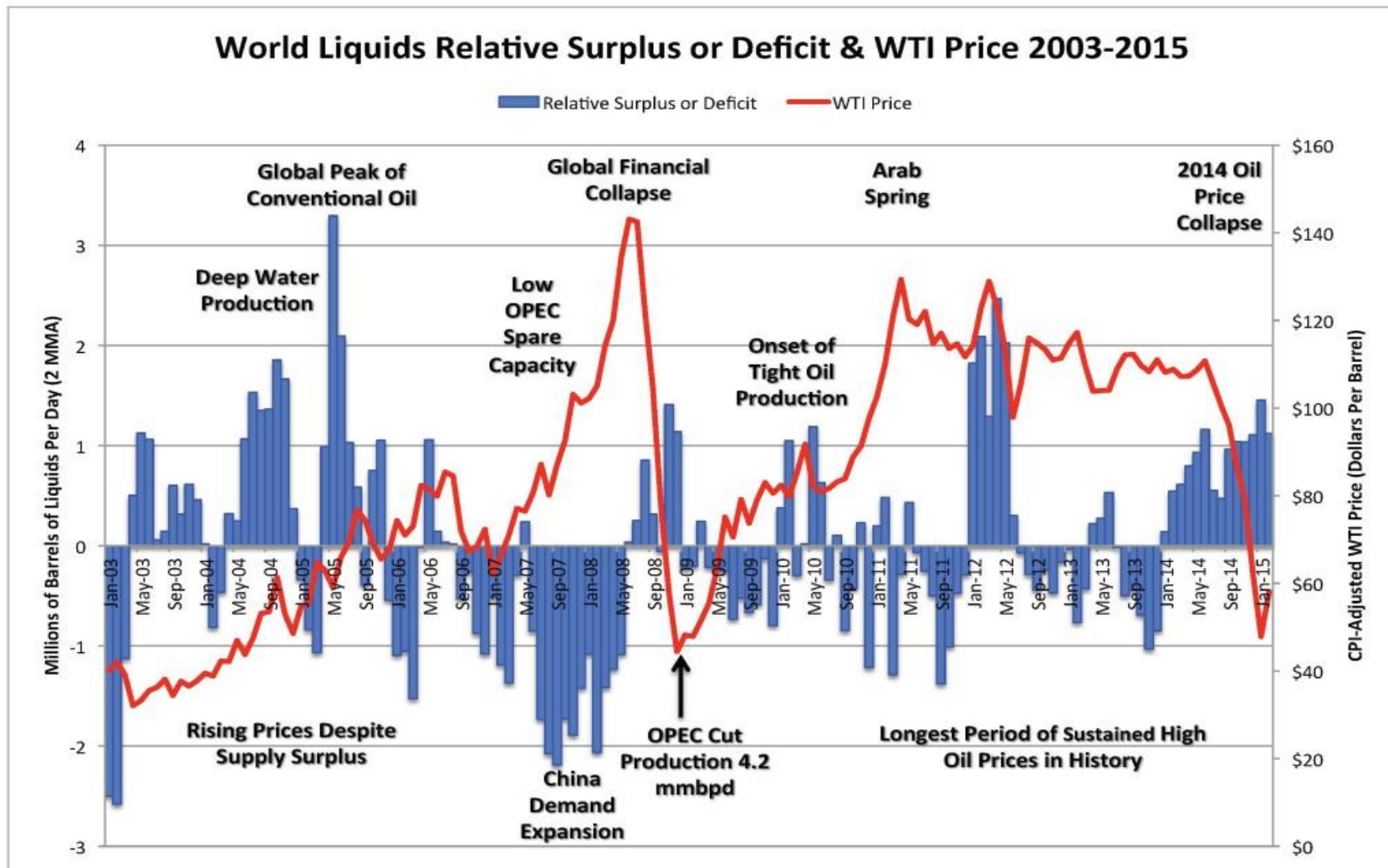
SOURCE: BESPOKE INVESTMENT GROUP

Oil Bull and Bear Markets Since 2000						
Bull/Bear	Start Date	End Date	Days	Start Price	End Price	% Chg
Bear	3/7/2000	4/10/2000	34	34.13	23.85	-30.12%
Bull	4/10/2000	9/20/2000	163	23.85	37.20	55.97%
Bear	9/20/2000	12/20/2000	91	37.20	25.77	-30.73%
Bull	12/20/2000	1/19/2001	30	25.77	32.19	24.91%
Bear	1/19/2001	11/15/2001	300	32.19	17.45	-45.79%
Bull	11/15/2001	3/12/2003	482	17.45	37.83	116.79%
Bear	3/12/2003	4/29/2003	48	37.83	25.24	-33.28%
Bull	4/29/2003	10/22/2004	542	25.24	55.17	118.58%
Bear	10/22/2004	12/10/2004	49	55.17	40.71	-26.21%
Bull	12/10/2004	7/14/2006	581	40.71	77.03	89.22%
Bear	7/14/2006	1/18/2007	188	77.03	50.48	-34.47%
Bull	1/18/2007	7/3/2008	532	50.48	145.29	187.82%
Bear	7/3/2008	9/16/2008	75	145.29	91.15	-37.26%
Bull	9/16/2008	9/22/2008	6	91.15	120.92	32.66%
Bear	9/22/2008	12/19/2008	88	120.92	33.87	-71.99%
Bull	12/19/2008	1/6/2009	17	33.87	49.00	44.67%
Average Bull			109	Average Bull 89.42%		
Average Bear			334	Average Bear -38.73%		

# OIL: Back to the 70's- Oil is Volatile



# Oil: More WTI Price History (2003-2015)



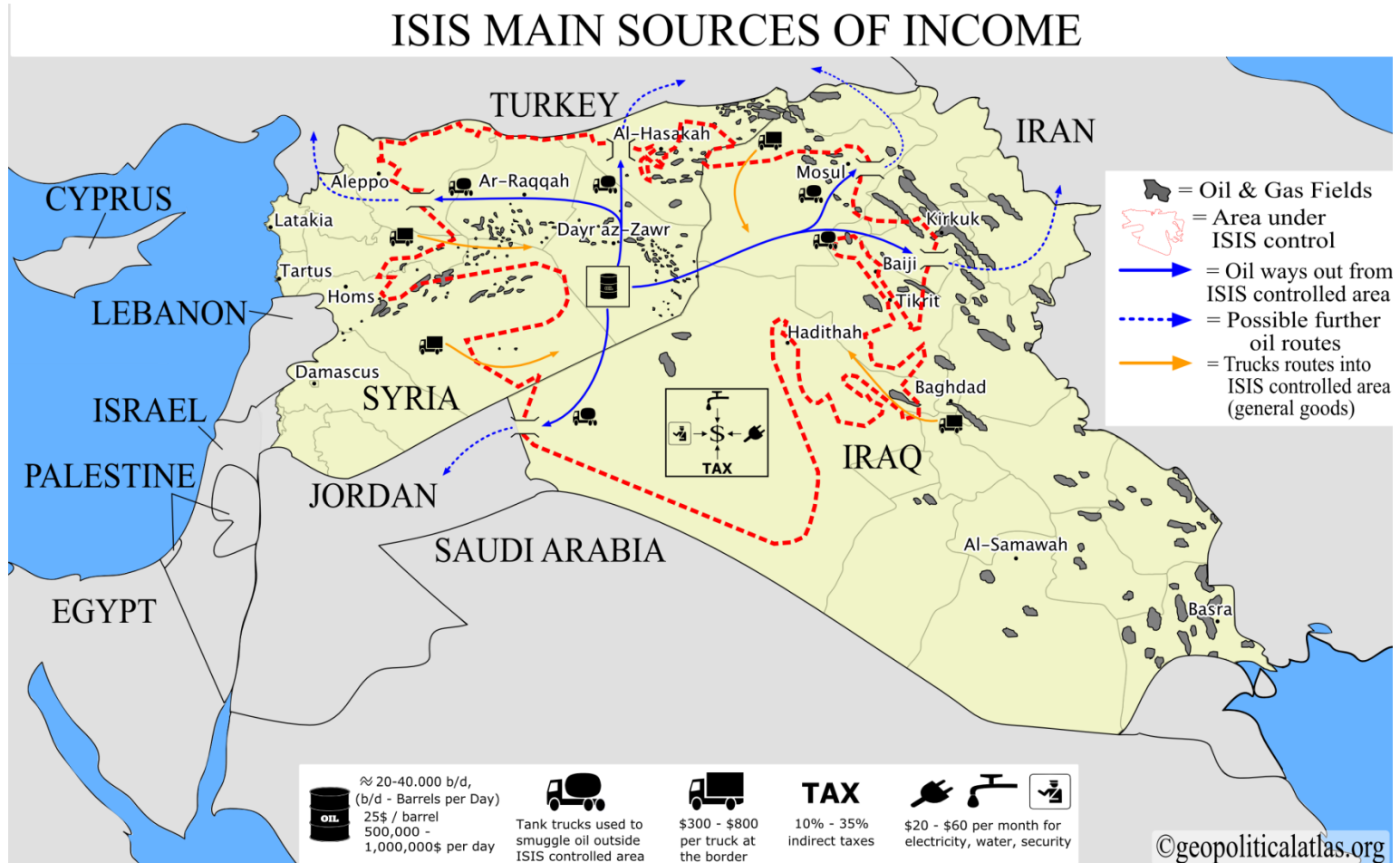
# OIL: Gasoline lines in the '73 Oil Embargo

“ A man in line in San Jose waiting for gas ”

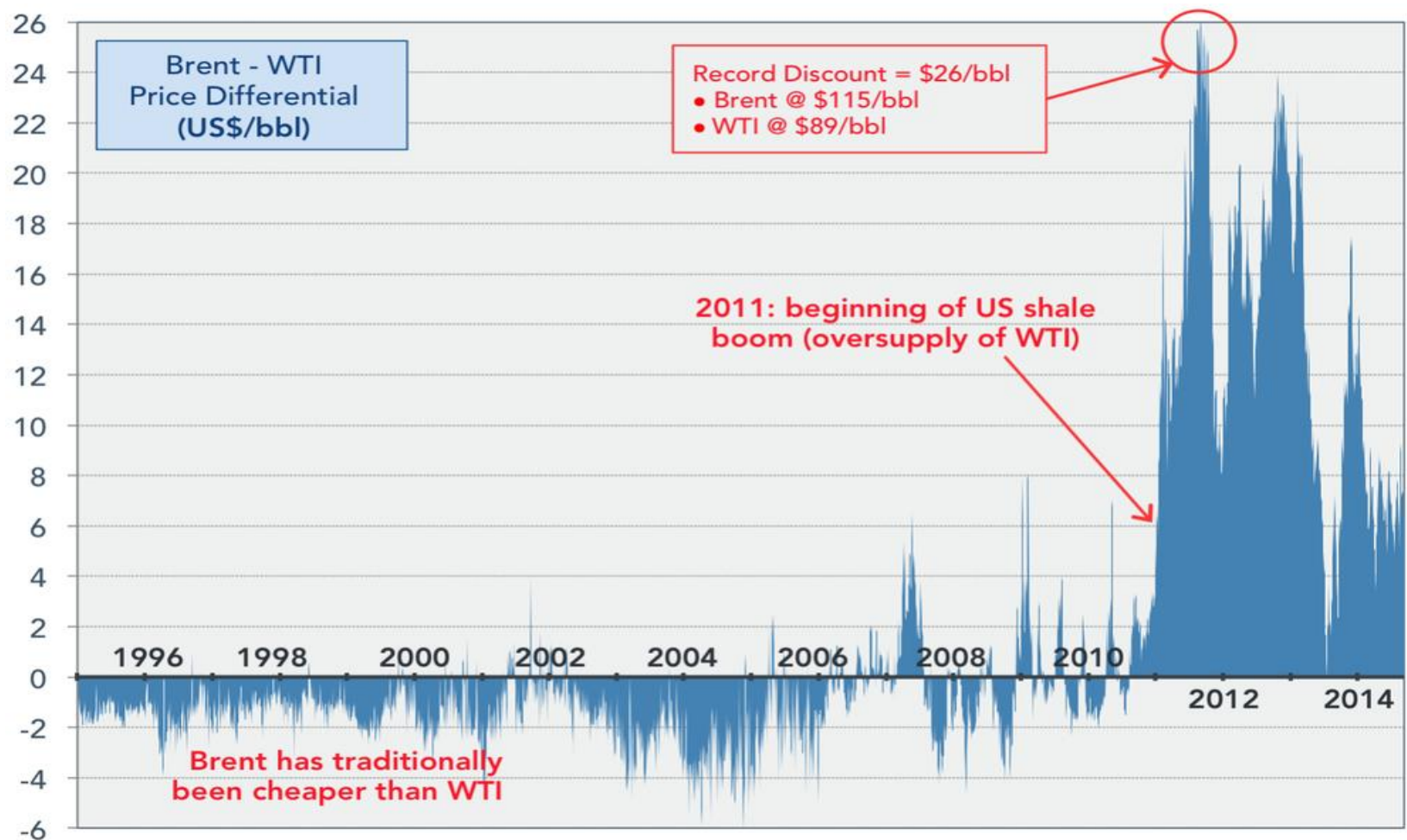


# OIL: The Middle East is UNSTABLE

## Likely to Pump

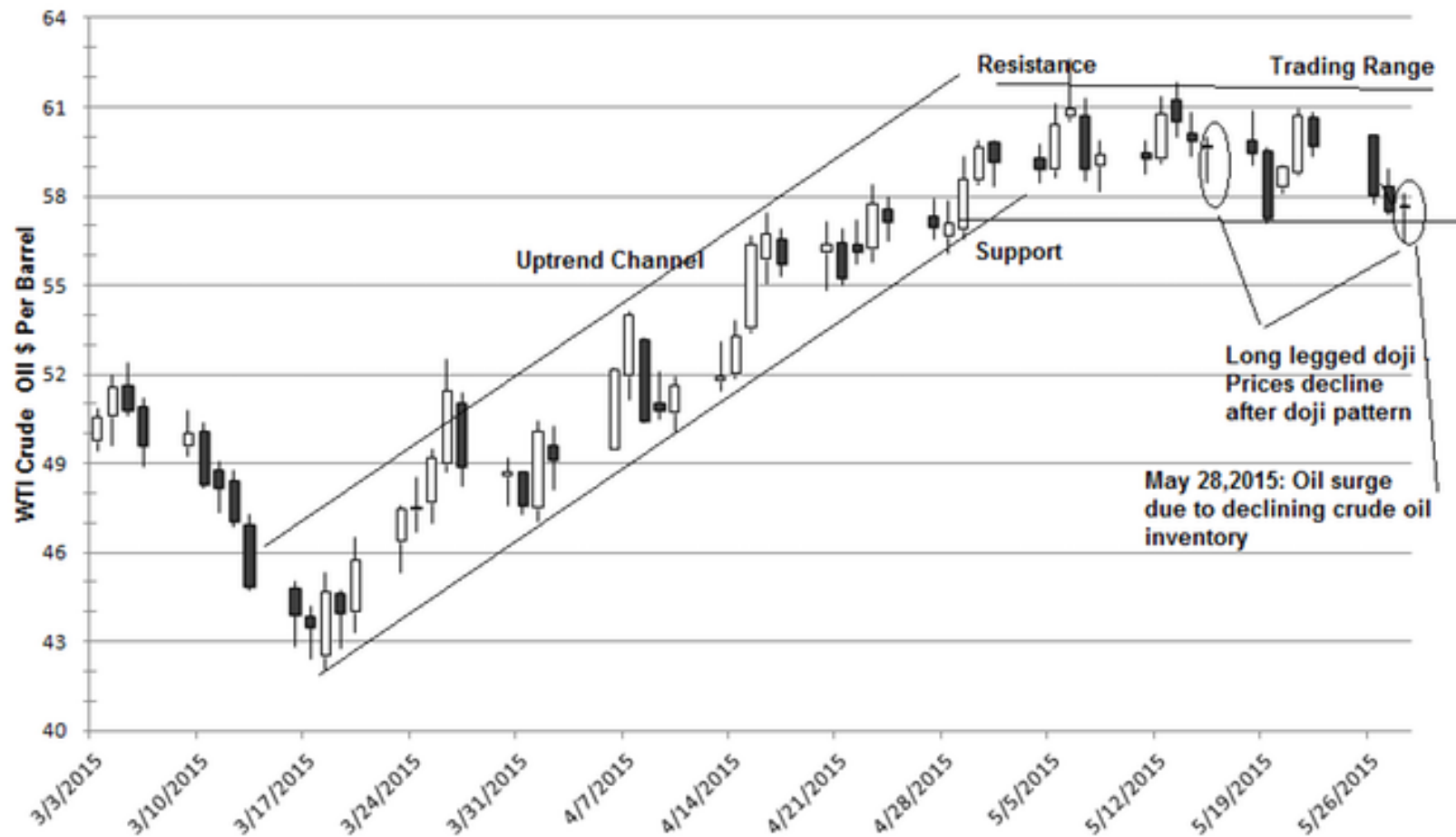


# Oil: Brent vs WTI Spread

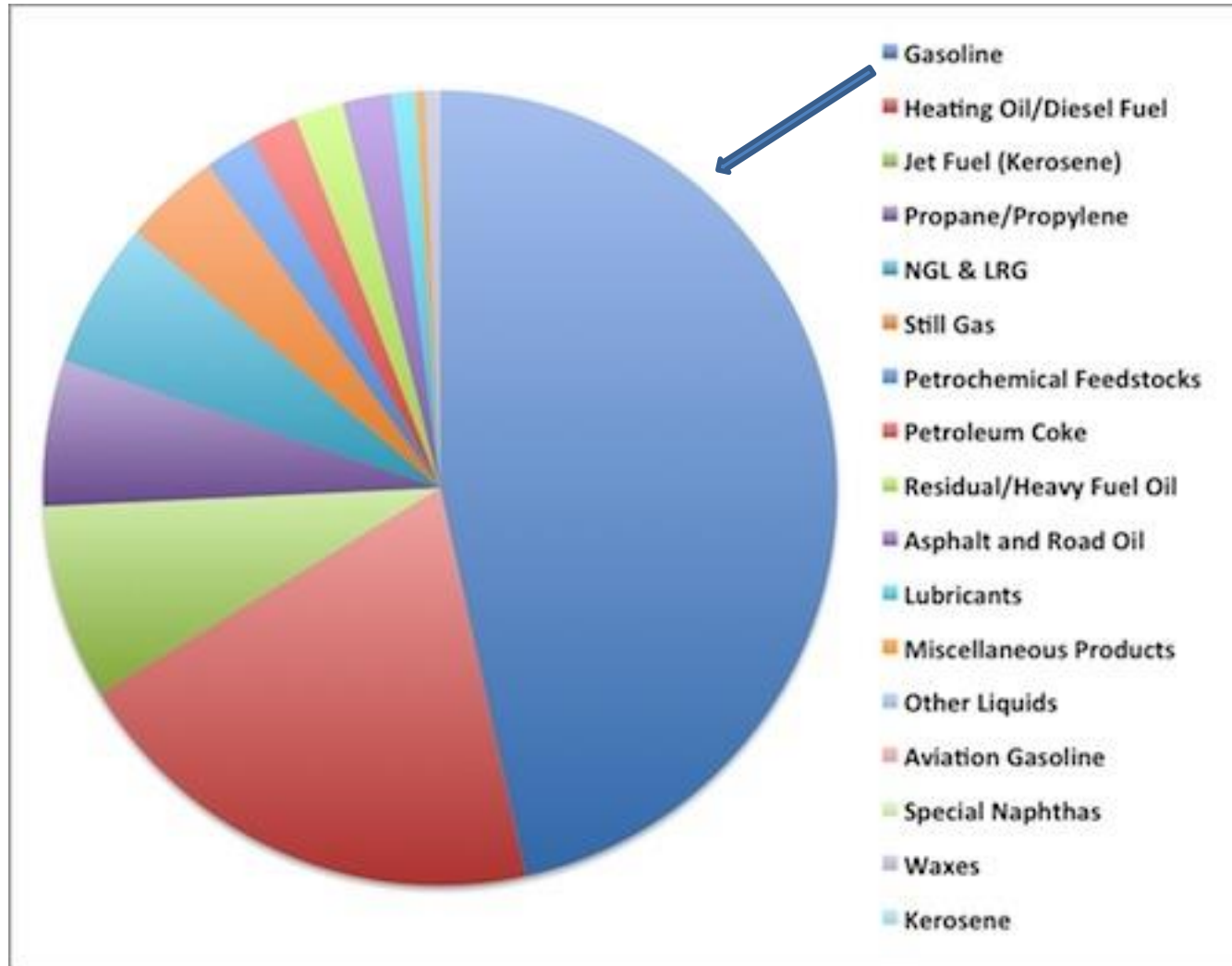


# OIL: WTI Prices have moved up to a TRADING RANGE SHORT TERM

## Front Month Crude Oil Futures 3- Month Price Evolution



Oil: How we use it in the US- Net transportation dominates  
< Improved Café standards have improved overall mileage over time, But..>



# OIL: Key Producers by Country

<Note that most Oil Producers outside North America are STATE OWNED>

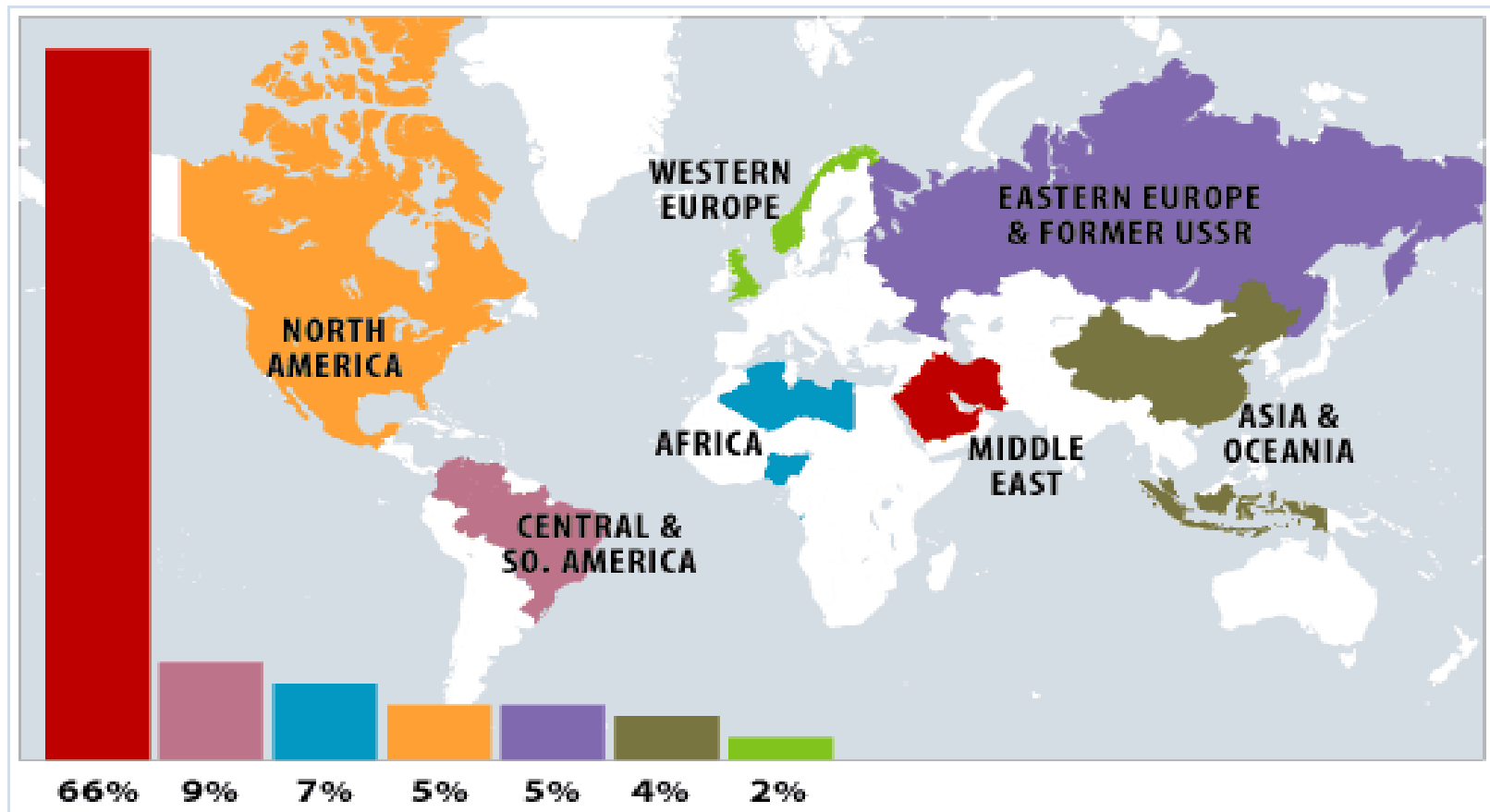
5/27/2015

Oil - production - Country Comparison



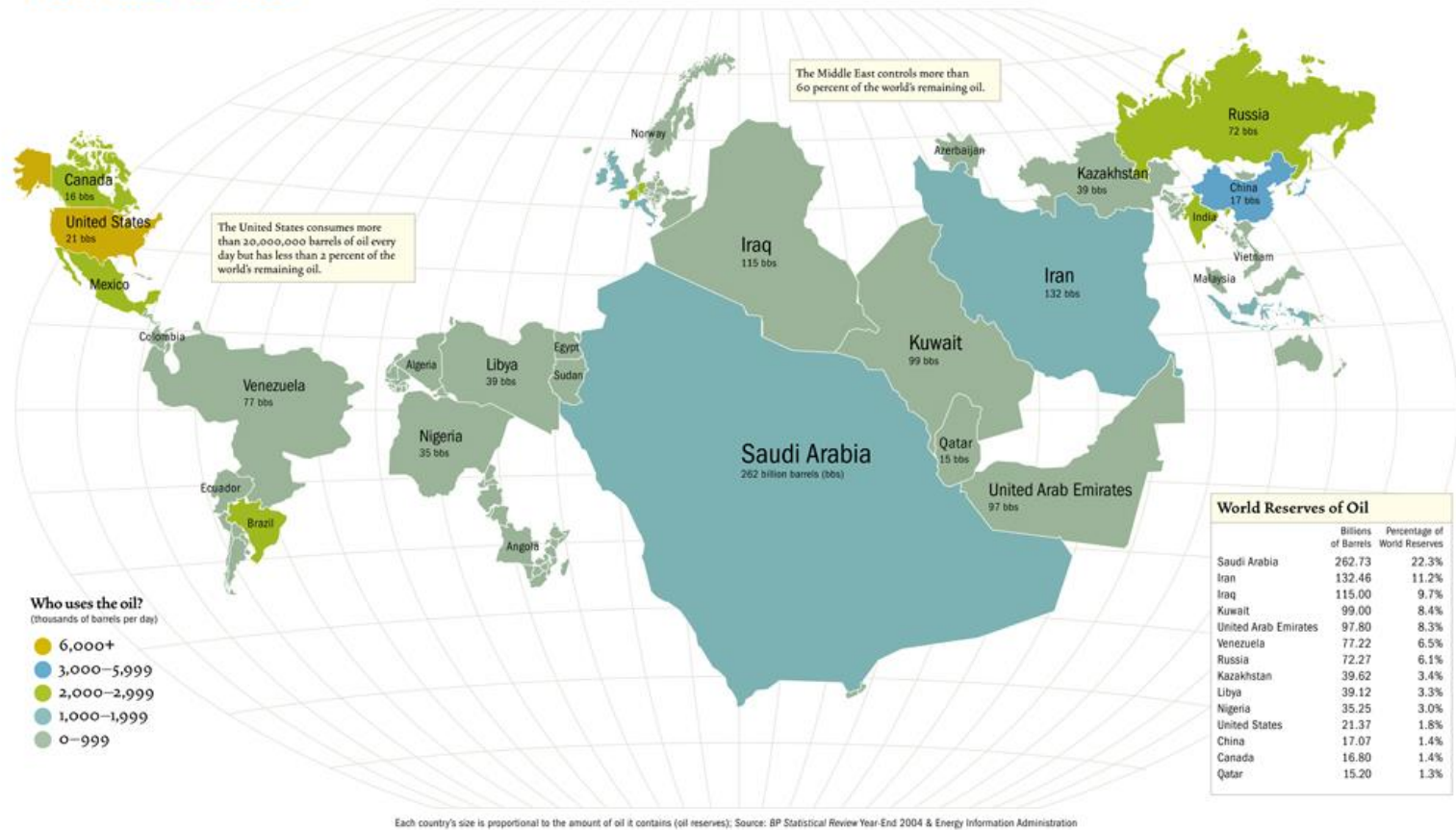
# OIL: World's Oil Reserves > Middle East Holds the Cards

## Where Are the World's Oil Reserves?



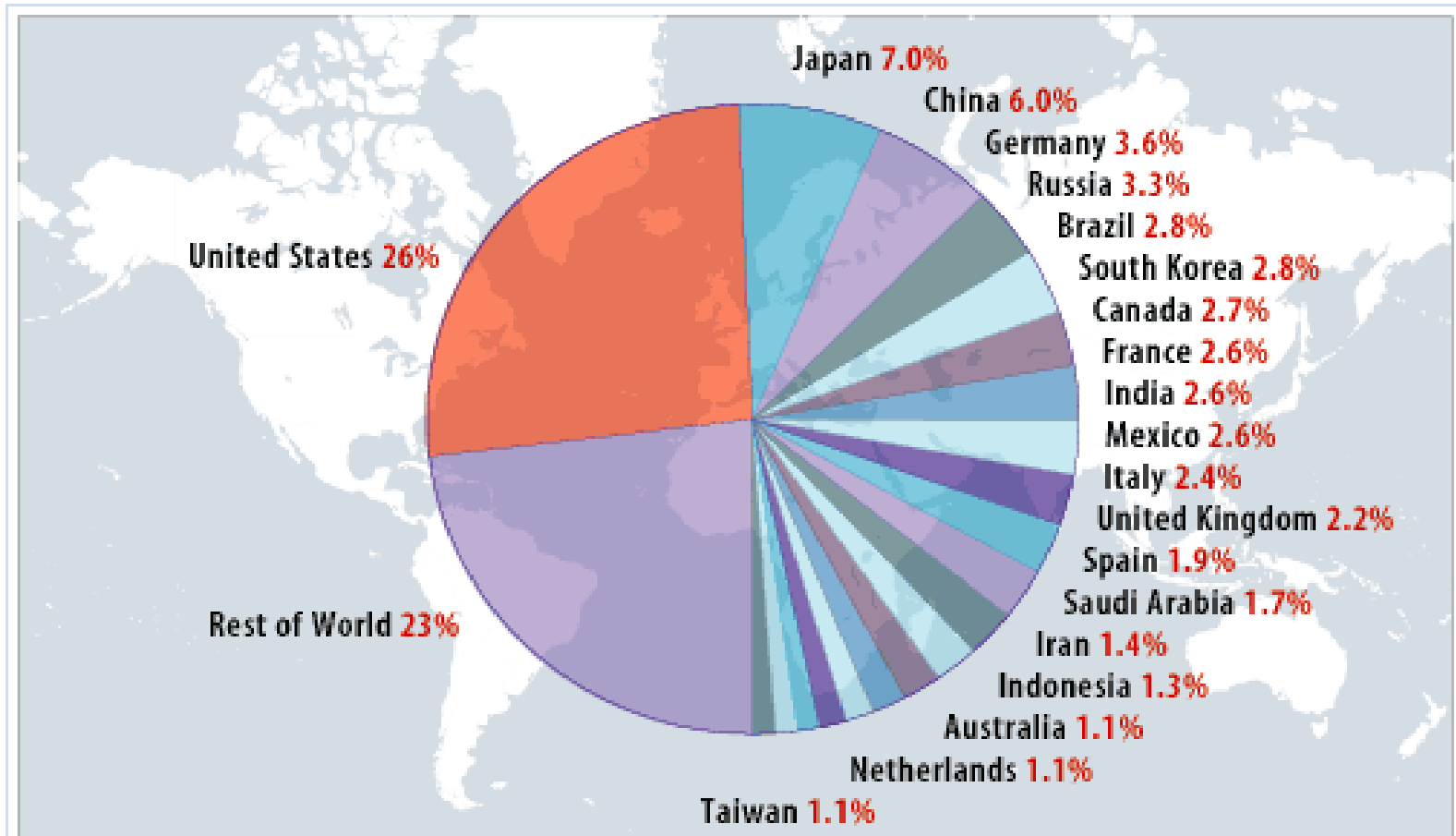
# Oil: Another View of Reserves

## Who has the oil?

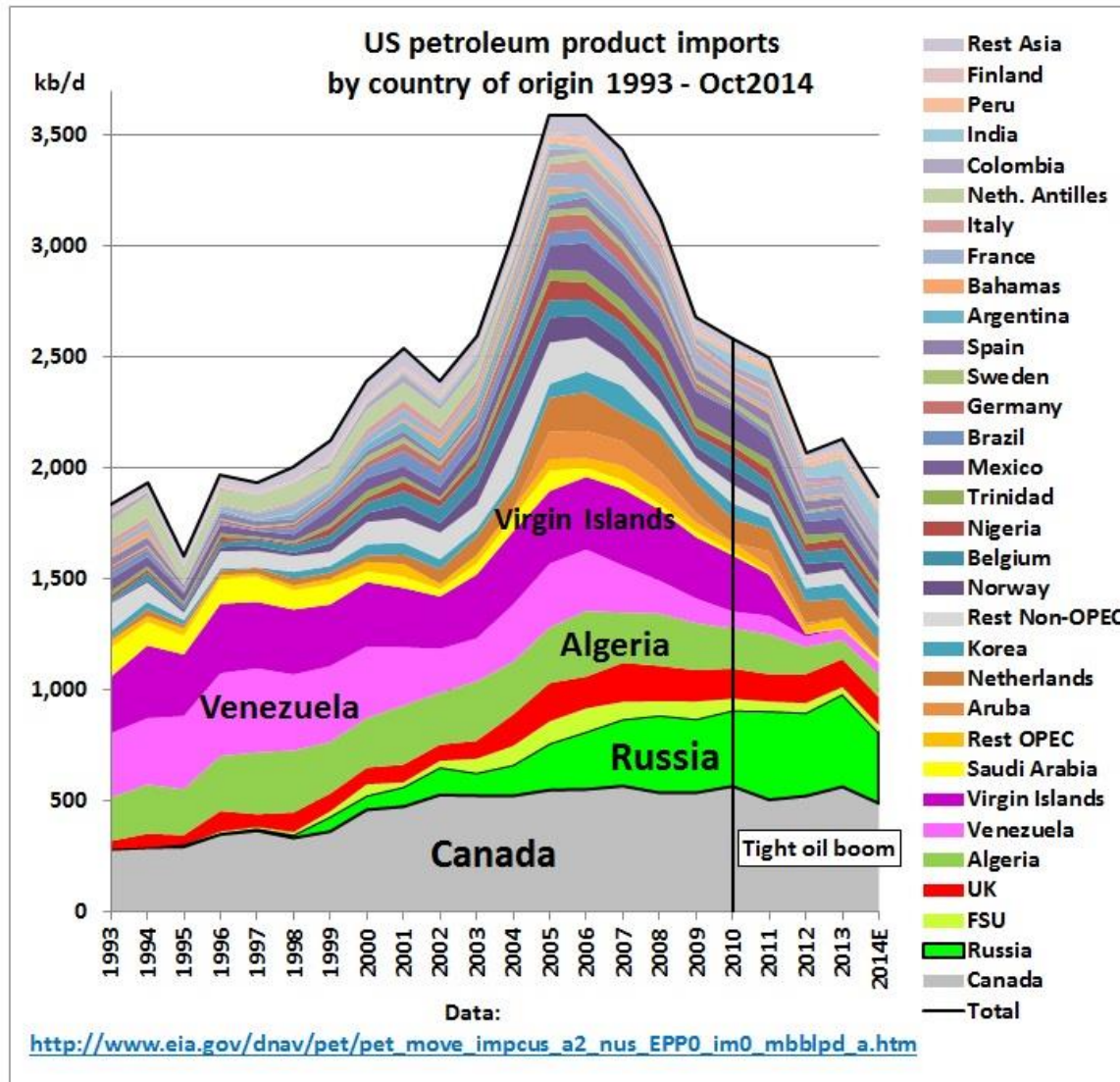


# Oil: Key Consuming Nations

## Who Consumes the Most Oil?



# OIL: US Imported Oil (1993-2014)



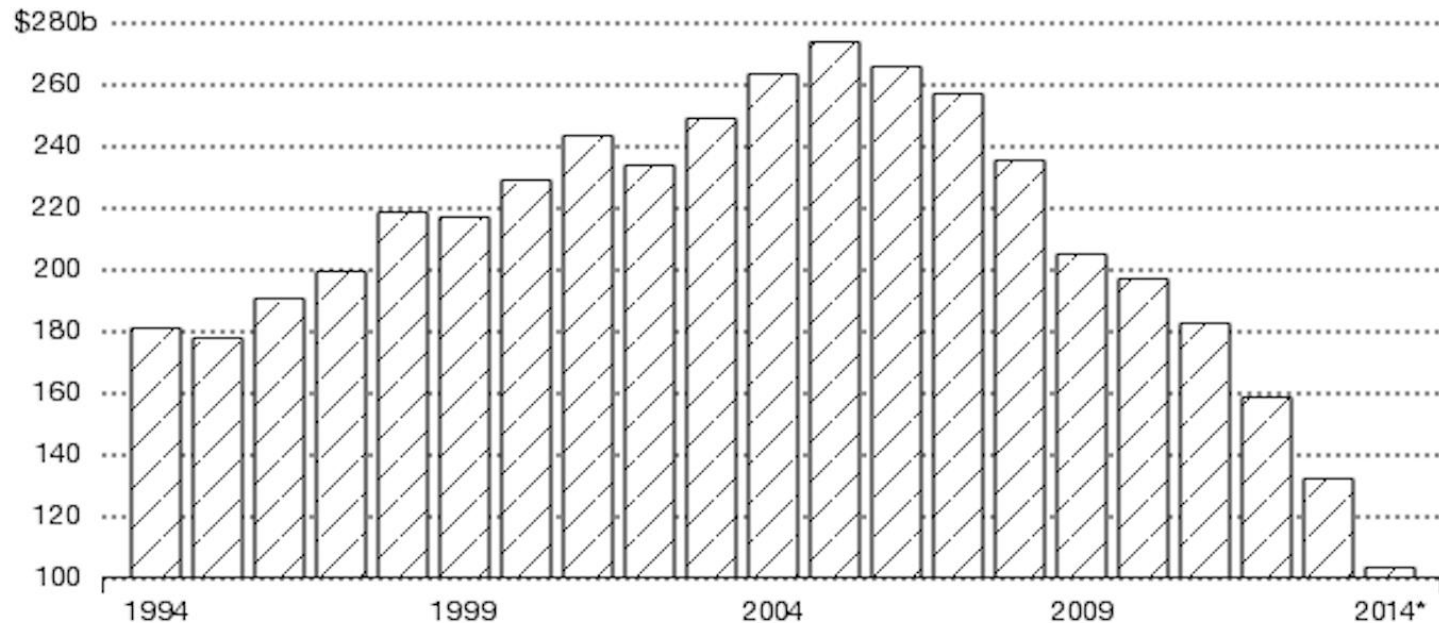
# OIL: Does the US Have ENERGY Independence?

- There have been many reports in the press saying we are Energy Independent
- What say you?
- Lets have a show of hands

# OIL: Cost of imported oil to the US

## Curbing Our Foreign Crude Addiction

U.S. petroleum trade deficit (in billions of \$).

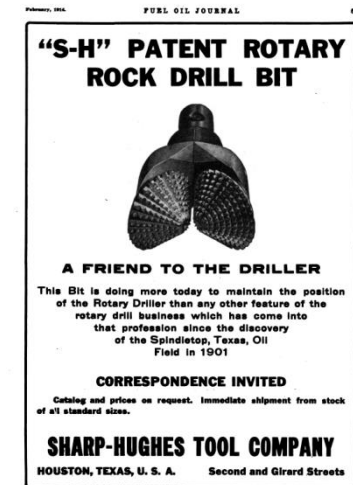


Source: U.S. Census

\* Jan. - Nov.

# OIL: Bit Technology> 1908 Patent

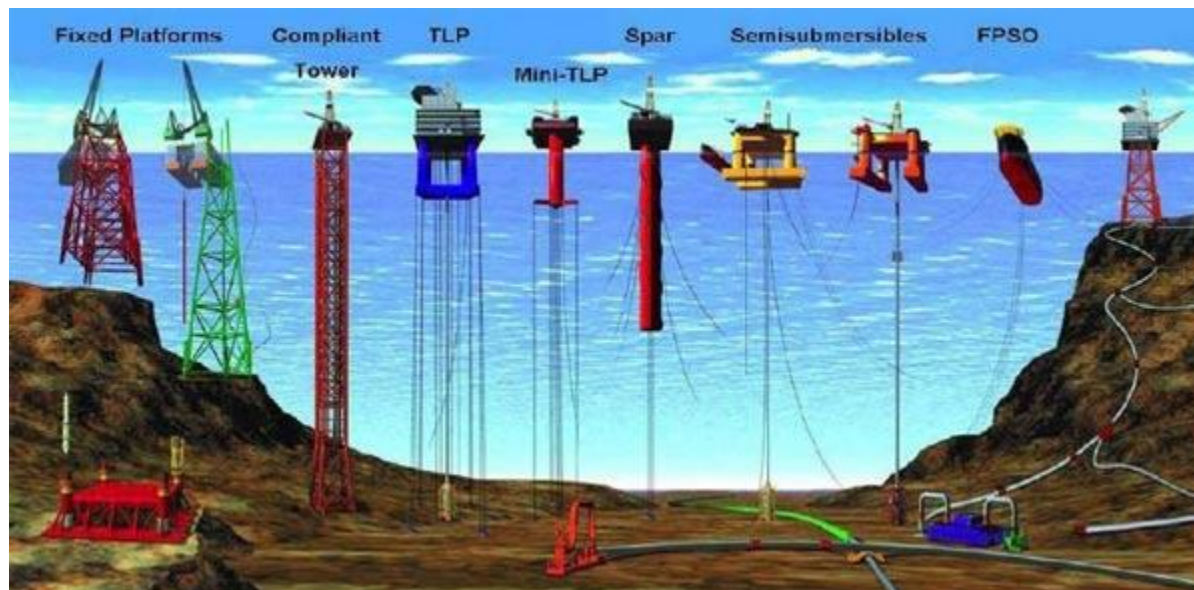
- The key drilling breakthrough was the Sharp- Hughes drilling bit patented in 1908
- When Howard Hughes father passed away, Howard inherited the company.. This BIT has been improved over the years but the concept has survived



- "Sharp-Hughes Tool Company advertisement in Fuel Oil Journal (February 1914)" by Sharp-Hughes Tool Company - Fuel Oil Journal. Licensed under Public Domain via Wikimedia Commons - [http://commons.wikimedia.org/wiki/File:Sharp-Hughes\\_Tool\\_Company\\_advertisement\\_in\\_Fuel\\_Oil\\_Journal\\_\(February\\_1914\).png#/media/File:Sharp-Hughes\\_Tool\\_Company\\_advertisement\\_in\\_Fuel\\_Oil\\_Journal\\_\(February\\_1914\).png](http://commons.wikimedia.org/wiki/File:Sharp-Hughes_Tool_Company_advertisement_in_Fuel_Oil_Journal_(February_1914).png#/media/File:Sharp-Hughes_Tool_Company_advertisement_in_Fuel_Oil_Journal_(February_1914).png)
- <http://www.texasmonthly.com/story/texas-primer-hughes-drill-bit>

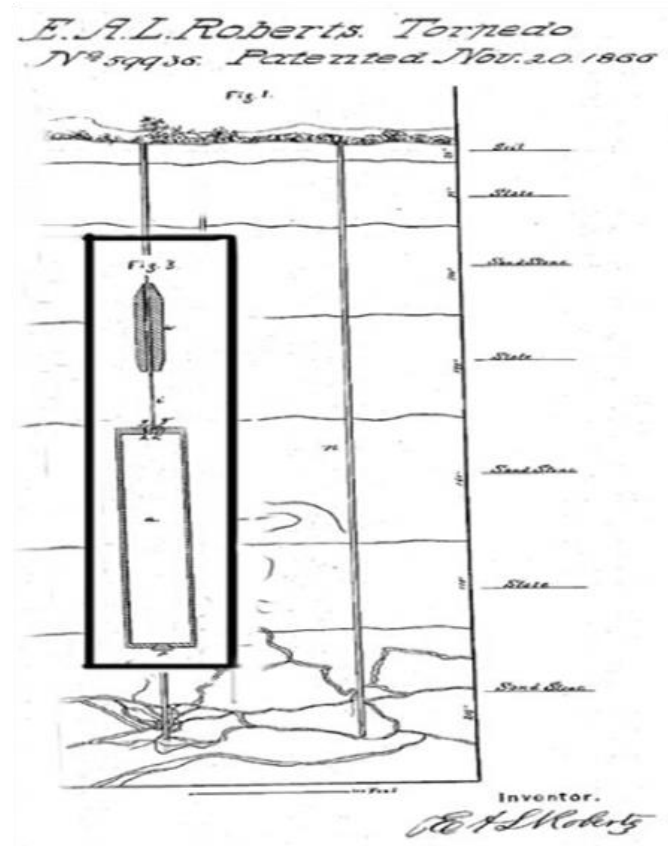
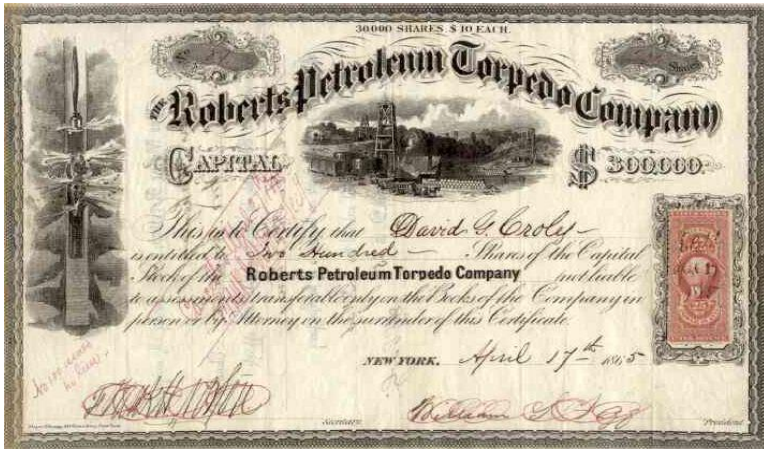
# Oil: Deepwater Drilling

- Beyond the scope of this presentation
- Summary: very expensive, long term, high risk and Capex is being deferred to a large extent in Deepwater WW- Avoid
- Note- much of Gulf oils are fairly shallow (500 ft) & lower risk

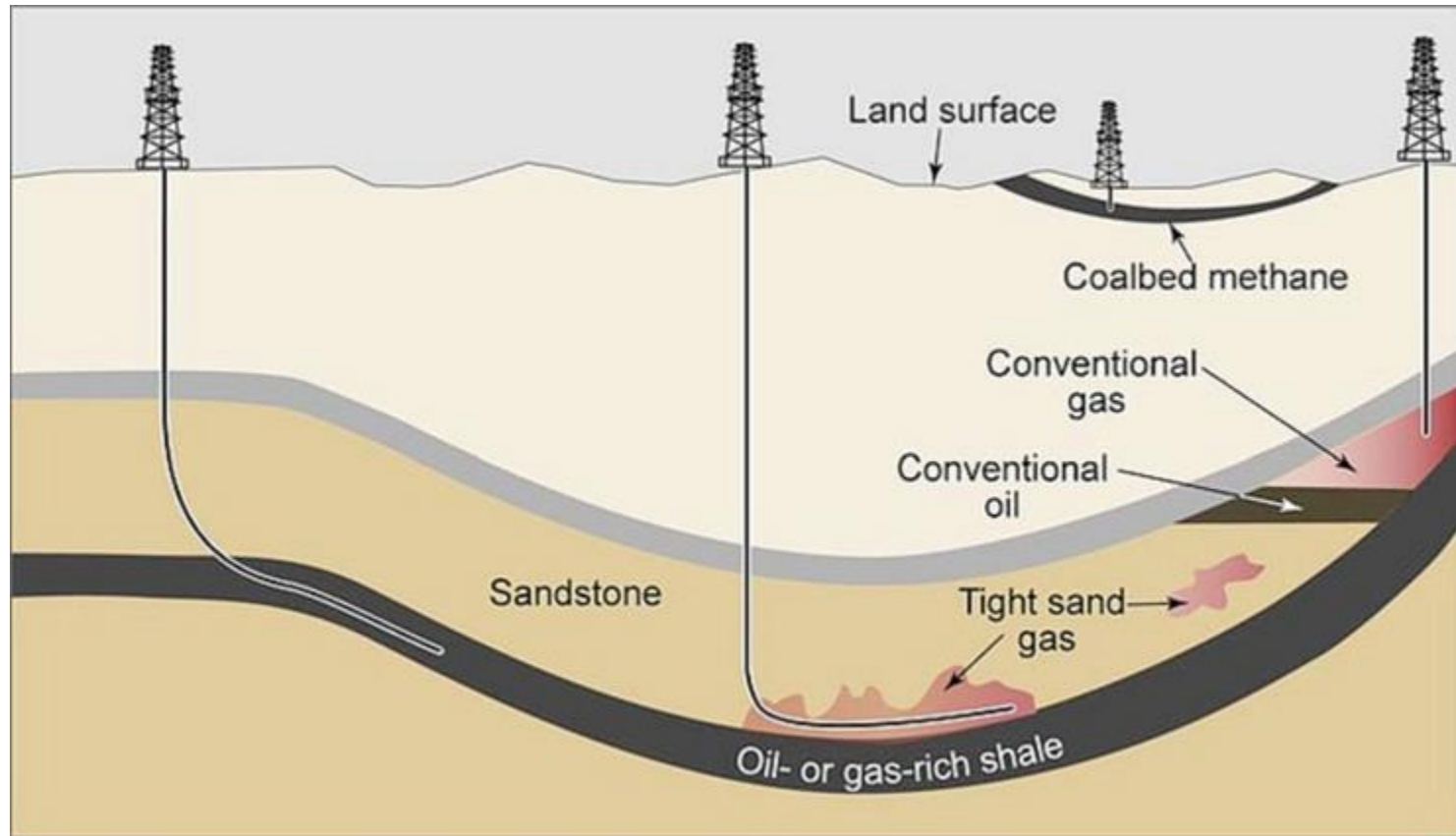


# OIL: Fracking Technology

- Not a new technology- First patent issued “Improvement in Exploding Torpedoes in Artesian Wells” on April 25, 1865. Shares of the Roberts Petroleum Torpedo Company were issued in 1865. Patent number 59,936
- The original patent >
- Here are shares of the company



# Oil: Overview of Fracking vs Conventional Onshore Wells



Sources: U.S. Energy Information Administration and U.S. Geological Survey.

# OIL: Fracking Technology in a Nutshell

## Process overview

Horizontal Drill

Water

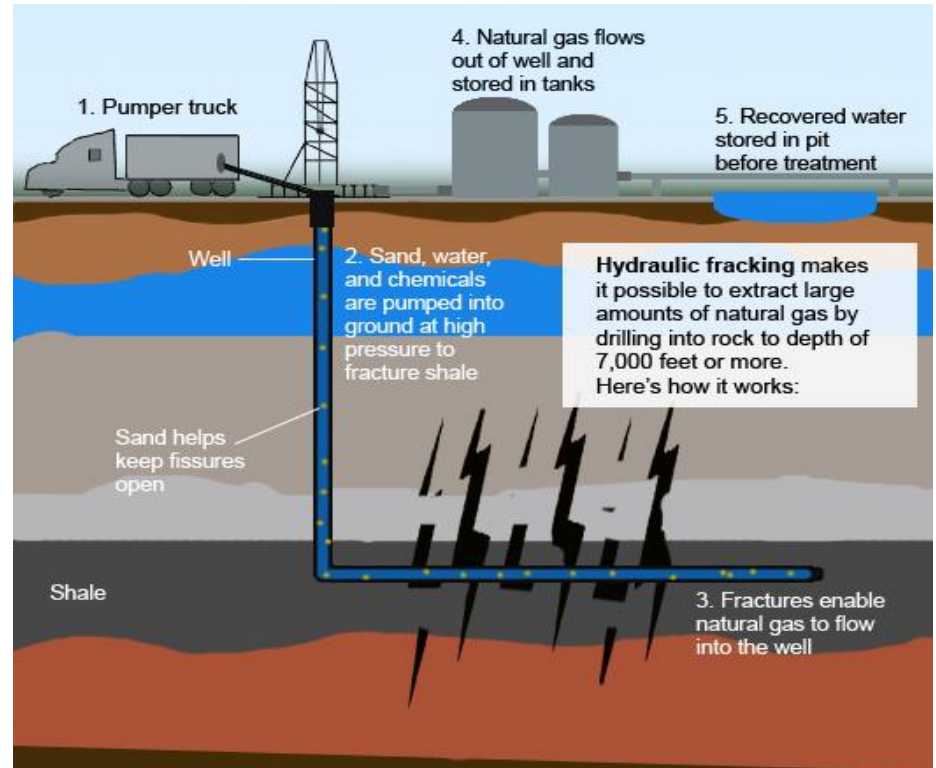
Chemicals

Sand

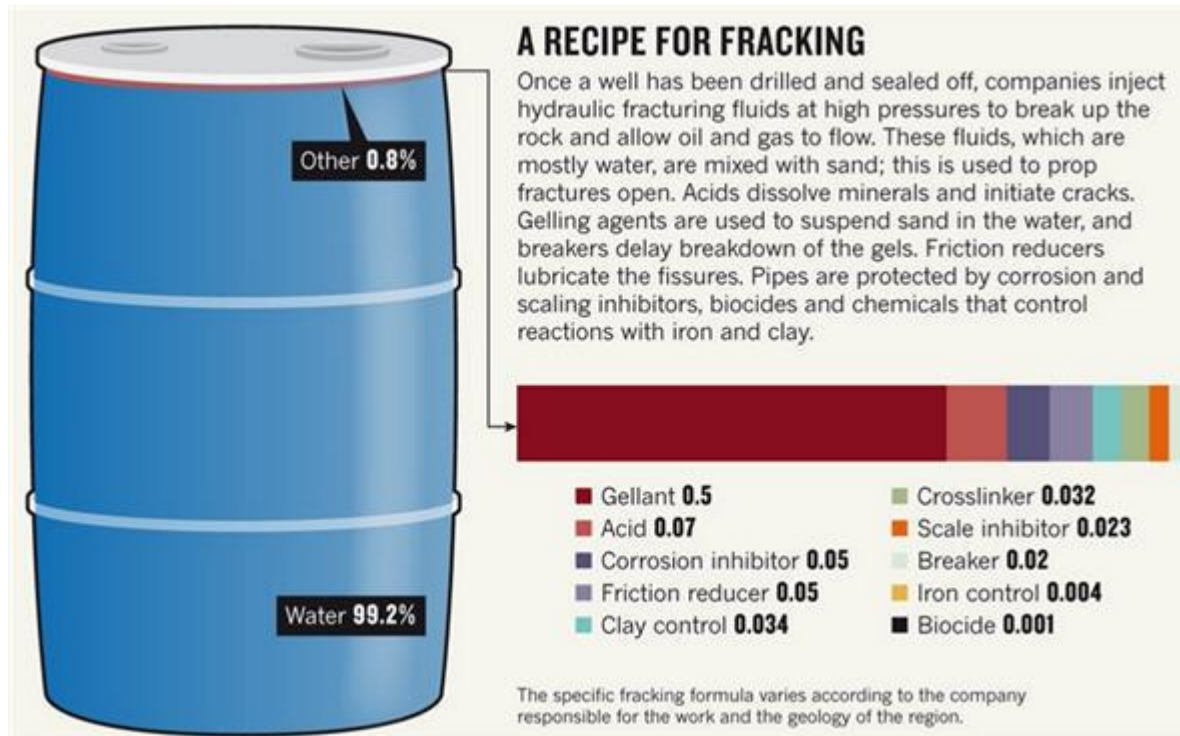
Pressure

A Video >

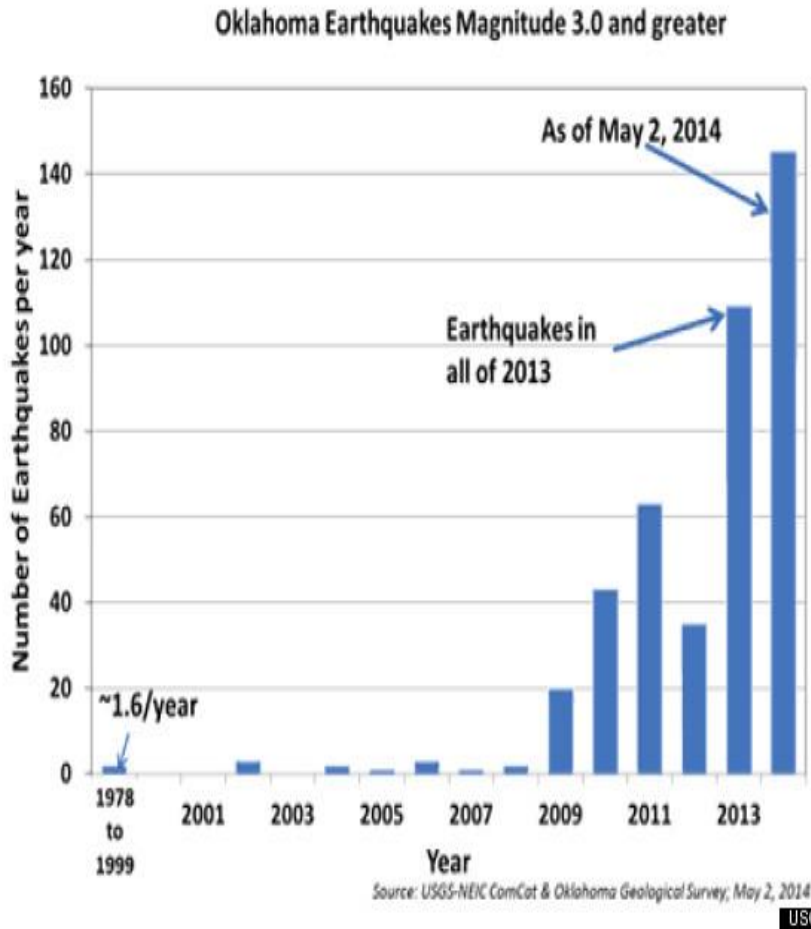
<https://www.youtube.com/watch?v=fBQCQ6HL2Yw>



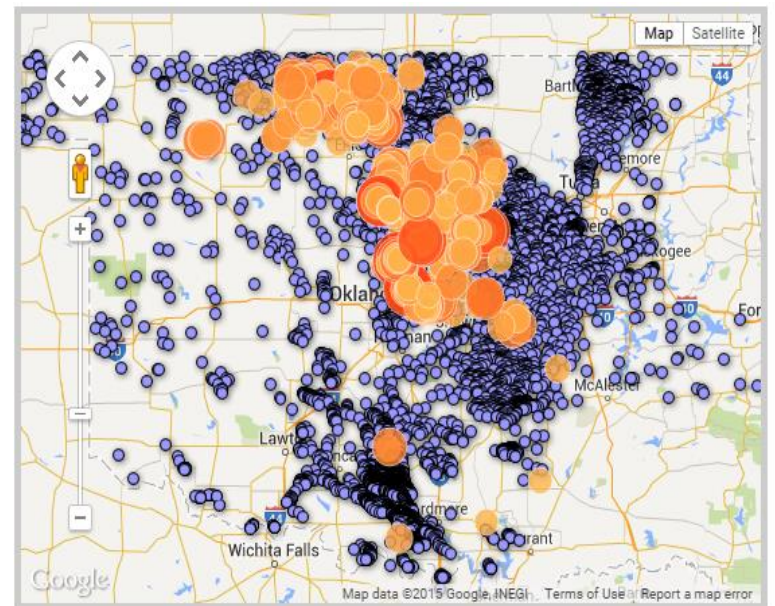
# Oil: Fracking Chemicals



# Oil: Fracking Induced Quakes



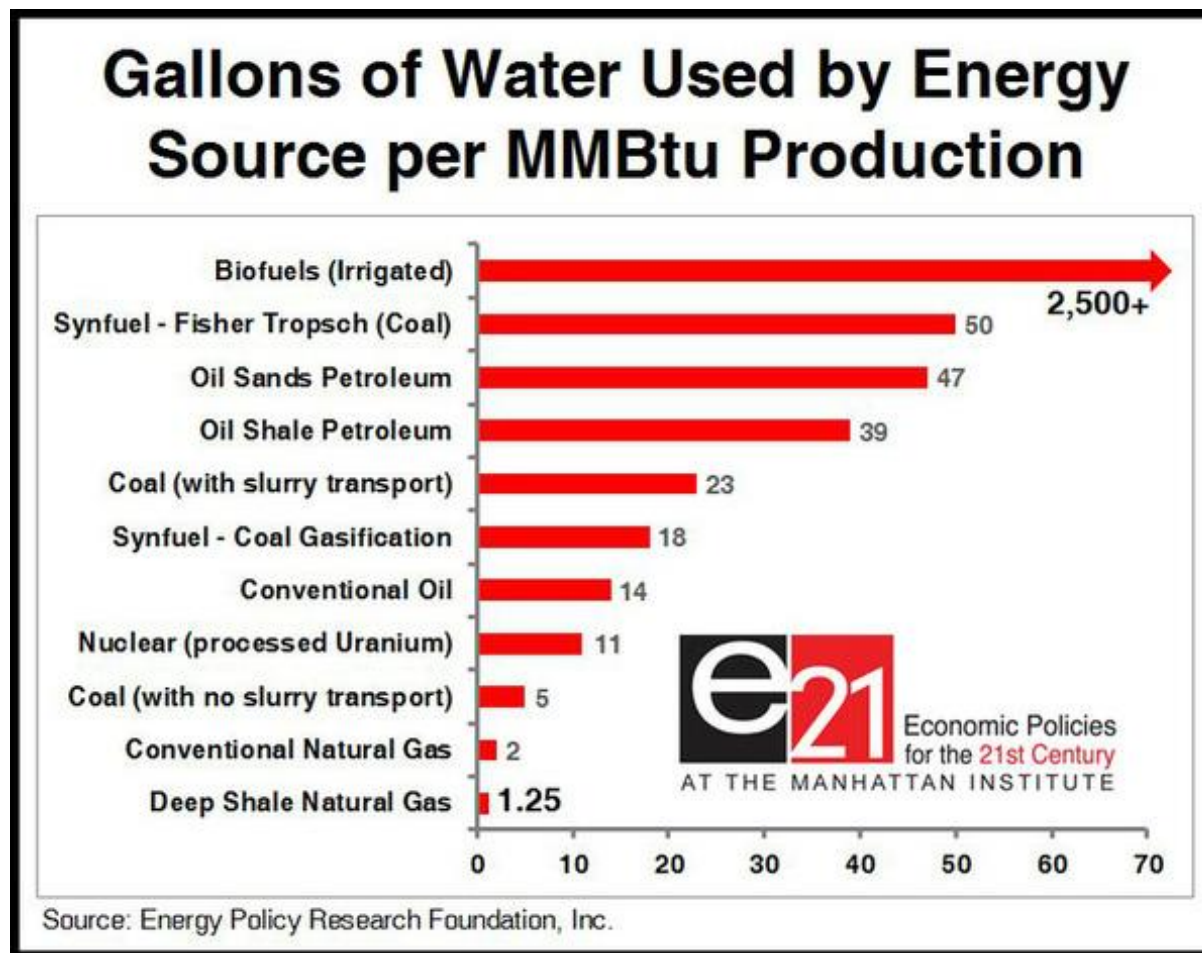
## Oklahoma 2014 Quakes



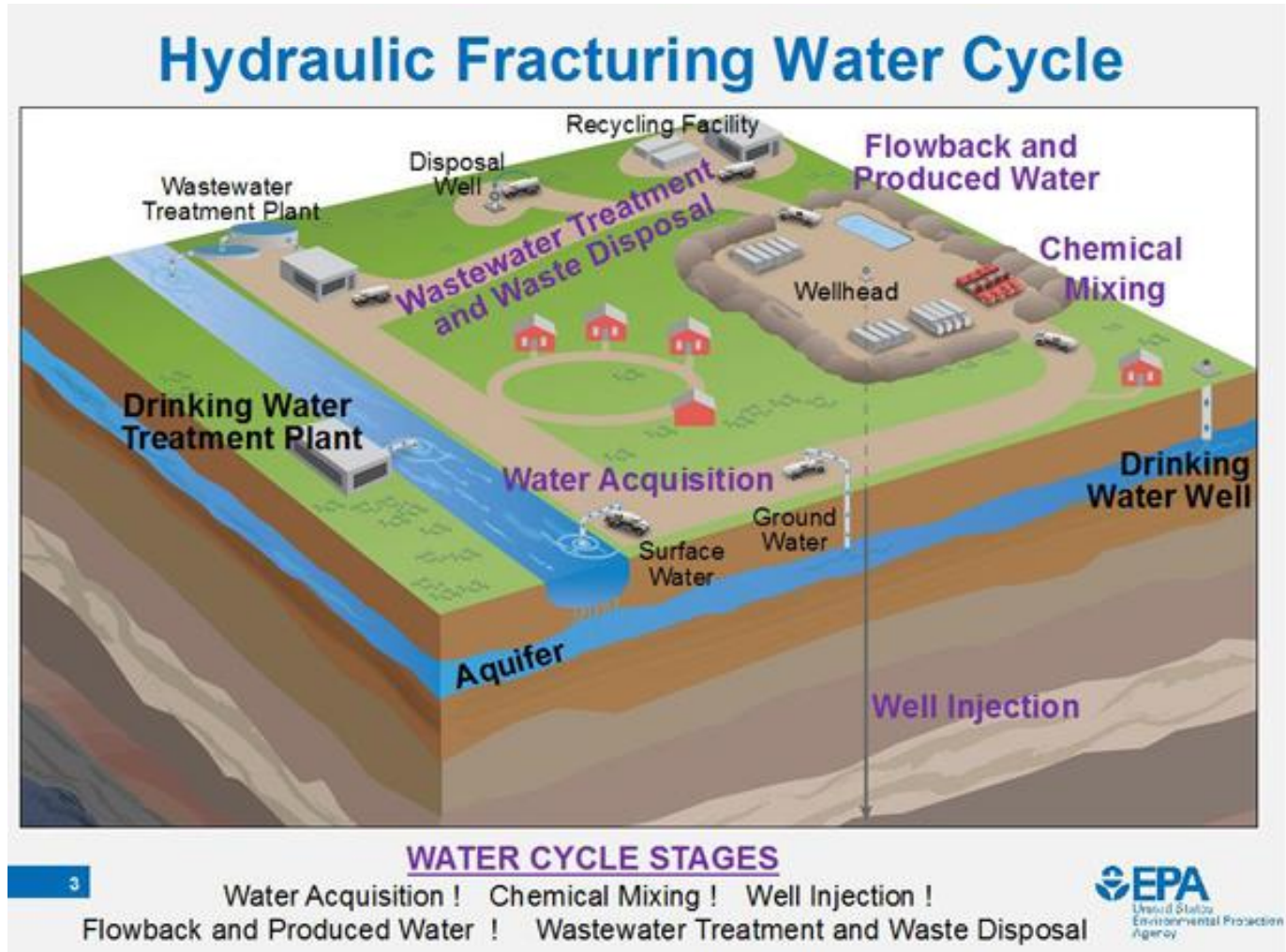
Note: Only Earthquakes with a magnitude of 3.0 and higher are displayed.

- ☐ Earthquakes - Past 7 days
- ☐ Earthquakes - 2015 (YTD)
- ☒ Earthquakes - 2014
- ☐ Earthquakes - 2013
- ☐ Earthquakes - 2012
- ☐ Earthquakes - 2011
- ☐ Earthquakes - 2010
- ☐ Earthquakes - 2000 through 2009
- ☐ Earthquakes - 1990 through 1999
- ☐ Earthquakes - 1980 through 1989
- ☒ Waste Water Disposal Wells

# OIL: Water Use by Technology



# Oil: Fracking Water Cycle



# OIL: EPA re Fracking Water Contamination

## < Statement 6/5/2015 >

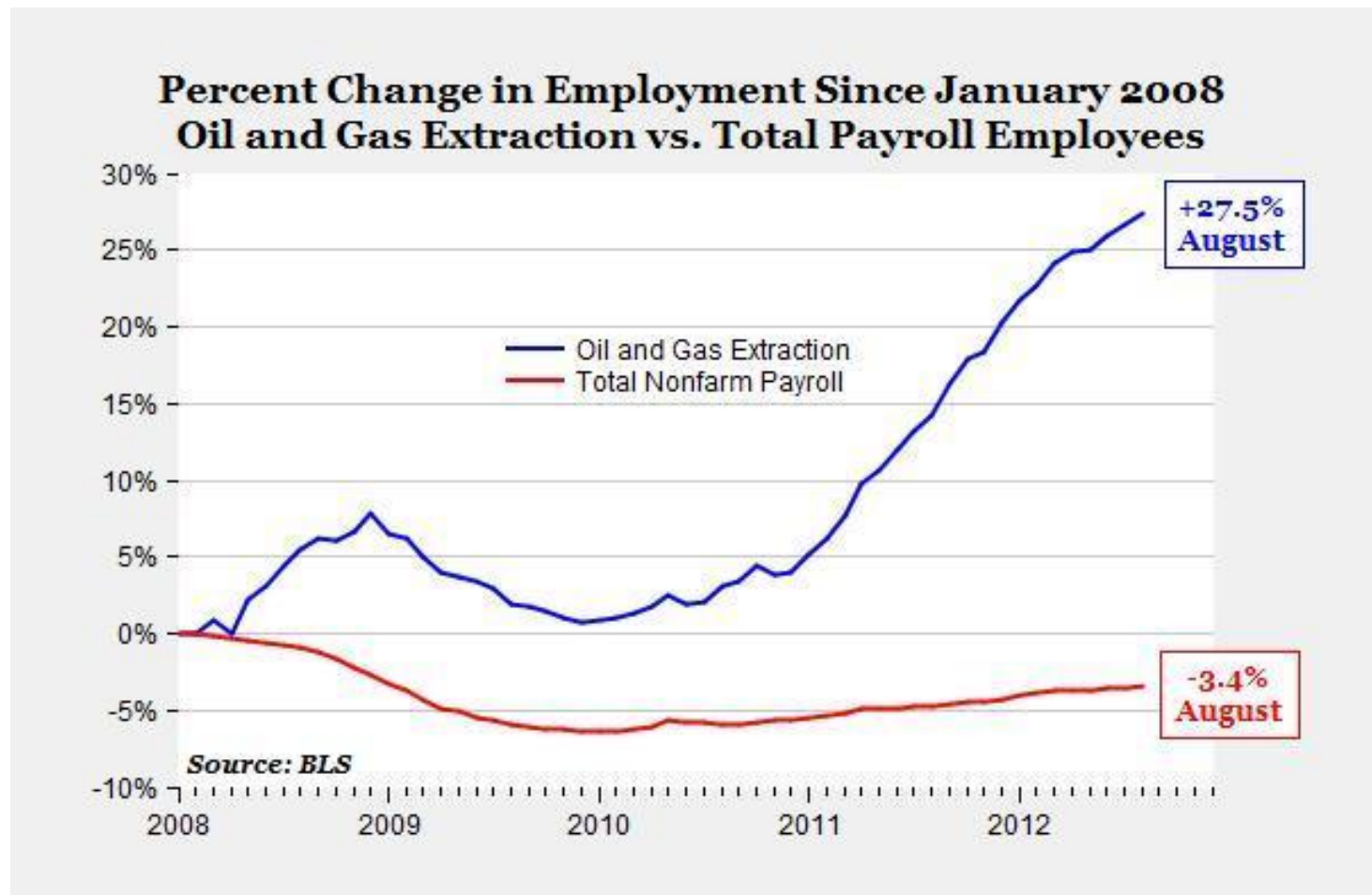
- <http://www.foxnews.com/politics/2015/06/04/epa-declares-no-widespread-harm-to-drinking-water-from-fracking-boosting/>
- <http://www2.epa.gov/hfstudy>
- Paraphrase >
  - Contamination of drinking water is isolated to a few instances, not widespread .. (my interpretation)

# OIL: Fracking Upside & Downside Summary

- Upside
  - **Dramatic Increase in US production**
  - Less middle east dependence
  - Reduced trade deficit
  - Reduced well risk from spills, blowouts
  - Much less costly than deep water
- Downside
  - Earthquake potential
  - Concern about groundwater (mitigated by EPA 6/5/15)

# OIL: Employment Gains In US Oil

< Since Oil Crashed in 2008, many job gains in Oil >

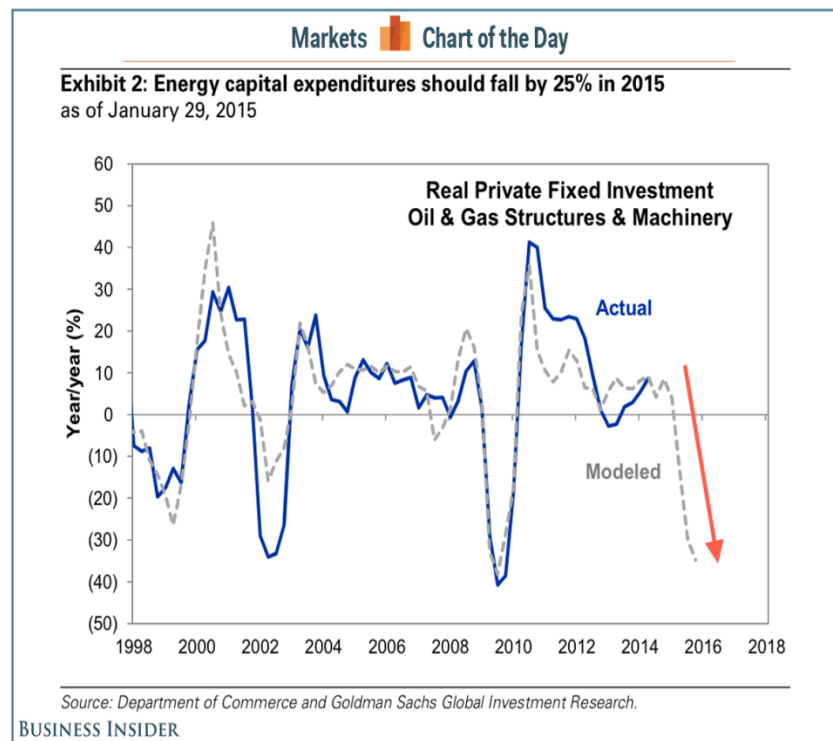


# OIL: Now Downside > Industry Job & Capex Cuts

## Some Job Unwind

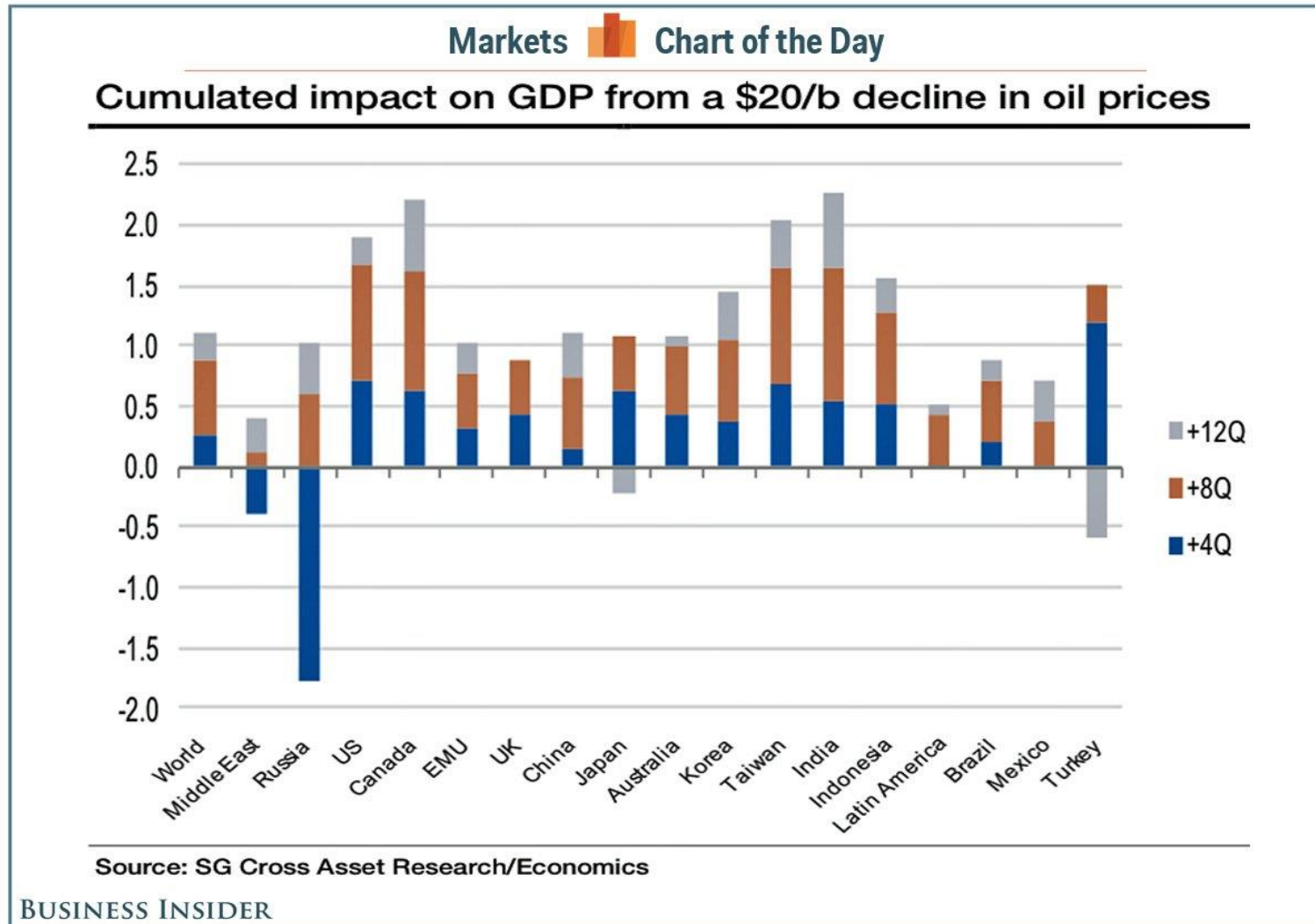
- Thousands of oil-field workers are in the same shoes or, more accurately, steel-toed boots. Since crude prices began tumbling last year, **energy companies have announced plans to lay off more than 100,000 workers around the world. At least 91,000 layoffs have already materialized**, with the majority coming in oil-field-services and drilling companies, according to research by Graves & Co., a Houston consulting firm.
- Now the cutbacks are slowly showing up in federal employment data. Direct employment in oil and gas extraction, which had grown by more than 50,000 jobs since 2007, has fallen by about 3,000 jobs **since it peaked in October at 201,500, according to the Bureau of Labor Statistics; 12,000 jobs have disappeared from the larger category of energy support since it reached 337,600 jobs in September.**
- <http://www.wsj.com/articles/oil-layoffs-hit-100-000-and-counting-1429055740>

## Oil Industry Capex Cuts



# OIL: Overall Impact on World's GDP

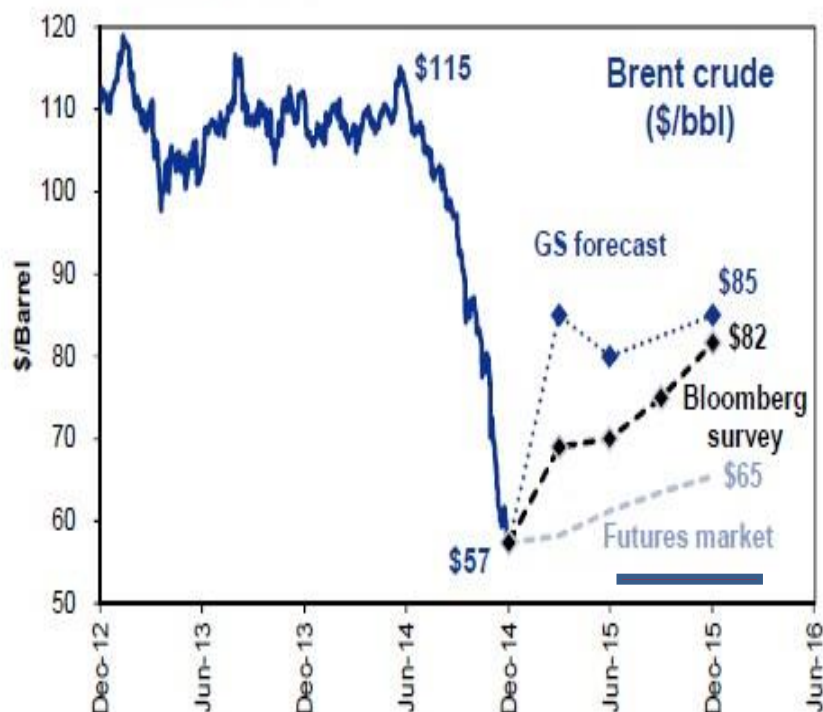
< \$40 decline but Note, it takes time to filter through >



# OIL: Price Forecasts & GDP

< Where we are now in price, infers support for GDP support of 3%+ >

**Exhibit 13: Oil price expectations of forecasters vs. market as of December 31, 2014**



Source: Bloomberg, FactSet, and Goldman Sachs Global Investment Research.

**Exhibit 14: Sensitivity of S&P 500 EPS to Brent oil price as of December 31, 2014**

Sensitivity to change in average 2015 Brent Oil							
Oil Price	\$54	\$64	\$74	\$84	\$94	\$104	\$114
<b>GDP</b>							
2015	3.8 %	3.6 %	3.4 %	3.1 %	2.9 %	2.7 %	2.4 %
2016	4.4	4.0	3.5	3.0	2.5	2.0	1.6
<b>2015 EPS</b>							
Level	\$126	\$125	\$124	\$122	\$121	\$119	\$118
Growth	9 %	7 %	6 %	5 %	4 %	2 %	1 %
<b>2016 EPS</b>							
Level	\$143	\$139	\$135	\$131	\$128	\$124	\$120
Growth	13 %	11 %	9 %	8 %	6 %	4 %	2 %

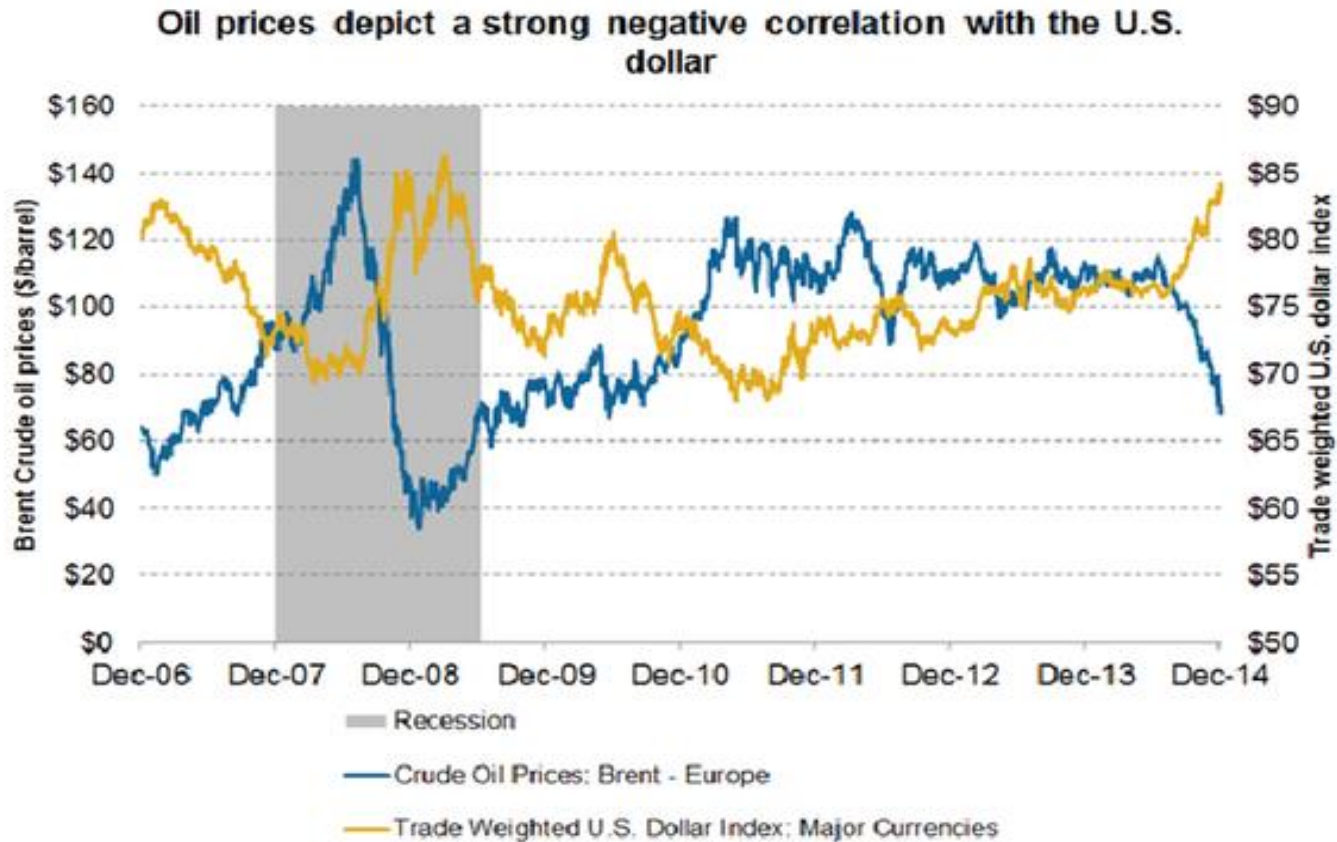
Source: Goldman Sachs Global Investment Research.

# OIL: Key Factors in Price

- **Supply/Demand: National & Company Survival Interests Key**
  - Swing producers: Saudis, US Shale, Russia, OPEC Cheaters
- **Sentiment**
- **Geo Political factors**
  - Iran Nuclear deal would lead to relaxed restrictions & increase in oil supply
  - Iraq is unstable- ISIS is controlling the North, WATCH the south
- **Cost of getting it & transporting it**
- **The US Dollar- Much of the worlds oil is priced in US \$**
  - Key linkage: US Economy > Rates & Fed > USD > Oil Price
- **Growth of World Economies**
- **Storage**
- **Seasonality, especially Nat Gas**
- **Efficiency trends continue to improve, especially in cars**
- **Alternatives- not really making a big dent**
- **Gasoline-OIL + TAXES & RBOB (Cost of refining)**

# OIL: Brent Oil vs USD Correlation

## Dollar up Oil down



# OIL: The World has Deflationary Forces

<Despite the worlds Central Banks attempts to reflate>

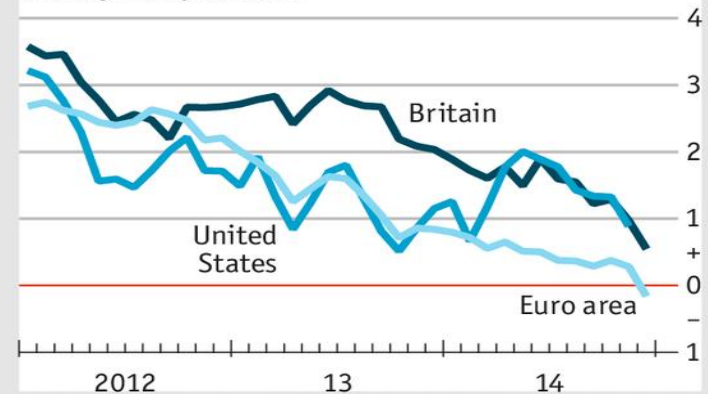
## New year, new lows

Brent crude oil price, \$ per barrel

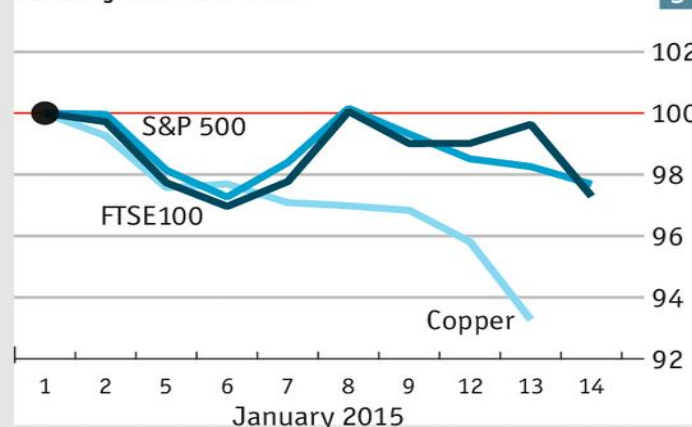


Consumer prices

% change on a year earlier



January 1st 2015=100



Ten-year government bond yields, %



Sources: Haver Analytics; Thomson Reuters

# OIL: Supply/Demand Factors

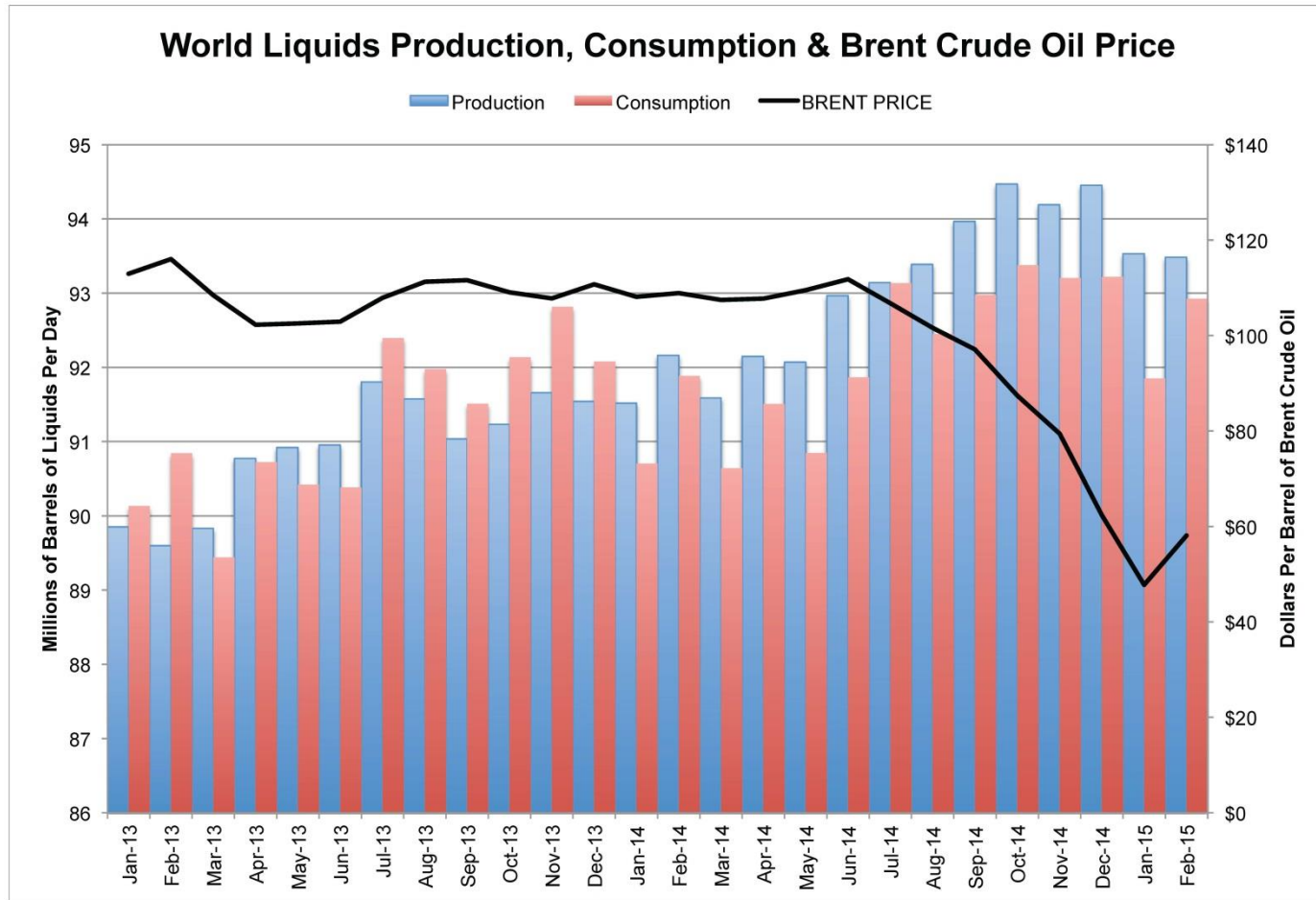
## **Demand Factors**

- Overall economic demand
- Transportation
- Seasonality- driving season, refinery conversion
- Weather
- Cost

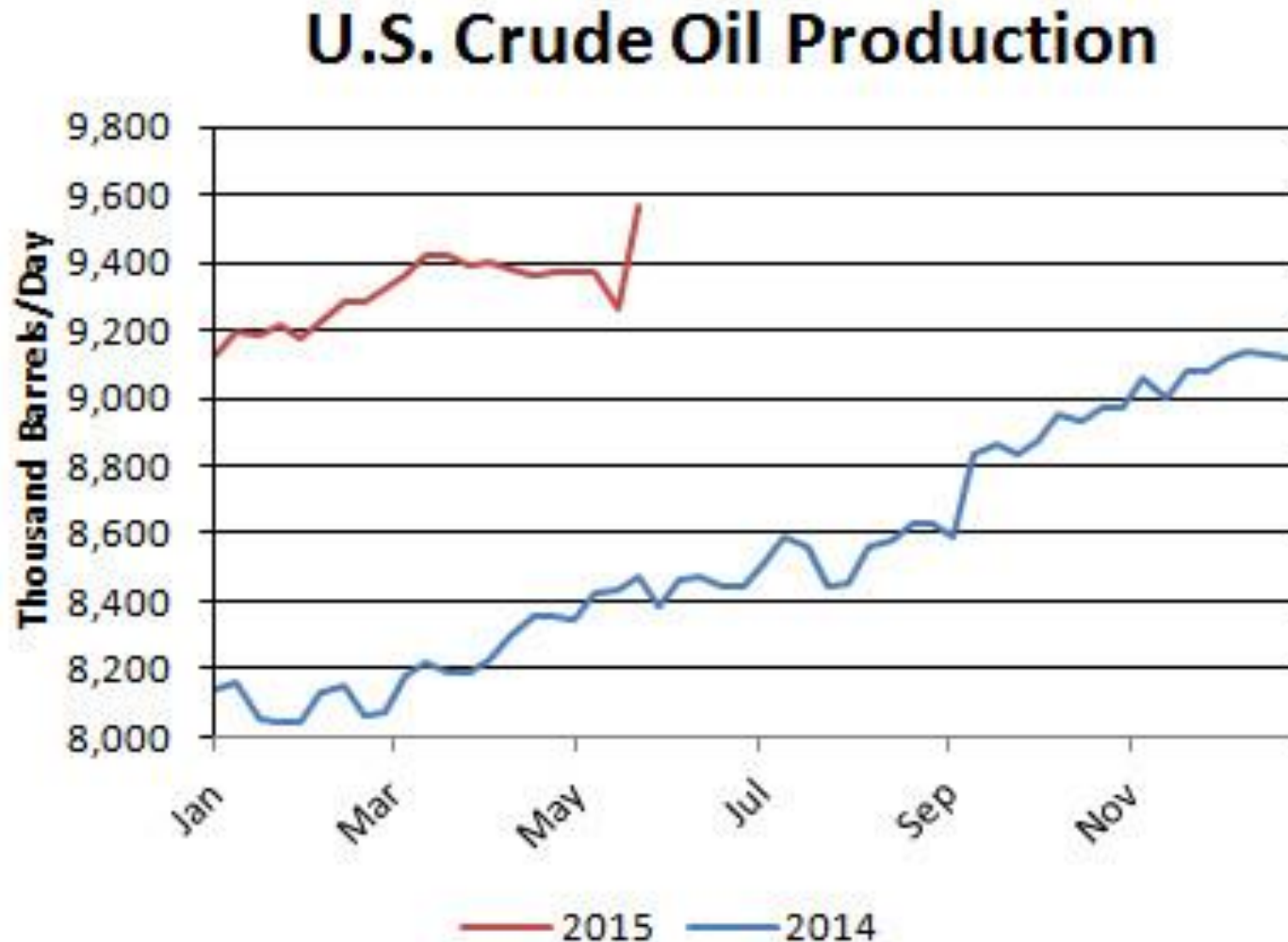
## **Supply Factors**

- OPEC vs US Shale vs Russia
- OPEC Meeting June
- National Budgets- pump for cash- especially OPEC cheaters for cash
- Individual Companies need for cash flow
- Seasonality- Hurricane season started June 1

# OIL: WW Supply, Demand & Brent Price

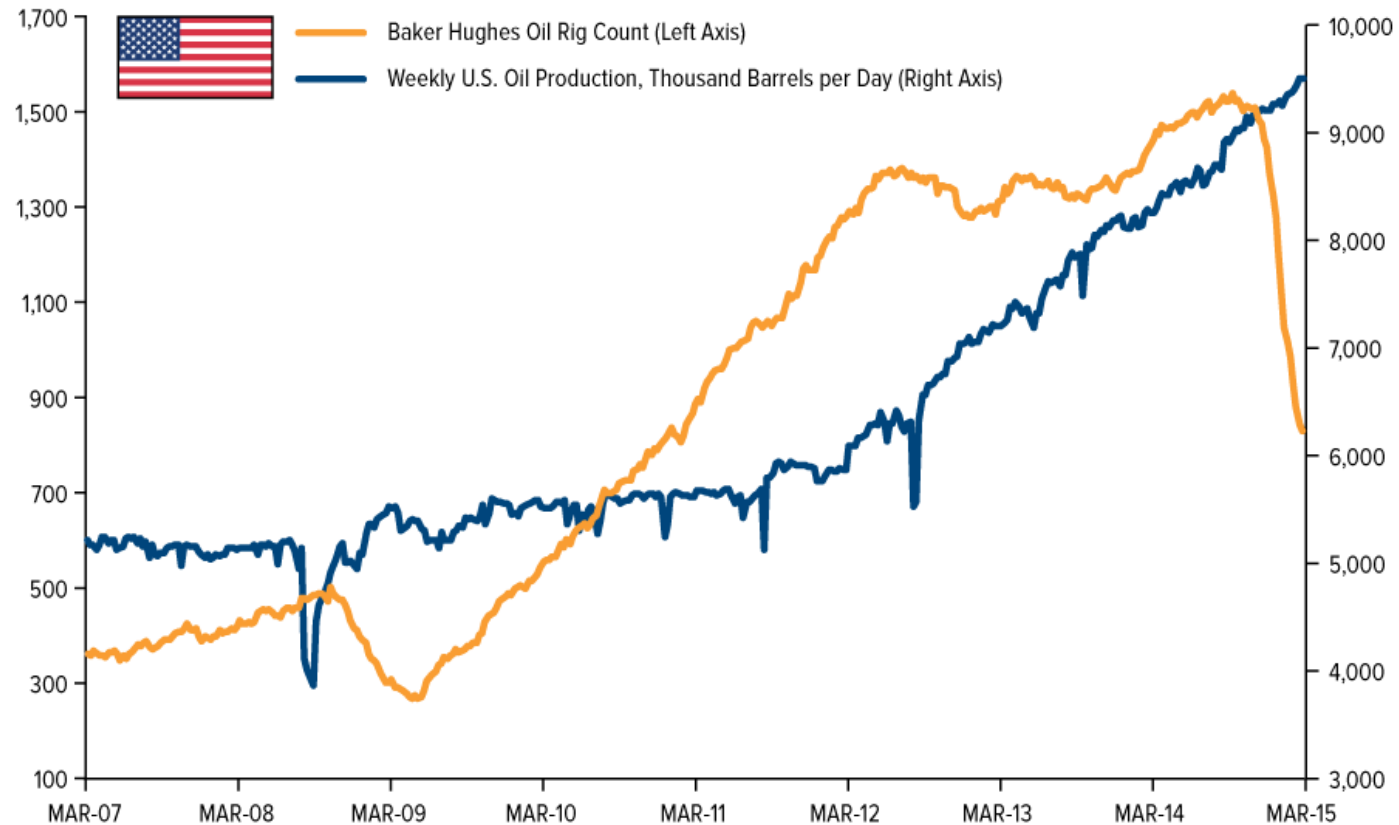


# OIL: US Oil Production Continues to Ramp Up



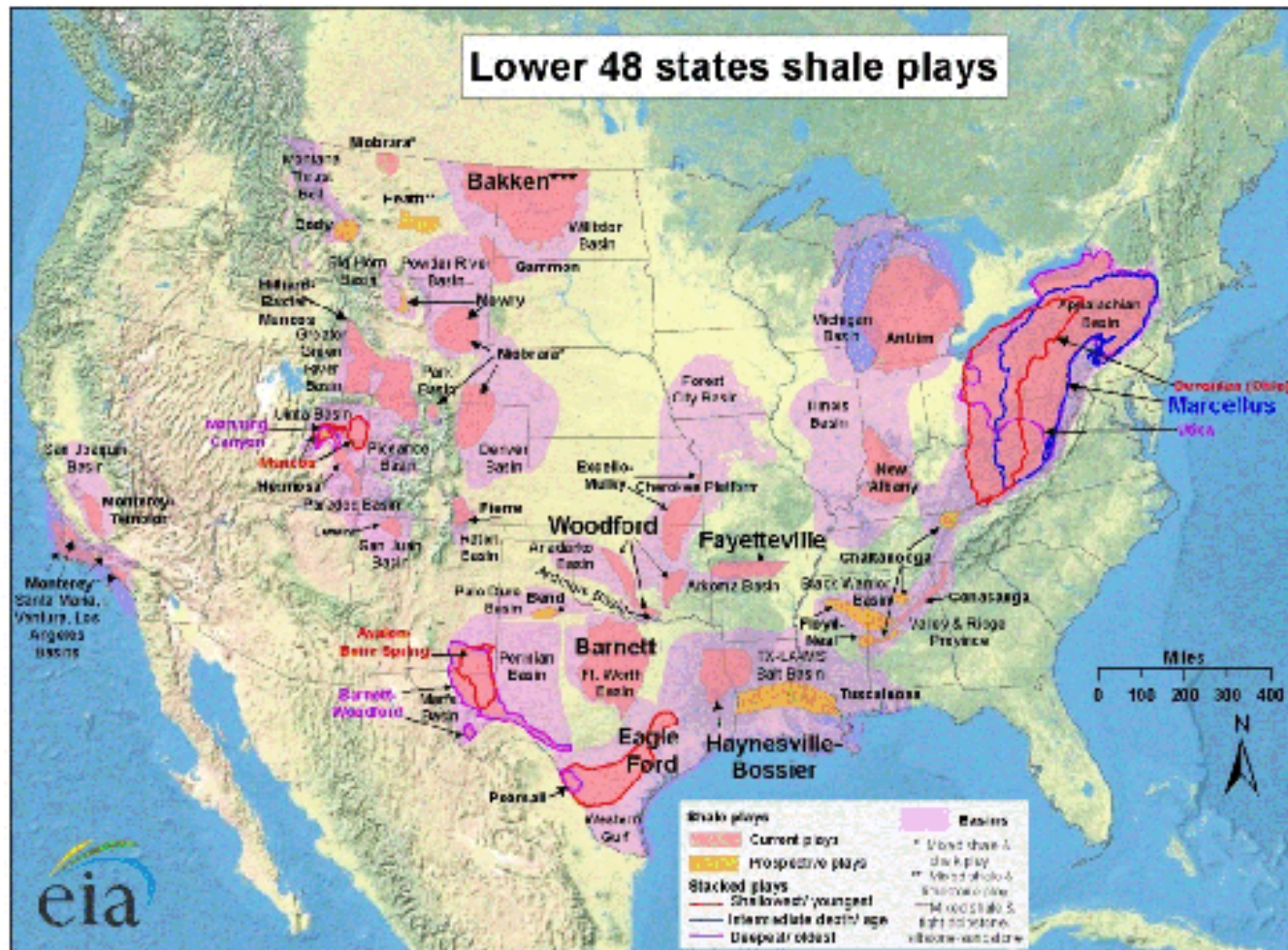
# OIL: US Shale is Pumping While Rig Count Falls

**U.S. Rig Count Falls for Fifteenth Week, but Oil Production Continues to Climb**



Past performance does not guarantee future results. **Source:** Bloomberg, U.S. Energy Information Administration, U.S. Global Investors

# OIL: US Shale Basins

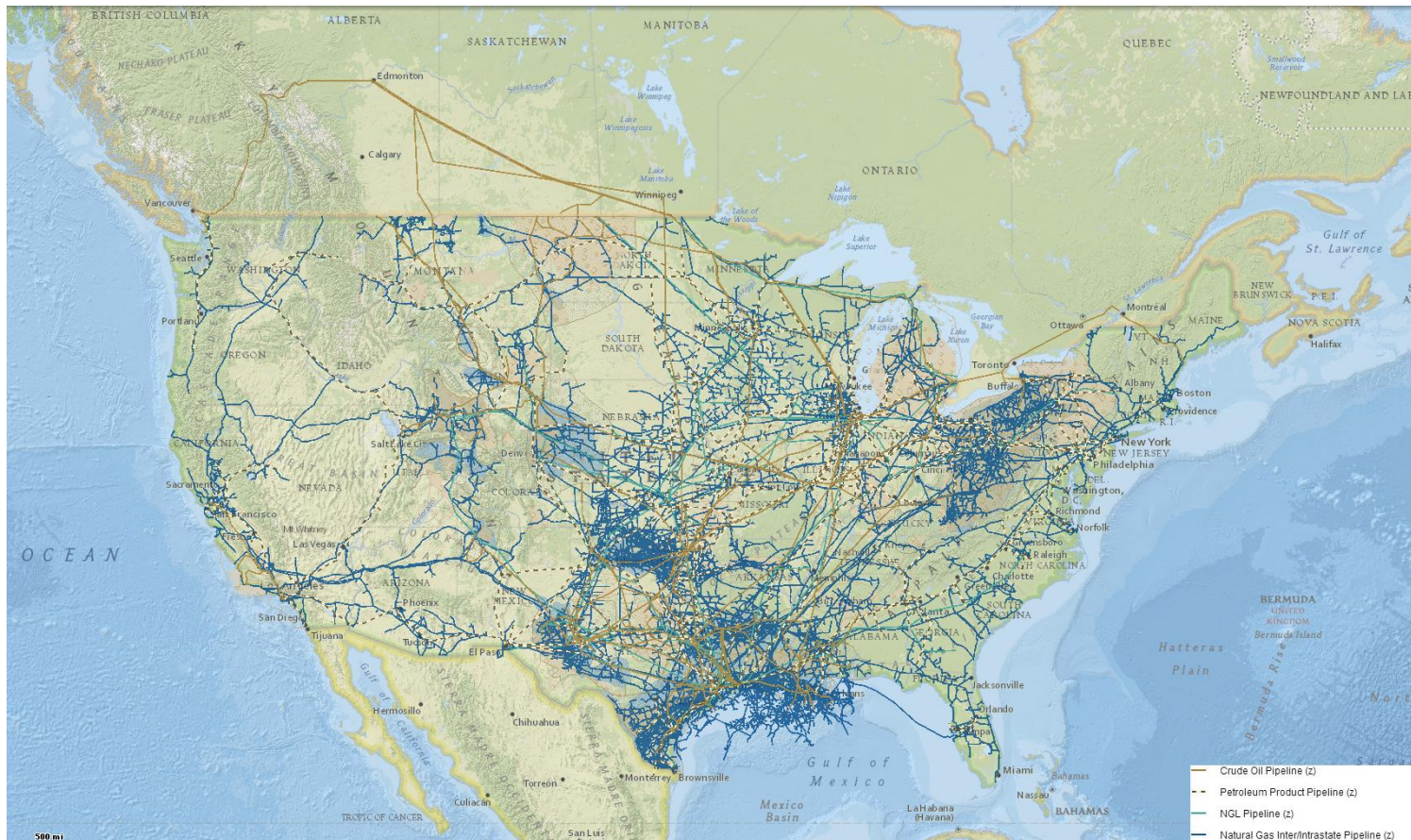


# OIL: Where is All that Oil Going?

- Storage- where is it?
  - On the Sea- Tanker rates up indicate they are filling up
  - Refineries- its driving season now
  - Pipelines
  - Distribution- Railcars & Trucks
  - Refined Products- at your gas station & in your gas tank
- And tank farms- notably Cushing, Ok
- Note: It costs to rent Storage & Storage is “filling up”. Cost can be a few cents/mo to a few \$/mo

# OIL: Storage- Where to put it in Oversupply

- All Roads lead to Cushing



# OIL: Storage in Cushing, Ok

- Oil moves tends to move South for Refining at the Gulf Coast
- Crude Oil cannot be exported
- Refined products can be exported
- Cushing is the key crude oil storage hub & capacity is an indicator for US supply & future prices

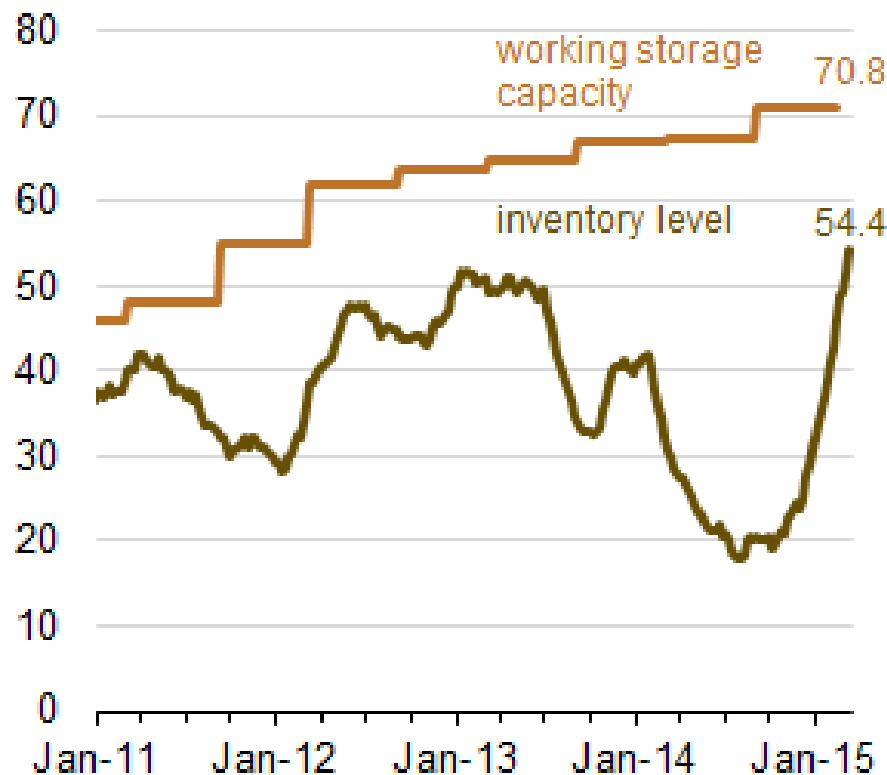
- A view of Cushing



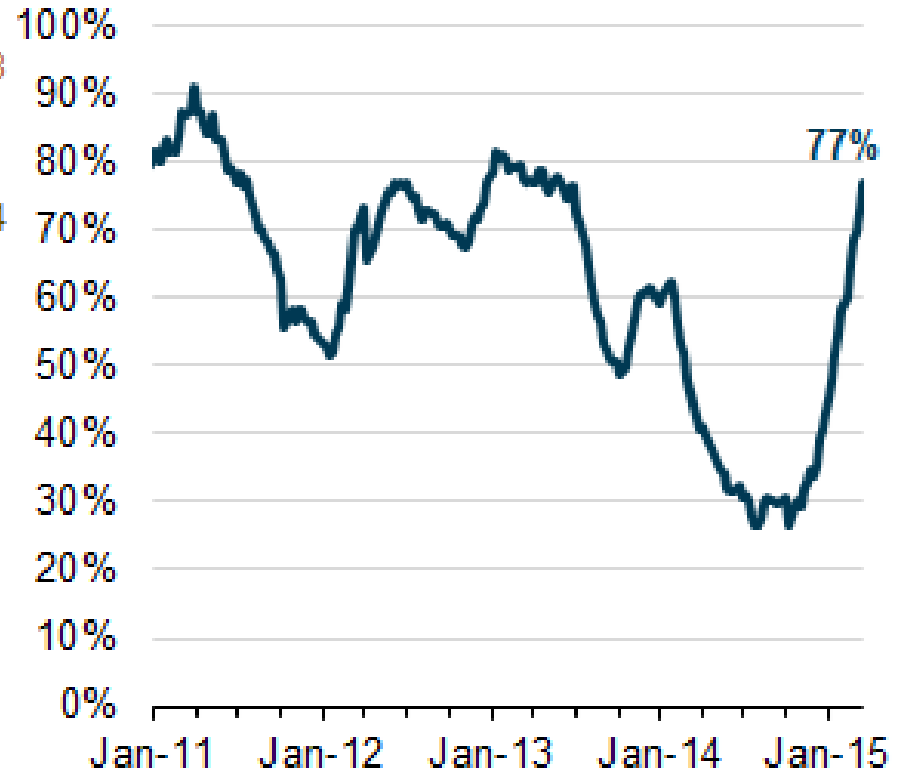
# OIL: What's happening in Cushing?

It is filling up- so that may presage a turn in Oil prices

Weekly crude oil inventory and storage capacities at Cushing, Oklahoma  
million barrels



utilization (percent)



# OIL: Stealth Storage> Partially Completed Wells

<http://www.bloomberg.com/professional/blog/great-divergence-rig-counts-vs-uncompleted-wells/>

Ref Bloomberg 3/4/2015

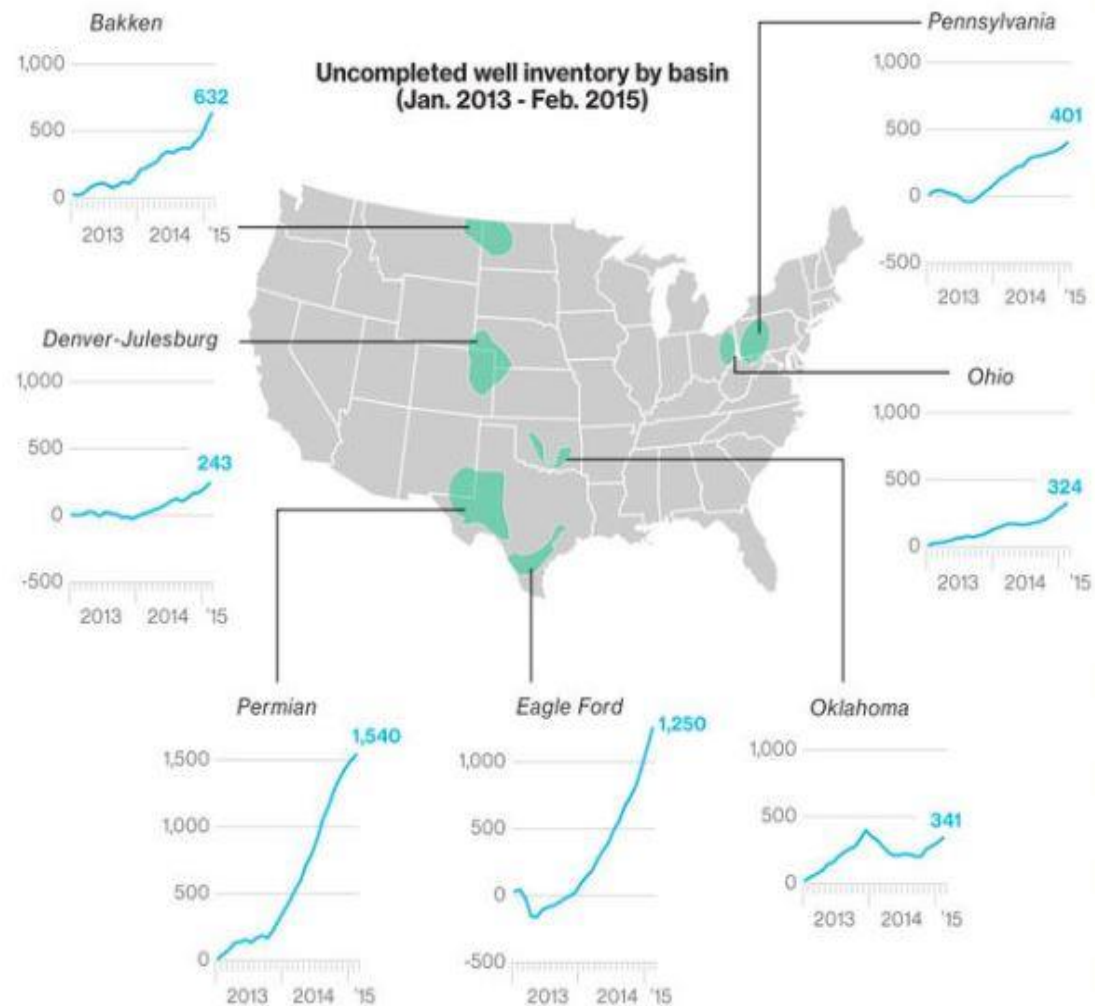
- WOC/DUC wells are partially completed
- Taken to cement casing phase of drilling
- Allows the oil to stay in place so storage is still in the well
- This shortens time to complete when prices revive, reduces near term cost and cost of downstream storage
- And some of these have been waiting for PIPELINES to connect to for distribution
- A Coiled Spring for supply..
- What does this mean for traditional indicators? Less important, especially rig count
- It also means that US supply of WTI can come back quickly as prices are more favorable
- Extract from Ref >  
*“ Bakken rigs have fallen 25% to 132 while crude output has risen 18%.”*

# OIL: Uncompleted Well Map- Trending Up

<http://www.oilandgaslawyerblog.com/2015/04/backlog-of-drilled-but-uncompleted-wells-skyrockets.html>

## Untapped Well Inventory Builds Across U.S.

Since oil prices began to slide in 2014, U.S. energy companies have delayed completing wells.

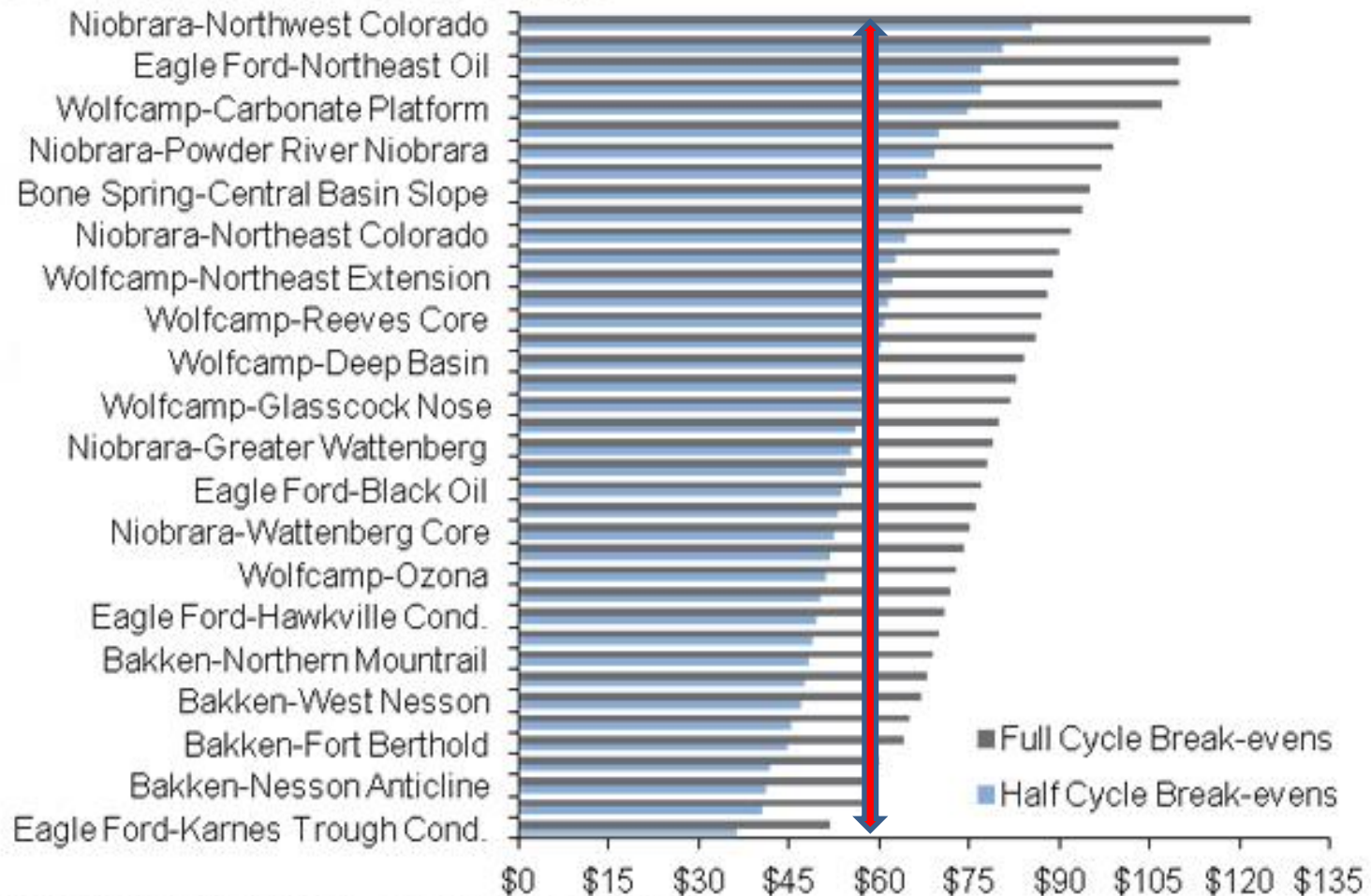


Source: Bloomberg Intelligence

Bloomberg Graphics

# OIL: Breakeven Costs Vary Widely by Region

## US Shale field Break-evens



Source: Wood Mackenzie, JPMAM as of 12/3/2014

# OIL: Investing Landscape

< Its like a box of chocolates >

- Oil as a commodity
- Petro based Companies
- Servicers
- Pipelines
- Transportation
- Consumers
- Nations
- Banks

# OIL: The Commodity

- Want Oil? buy a futures contract
  - First, understand **Contango** and **Backwardation**
    - The futures curves offer clues sentiment of future oil prices
    - **Contango pricing means traders expect higher prices in the future-** often leads to higher production and the need for more storage which costs money to store. It likely means that oil is in an oversupply position
    - **Backwardation is the opposite- a downsloping forward price curve means that oil is in demand now and less so in the future.** So prices are higher now and demand for storage is nil. Oil is perceived to be in undersupply
    - If you **bought** a CONTRACT make space to store the oil if your contract goes to close. You bought it and will you need to prepare for delivery
    - **(One Light, Sweet Crude Oil futures contract on the New York Mercantile Exchange is 1,000 U.S. barrels (42,000 gallons)**

# OIL: More on Oil Futures

- Read this about Contango >
  - <http://www.forbes.com/sites/gauravsharma/2015/02/13/oil-storage-rush-takes-two-to-play-contango/>
- Investopedia explains Contango and Backwardation
  - [http://www.investopedia.com/articles/07/contango\\_backwardation.asp](http://www.investopedia.com/articles/07/contango_backwardation.asp)
- The Kahn Academy has another way to explain it >
  - Google/Bing search for Kahn Academy Contango/Backwardation for a tutorial on the futures contract theory

# OIL: The June 2015 WTI Contract

< About to expire week 3 June '15, note the volume >



# OIL: USO, The US Oil Fund (WTI), 50 & 200 Day SMA

## <Deeply flawed because of the nature of futures>



# OIL: BNO, US Brent, 50 & 200 day SMA

6/1/2015

BNO Interactive Stock Chart | Yahoo! Inc. Stock - Yahoo! Finance

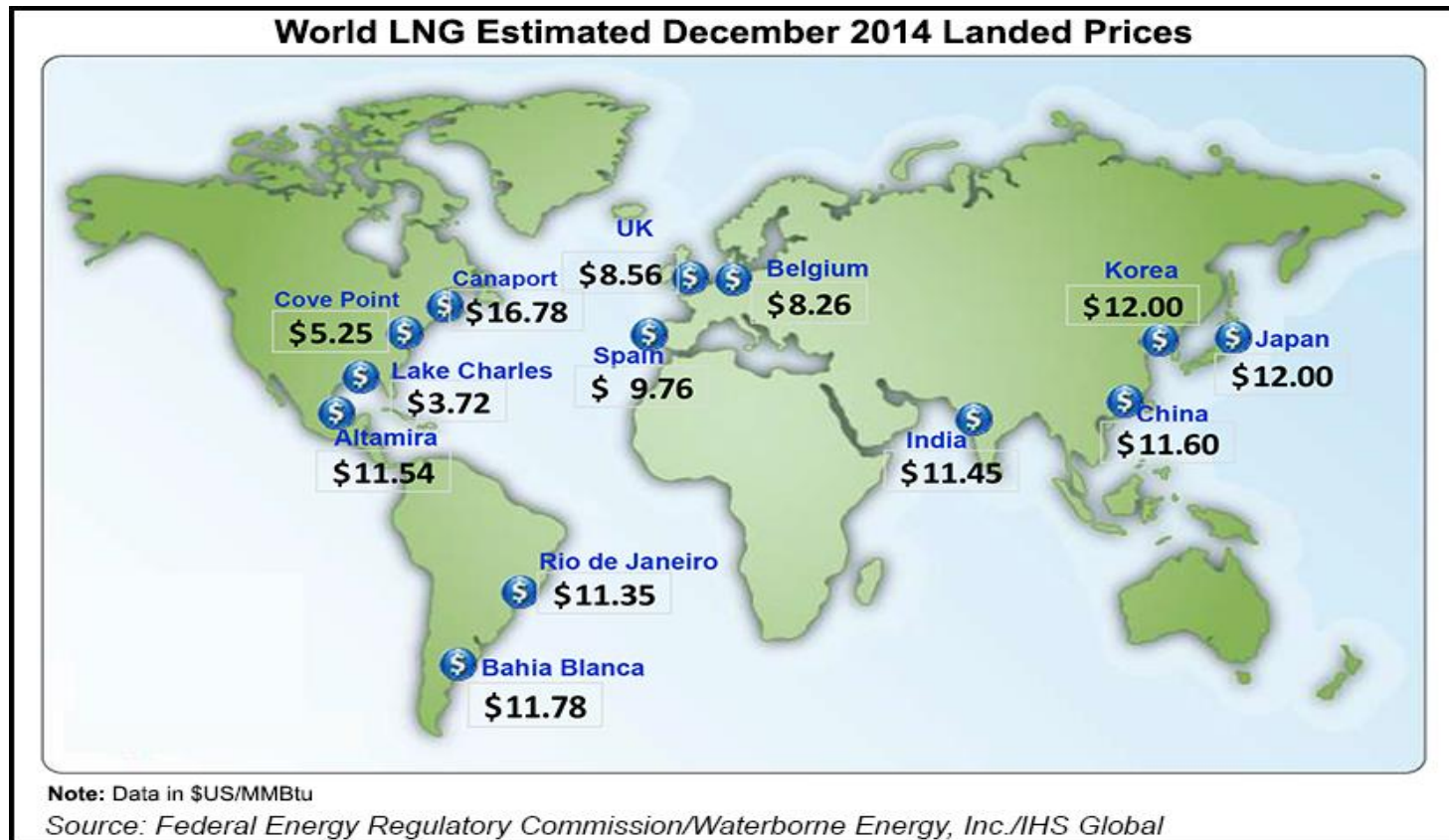
United States Brent Oil ETF (BNO) ★ Watchlist

**23.40** **-0.15(-0.64%)** NYSEArca - As of 4:00PM EDT



# OIL: Natural Gas- A Perspective

- We have the cheapest natural gas in the World

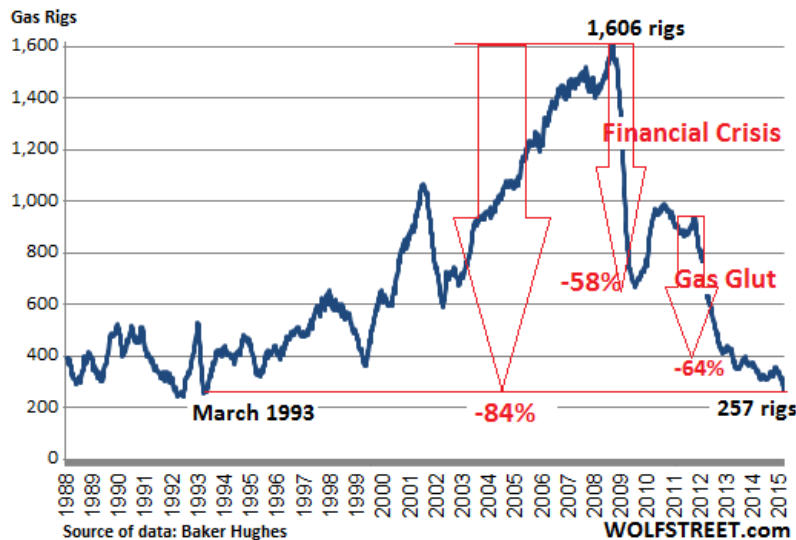


# OIL: Cousin Natural Gas

Rig counts, the Henry Hub (like Cushing for Nat gas)

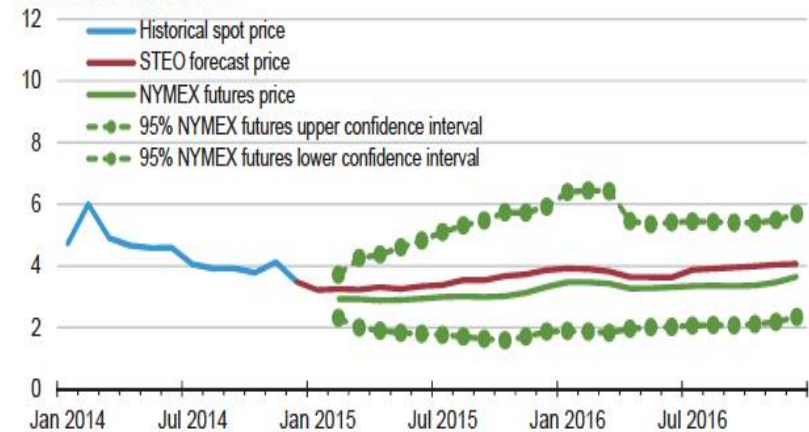
## Rigs Drilling For Natural Gas in the US

1988 - 2015



## Henry Hub Natural Gas Price

dollars per million Btu



Note: Confidence interval derived from options market information for the 5 trading days ending Jan. 8, 2015. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Source: Short-Term Energy Outlook, January 2015.

# Oil: XLE 10 yrs vs 50 & 200 Day SMA

6/1/2015

XLE Interactive Stock Chart | Yahoo! Inc. Stock - Yahoo! Finance

The Select Sector SPDR Trust - The Energy Select Sector SPDR Fund (XLE) ★ Watchlist

**78.19** **-0.20(-0.26%)** NYSEArca - As of 4:00PM EDT

After Hours: **78.13** **+0.06(0.08%)** 6:29PM EDT



# Oil: FSENX 10 yrs vs 50 & 200 Day SMA

6/1/2015

FSENX Interactive Stock Chart | Yahoo! Inc. Stock - Yahoo! Finance

Fidelity Select Energy Portfolio (FSENX) ★ Watchlist

**46.03** -0.09(-0.20%) NASDAQ - As of Jun 01 15



# Oil: VGENX 10 yrs vs 50 & 200 Day SMA

6/1/2015

VGENX Interactive Stock Chart | Yahoo! Inc. Stock - Yahoo! Finance

Vanguard Energy Inv (VGENX) ★ Watchlist

**54.44** **-0.17(-0.31%)** NASDAQ - As of Jun 01 15



# OIL: IXC vs XLE over 10 Years

< IXC is the iShares Global Energy ETF, underperforms XLE >

6/3/2015

IXC Interactive Stock Chart | Yahoo! Inc. Stock - Yahoo! Finance

iShares Trust - iShares Global Energy ETF (IXC) ★ Watchlist

**36.86** -0.12 (-0.32%) NYSEArca - As of 4:00PM EDT



# Oil: FSESX 10 yrs vs 50 & 200 Day SMA

6/1/2015

FSESX Interactive Stock Chart | Yahoo! Inc. Stock - Yahoo! Finance

Fidelity Select Energy Service Port (FSESX) ★ Watchlist

**57.08** **-0.10(-0.17%)** NASDAQ - As of Jun 01 15



# OIL: RYE (Equal Weight Petro) vs 50 & 200 day SMA

6/1/2015

RYE Interactive Stock Chart | Yahoo! Inc. Stock - Yahoo! Finance

Guggenheim S&P 500 Equal Wt Energy ETF (RYE) ★ Watchlist

**67.57** -0.44(-0.65%) NYSEArca - As of 4:00PM EDT



# OIL: FSNGX vs 50 & 200 Day SMA

6/1/2015

FSNGX Interactive Stock Chart | Yahoo! Inc. Stock - Yahoo! Finance

Fidelity Select Natural Gas Portfolio (FSNGX) ★ Watchlist

**32.44** -0.21(-0.64%) NASDAQ - As of Jun 01 15



# OIL: IYT (Transports) vs 50 & 200 DAY SMA

< Note- beware divergence per DOW Theory>

6/1/2015

IYT Interactive Stock Chart | Yahoo! Inc. Stock - Yahoo! Finance

iShares Trust - iShares Transportation Average ETF (IYT) ★ Watchlist

**150.76** **+1.62(+1.09%)** NYSEArca - As of 4:00PM EDT



# OIL: Refiners, Tesoro, Valero & Phillips 66

6/1/2015

TSO Interactive Stock Chart | Yahoo! Inc. Stock - Yahoo! Finance

Tesoro Corporation (TSO) ★ Watchlist

**87.64** **-0.86 (-0.97%)** NYSE - As of 4:02PM EDT

After Hours: **88.36** **↑+0.72 (0.83%)** 4:33PM EDT



# OIL: Kansas City Southern vs 50 & 200 Day SMA

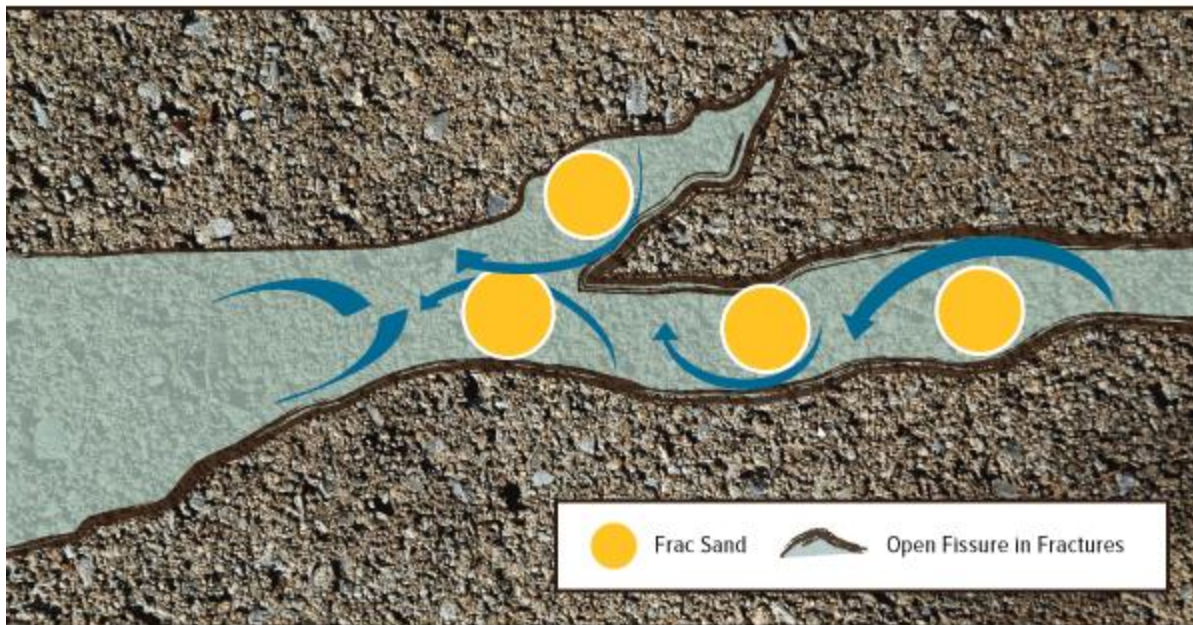
< 4/21/15: KSU reported Energy Sector profits fell 50%, 6 ½ % EPS Miss >



# OIL: Fracking Sand

- Large quantities of fracking sand are required- used as a proppant in the slurry of water & chemicals
- Many Railcars per well (2500- 8000 tons of Fracking sand)

**Sand Acts As a Proppant in Hydraulic Fracturing**



Source: U.S. Global Investors

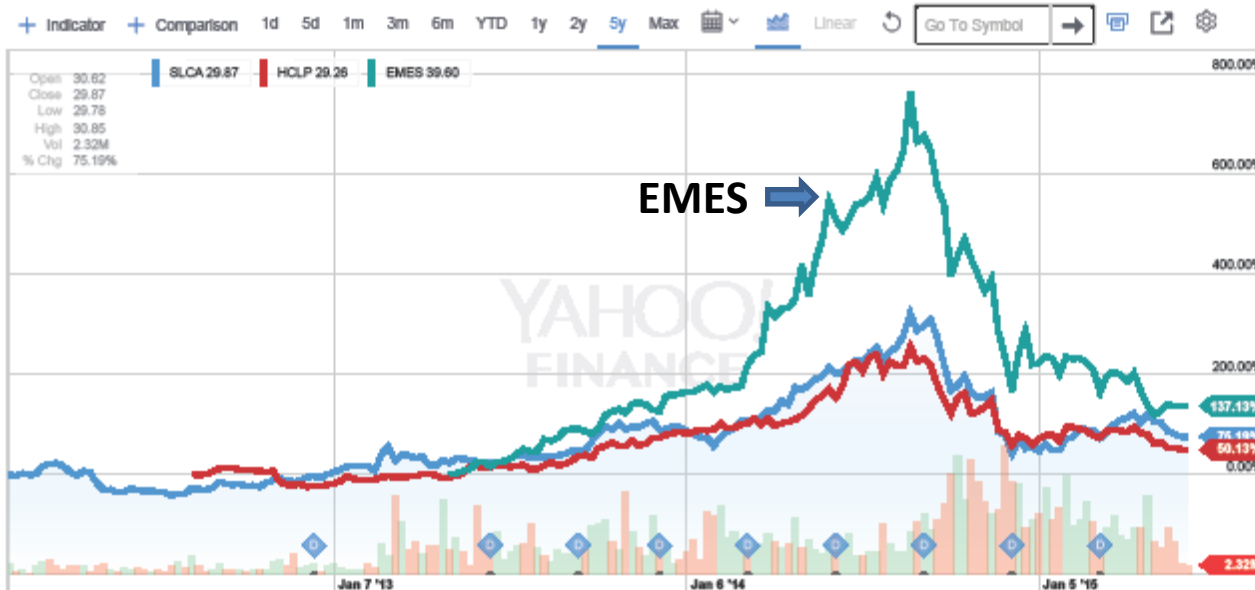
# OIL: Fracking Sand Players > EMES, SLCA, HCLP

6/1/2015

SLCA Interactive Stock Chart | Yahoo! Inc. Stock - Yahoo! Finance

U.S. Silica Holdings, Inc. (SLCA) ★ Watchlist

**29.87** -0.98 (-3.18%) NYSE - As of 4:05PM EDT



# OIL: HYG- High Yield Debt

- Almost 20% of HYG is oil & shale related debt
- If Oil plunges again
  - Weaker & smaller oil co will be stressed
  - Banks that loaned to them will be stressed, especially Texas banks

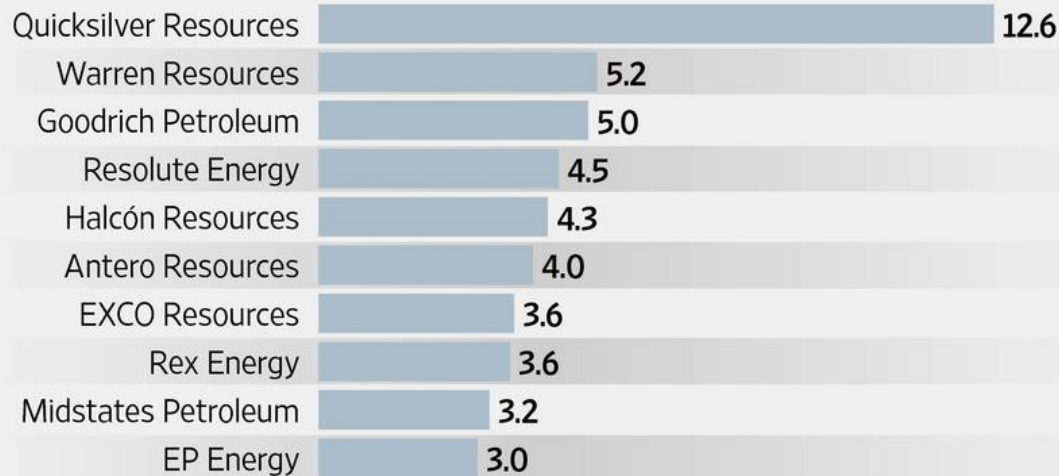


# OIL: Some Companies at Risk- a sample

## Oil Check

U.S. oil companies boomed on borrowed money. Corporate debt loads ballooned in recent years.

Ratio of net debt to EBITDA from last 12 months



Note: Publicly traded U.S. corporations with at least \$100 million in revenue over the last 12 months that are primarily focused on oil and gas production.

Source: S&P Capital IQ

Debt for U.S. oil exploration and production companies



Note: Figures exclude Chevron and Exxon Mobil; 2014 is up to the third quarter

The Wall Street Journal

# OIL: Surviving via Hedging

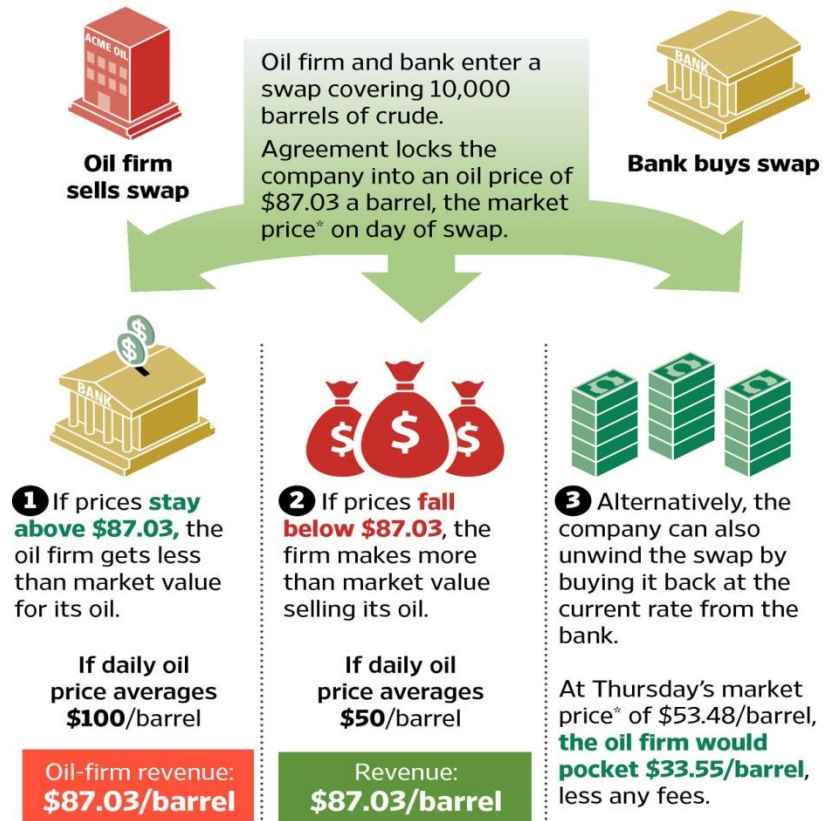
< Ref WSJ article >

- Some Companies have survived the oil price decline via hedging using options
- It's a company by company examination
- Read more at >

<http://www.wsj.com/articles/oil-companies-reap-large-gains-after-cashing-in-hedging-bets-1427397947>

## Crude Tool

Firms that sell oil sometimes hedge, or protect against future price declines, by entering swap contracts with banks and others. Here's how the arrangement can work:













\*Based on crude-oil financial futures traded on the New York Mercantile Exchange  
Source: WSJ Market Data Group (prices) **THE WALL STREET JOURNAL.**

# OIL: Bank Loan Exposure to Oil Debt

## A Boon for Banks

Lending, underwriting and advising on behalf of energy companies has been a strong business for North American banks. An expected slowdown as a result of falling oil prices may hurt banks' revenue.

### Investment banks with the highest revenue from the oil and gas sector, 2014

RANK		OIL AND GAS SECTOR INVESTMENT BANKING REVENUE IN MILLIONS	SHARE OF TOTAL INVESTMENT BANKING REVENUE
1	Citi	\$492 	11.8%
2	JPMorgan	435 	6.6
3	Bank of America Merrill Lynch	393 	7.4
4	Barclays	382 	10.7
5	Goldman Sachs	381 	7.1
6	RBC Capital Markets	376 	20.2
7	Credit Suisse	312 	8.1
8	Wells Fargo Securities	286 	14.9
9	Scotiabank	242 	34.6
10	Deutsche Bank	221 	5.1

Source: Dealogic

- Some banks in N Dakota, Ok
- Some Banks in Texas, Louisiana
  - The U.S. banks with at least \$1 billion in assets that have the greatest percentage of deposits in these regions are
  - International Bancshares ([IBOC](#)) (42.4%)
  - Guaranty Bancorp ([GBNK](#)) (39.7%)
  - Cullen/Frost Bankers ([CFR](#)) (35.9%)
  - CoBiz Financial ([COBZ](#)) (26.6%)
  - First Interstate ([FIBK](#)) (17.3%)
  - National Bank Holdings ([NBHC](#)) (16.3%)
  - All according to Morgan Stanley

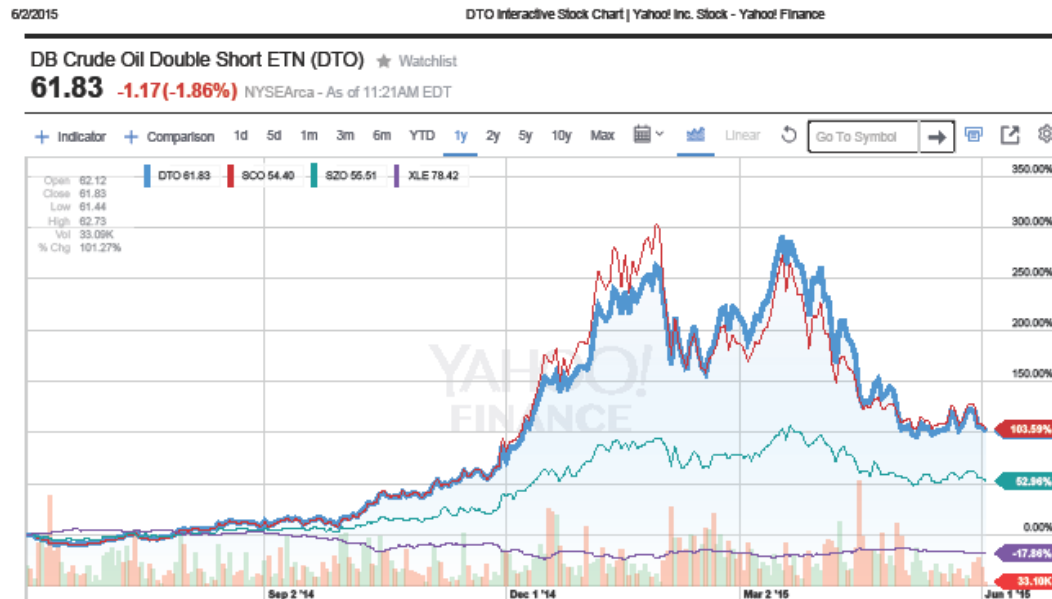
# OIL: Oil Vix (^OVX) vs XLE



# OIL: How I Protect Long Positions in Oil Stocks

< This is a trading position, not an investment >

- Shorting Oil on a downside (Very Volatile), depends on persistence to work well
  - ETFs
    - SZO DB Short ETN, very poor volume- avoid
    - SCO ultra Short WTI Index, good volume, looks OK
    - I USED > DTO- Double short WTI, good volume, tight stop. Worked well



# OIL: Tracking the Oil Market – There is a wealth of data available

- **Tickers:** Yahoo! Finance, Morningstar, Value Line
- Good commentary from “Market Realist”- gives a multi part commentary
  - <http://marketrealist.com/2015/06/crude-oil-prices-increase-opecs-meeting/>
- **EIA-** The US Energy Information Administration
  - <http://www.eia.gov/>
- **IEA-** International Energy Agency
  - <https://www.iea.org/>
- **Weekly US Oil Inventory** (EIA data, Wed) & **Rig Count data** (Baker Hughes, Friday)
  - Oil moves on these reports, especially the Wed inventory data

# OIL: Is the Saudi game killing US Shale?

< Per Andy Lipow, Lipow Associates on CNBC 5/5/15

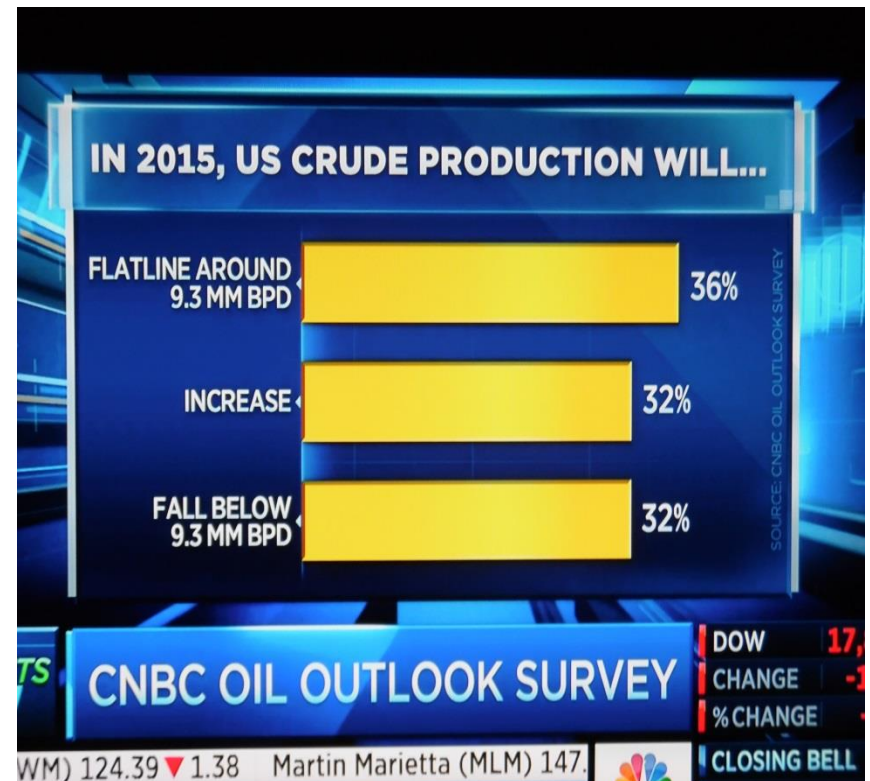
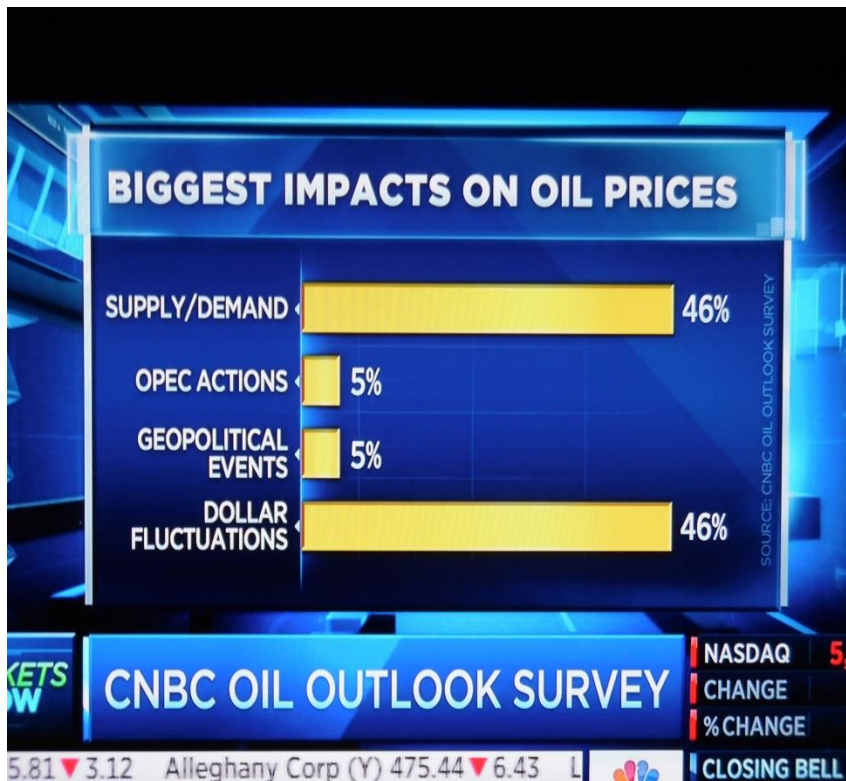
- Short answer- NO
- Its impacting, not killing
- Technology is saving US Shale
- Lots of flexibility
- The losers at these price levels & lower
  - Long term expensive projects
  - North Sea
  - Canadian Oil sands
  - Deepwater
  - Servicers not under contract
  - Banks with Oil debt exposure

# OIL: A Sentiment Snapshot CNBC 6/4/15

“These survey results represent the opinions of 22 of the world’s top energy analysts and strategists. They responded to CNBC’s invitation to participate in our online survey. Their responses were collected on May 29 through June 2, 2015.” Not scientific etc..

---

“Their average forecast for West Texas Intermediate oil for year end is \$60.80, while they expect Brent to reach \$65.91 per barrel. By the end of 2016, they expect roughly a \$10 per barrel increase in each over 2015 levels.”



# OIL: Where are oil prices headed?

## < IMHO >

- It Depends
- Iran Deal ?? End June Check
- WW Demand
- US Dollar (the economy, rates etc)
- Survival instincts..
- Seasonal factors
- It's a game of chicken on supply-
  - Saudis
  - Other OPEC
  - Russia
  - US Shale
- I Expect a short term cap on prices somewhere around \$65 and a low around low \$40s if all pump & the USD strengthens. Net, high degree of uncertainty & volatility
- Industry consolidation as assets are sold off to preserve cash + M&A
- Likely a trading not an investing environment

# Oil: Investing Vehicle Summary

- Oil is not directly investible except via futures
- Oil is inherently volatile
- Oil proxies are volatile
- Oil prices are linked to a number of key factors, the USD, & supply/demand etc
- The economies of the world are dramatically affected by oil price
- The Middle East is unstable & Geopolitical events are difficult to predict
- The US shale revolution has made a big impact & is a swing producer
- There are many other industries tied to the fortunes of oil
- The volatility in Oil proxies present opportunity on Oil upside & downside
- Oil proxies can be very poor investments, can rebound
- There will be M&A as the weaker fall & the stronger feast
- Understand the levers, Invest wisely, expect lots of ^OVX, & MONITOR
- PS: Einhorn's Greenlight Capital is short many key Shale names as of April



# OIL: Other Data Follows

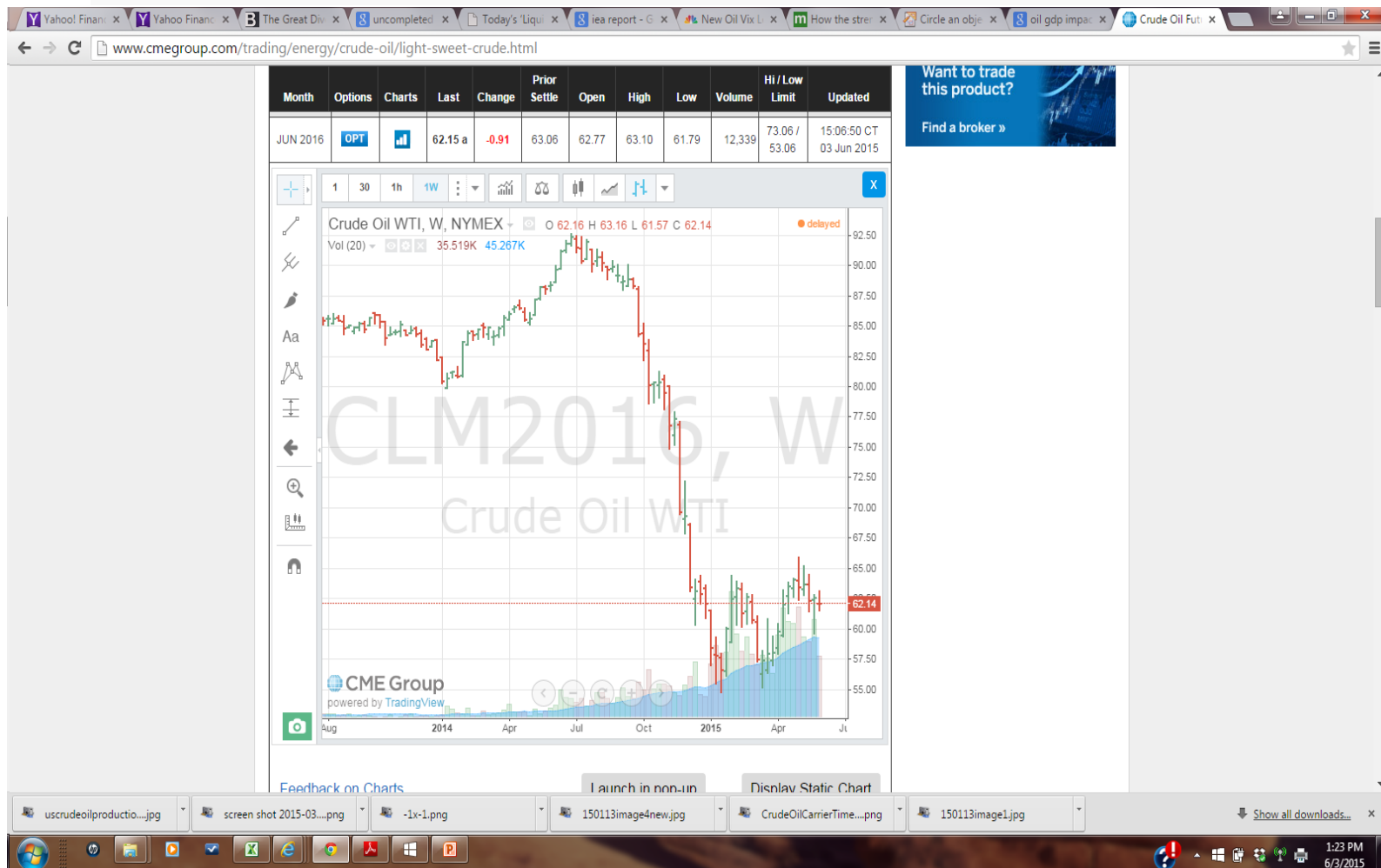
- Bed Time Reading

# OIL: WTI June '16 Futures Vs WTI Close 06/032015

CLN15.NYM

Crude Oil Jul 15

**\$59.61**



# OIL: In Contango >

6/5/2015

CLN15.NYM Futures Chain | Crude Oil Jul 15 Stock - Yahoo! Finance

Crude Oil Jul 15 (CLN15.NYM) - NY Mercantile ☐ Watchlist

58.950.95(1.64%)3:45PM EDT

Add to Portfolio

Futures Chain

Get Futures Chain for:

Symbol	Name	Last Trade	Change
CLN15.NYM	Crude Oil Jul 15	58.95 3:45PM EDT	0.95 (1.64%)
CLQ15.NYM	Crude Oil Aug 15	59.38 3:45PM EDT	1.04 (1.78%)
CLU15.NYM	Crude Oil Sep 15	59.71 3:45PM EDT	1.09 (1.86%)
CLV15.NYM	Crude Oil Oct 15	59.90 3:40PM EDT	1.06 (1.80%)
CLX15.NYM	Crude Oil Nov 15	60.27 3:33PM EDT	1.10 (1.86%)
CLZ15.NYM	Crude Oil Dec 15	60.63 3:42PM EDT	1.10 (1.85%)
CLF16.NYM	Crude Oil Jan 16	60.97 3:26PM EDT	1.11 (1.85%)
CLG16.NYM	Crude Oil Feb 16	61.21 3:27PM EDT	1.09 (1.81%)
CLH16.NYM	Crude Oil Mar 16	61.43 3:27PM EDT	1.09 (1.81%)
CLJ16.NYM	Crude Oil Apr 16	61.65 3:28PM EDT	1.10 (1.82%)
CLK16.NYM	Crude Oil May 16	61.85 3:29PM EDT	1.09 (1.79%)
CLM16.NYM	Crude Oil Jun 16	62.05 3:34PM EDT	1.09 (1.79%)
CLN16.NYM	Crude Oil Jul 16	60.95 1:03PM EDT	0.14 (0.23%)
CLQ16.NYM	Crude Oil Aug 16	62.80 1:03PM EDT	1.58 (2.58%)
CLU16.NYM	Crude Oil Sep 16	62.45 1:03PM EDT	1.08 (1.76%)
CLV16.NYM	Crude Oil Oct 16	63.40 1:03PM EDT	1.86 (3.02%)
CLX16.NYM	Crude Oil Nov 16	63.09 1:03PM EDT	1.35 (2.19%)
CLZ16.NYM	Crude Oil Dec 16	63.02 3:42PM EDT	1.09 (1.76%)
CLG17.NYM	Crude Oil Feb 17	63.51 Apr 17	0.29 (0.45%)
CLJ17.NYM	Crude Oil Apr 17	63.36 1:03PM EDT	0.92 (1.47%)
CLM17.NYM	Crude Oil Jun 17	63.90 2:56PM EDT	1.07 (1.70%)
CLN17.NYM	Crude Oil Jul 17	64.13 Apr 17	23.86 (36.90%)
CLZ17.NYM	Crude Oil Dec 17	64.86 2:56PM EDT	1.06 (1.66%)
CLM18.NYM	Crude Oil Jun 18	64.47 1:03PM EDT	0.10 (0.15%)
CLZ18.NYM	Crude Oil Dec 18	66.64 2:53PM EDT	1.10 (1.68%)
CLZ19.NYM	Crude Oil Dec 19	67.35 1:03PM EDT	0.47 (0.70%)
CLZ20.NYM	Crude Oil Dec 20	67.80 1:03PM EDT	0.08 (0.12%)

# OIL: Selected Energy ETF Data from Fidelity Research

ETFs From Across the Oil Patch						Percentage of Industry Exposure for Various Equity Energy Sector ETFs							
	Ticker	AUM (\$Mil)	Average Market Cap (\$Bil)	Expense Ratio %	Number of Stocks		Ticker	Drillers	E&P	Equip & Services	Integrated	Pipelines	Refiners
iShares Global Energy	IXC	1,091	70	0.48	83	iShares Global Energy	IXC	1.27	24.22	9.42	49.04	8.60	5.18
iShares U.S. Energy	IYE	2,210	57	0.45	93	iShares U.S. Energy	IYE	2.22	30.30	15.61	33.04	10.04	7.62
Fidelity MSCI Energy	FENY	289	53	0.12	165	Fidelity MSCI Energy	FENY	1.93	31.01	15.84	32.42	10.49	7.78
Vanguard Energy	VDE	4,816	56	0.12	162	Vanguard Energy	VDE	1.92	30.15	15.53	33.39	10.58	8.05
Energy Select Sector SPDR	XLE	13,131	58	0.15	41	Energy Select Sector SPDR	XLE	1.64	33.54	16.35	28.43	10.58	9.33
First Trust Energy AlphaDEX	FXN	662	7	0.67	61	First Trust Energy AlphaDEX	FXN	17.23	46.28	11.50	4.29	4.17	13.80
Guggenheim S&P 500 Equal Weight Energy	RYE	151	18	0.40	41	Guggenheim S&P 500 Equal Wt Energy	RYE	12.90	46.94	14.38	4.65	12.10	9.02
SPDR S&P Oil & Gas Explor & Production	XOP	1,698	4	0.35	70	SPDR S&P Oil & Gas Explor & Prod	XOP	1.16	71.81	1.34	2.50	2.56	13.87
iShares U.S. Oil & Gas Explor & Production	IEO	500	20	0.45	73	iShares U.S. Oil & Gas Explor & Prod	IEO	0.21	73.54	0.18	0.00	4.43	21.57
SPDR S&P Oil & Gas Equipment & Services	XES	253	3	0.35	45	SPDR S&P Oil & Gas Equip & Services	XES	27.38	0.00	66.51	0.00	1.91	0.00
Market Vectors Oil Services	OIH	1,250	15	0.35	25	Market Vectors Oil Services	OIH	24.54	0.00	71.67	0.00	0.00	0.00
iShares U.S. Oil Equipment & Services	IEZ	344	11	0.45	48	iShares U.S. Oil Equipment & Services	IEZ	18.17	0.00	78.92	0.00	0.51	0.00

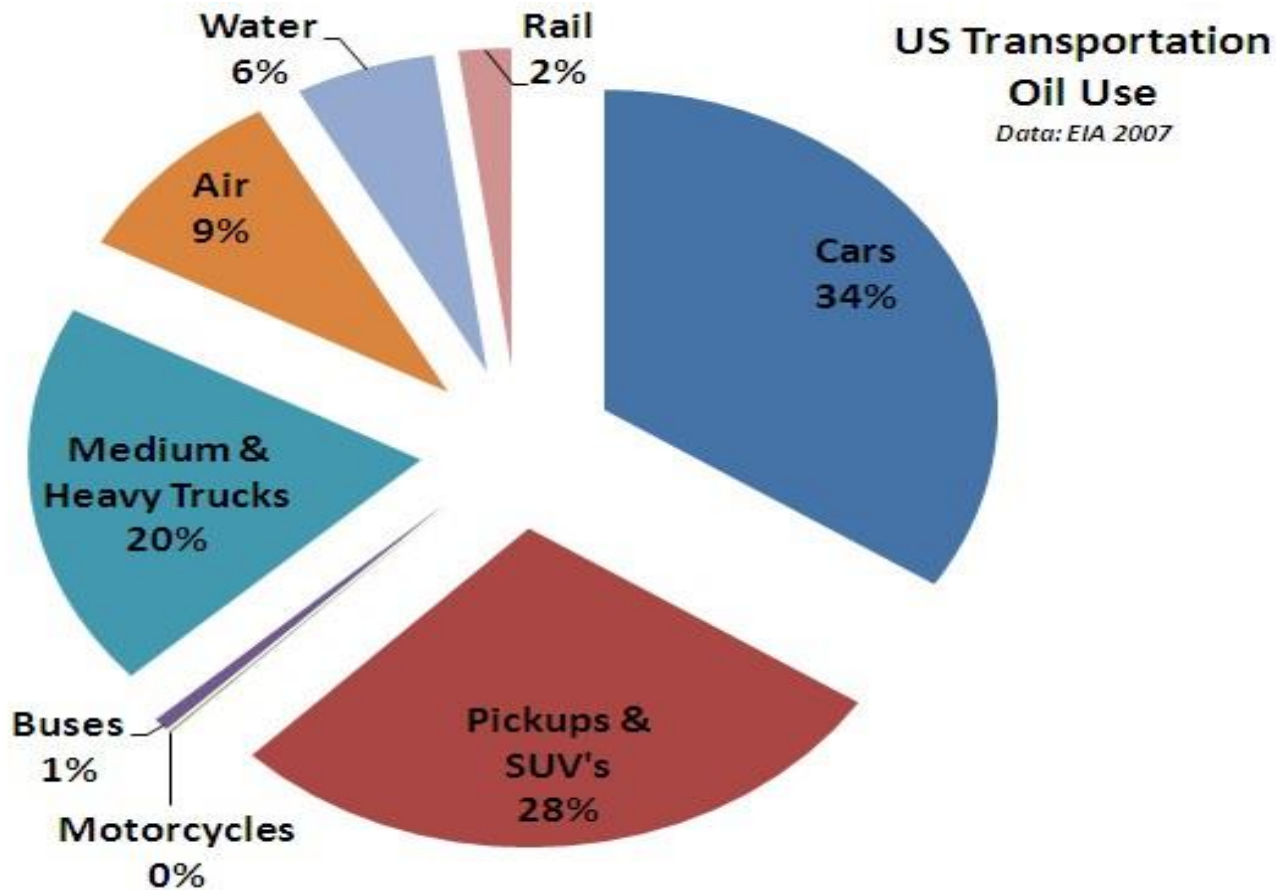
Source: Morningstar Direct.

Source: Morningstar Direct.

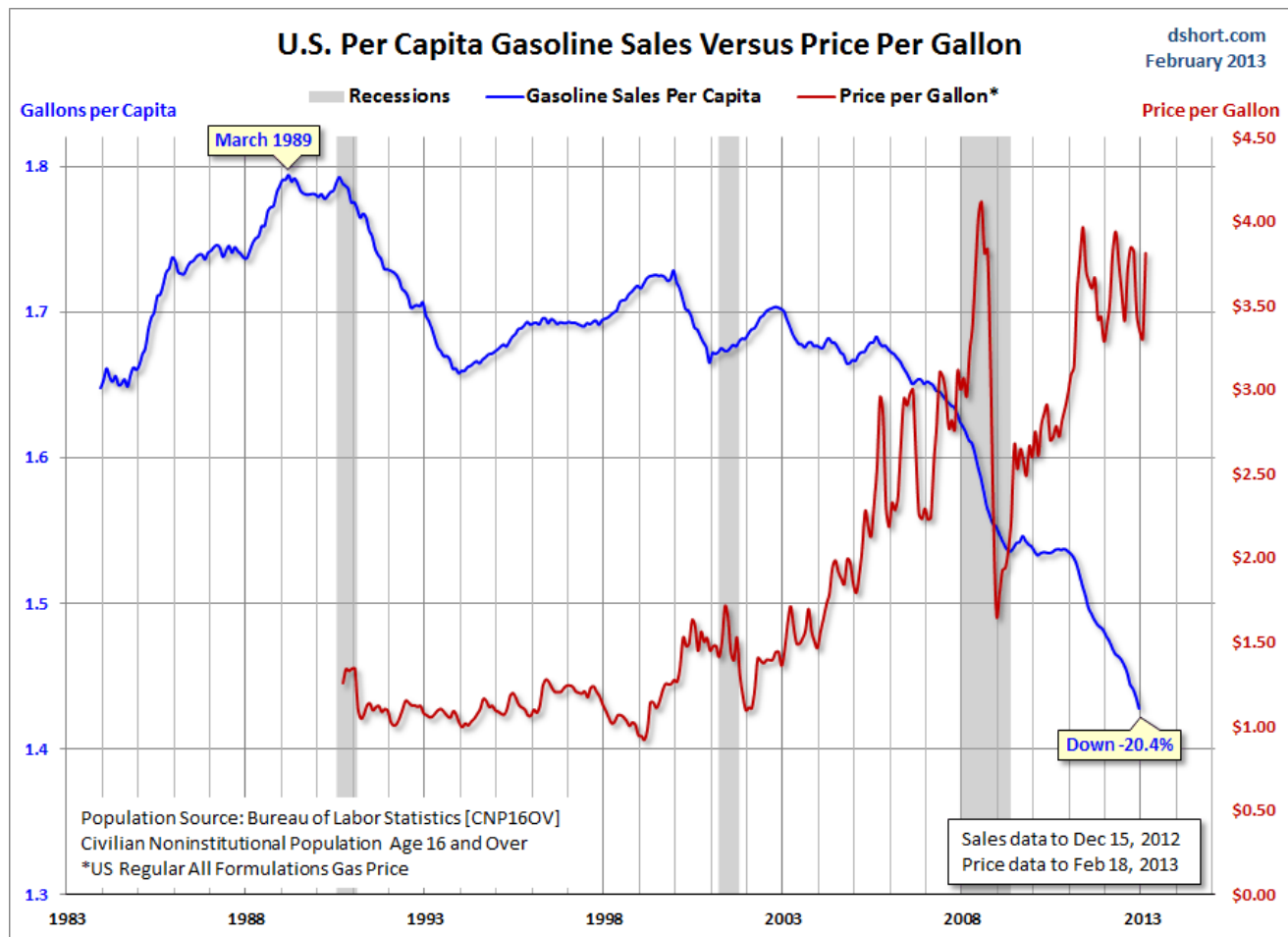
# OIL: Partitioning the industry

- The Largest: [https://biz.yahoo.com/ic/120\\_cl\\_all.html](https://biz.yahoo.com/ic/120_cl_all.html)
- [http://en.wikipedia.org/wiki/List\\_of\\_largest\\_oil\\_and\\_gas\\_companies\\_by\\_revenue](http://en.wikipedia.org/wiki/List_of_largest_oil_and_gas_companies_by_revenue)
- Exploration: [http://en.wikipedia.org/wiki/List\\_of\\_oil\\_exploration\\_and\\_production\\_companies](http://en.wikipedia.org/wiki/List_of_oil_exploration_and_production_companies)
- Drillers: [https://www.rigzone.com/search/c/companies/drilling\\_well\\_services/land\\_drilling/](https://www.rigzone.com/search/c/companies/drilling_well_services/land_drilling/)
- [https://www.rigzone.com/search/c/companies/drilling\\_well\\_services/offshore\\_drilling/](https://www.rigzone.com/search/c/companies/drilling_well_services/offshore_drilling/)
- Independents: <https://www.oildex.com/resources/directory/oil-and-gas-companies/>
- Service: [https://www.rigzone.com/search/c/companies/drilling\\_well\\_services/](https://www.rigzone.com/search/c/companies/drilling_well_services/)
- Transport: Pipelines, Rail car, Tankers, Truck
- <https://www.rigzone.com/search/c/companies/transportation/>
- <http://www.dividendyieldhunter.com/master-limited-partnerships-alphabetical>
- [http://en.wikipedia.org/wiki/Category:Tanker\\_shipping\\_companies](http://en.wikipedia.org/wiki/Category:Tanker_shipping_companies)
- Storage: SPR, Private Storage at Cushing (mostly owned by Pipeline co)
- Refiners: 20 largest > <http://petroleuminsights.blogspot.com/2011/07/top-20-largest-refining.html#.VWam7s9Viko>
- Renewables: Wind, Solar, Ethanol, Biomass
- THE BANKS THAT LEND

# OIL: US transportation use (2007)



# OIL: Gasoline trends in the US

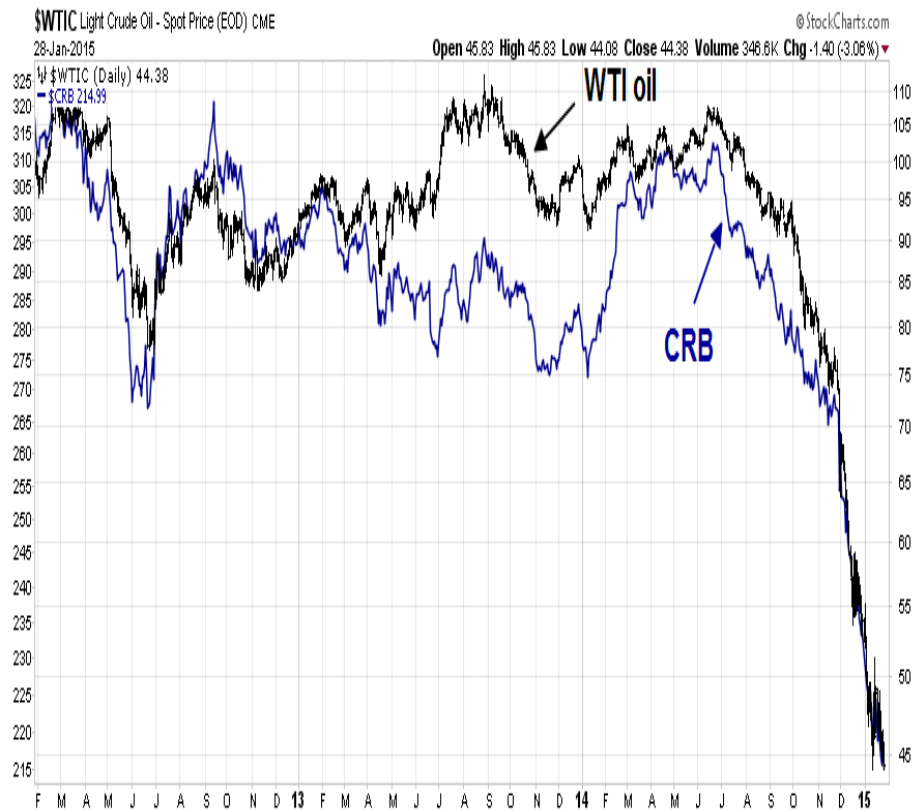
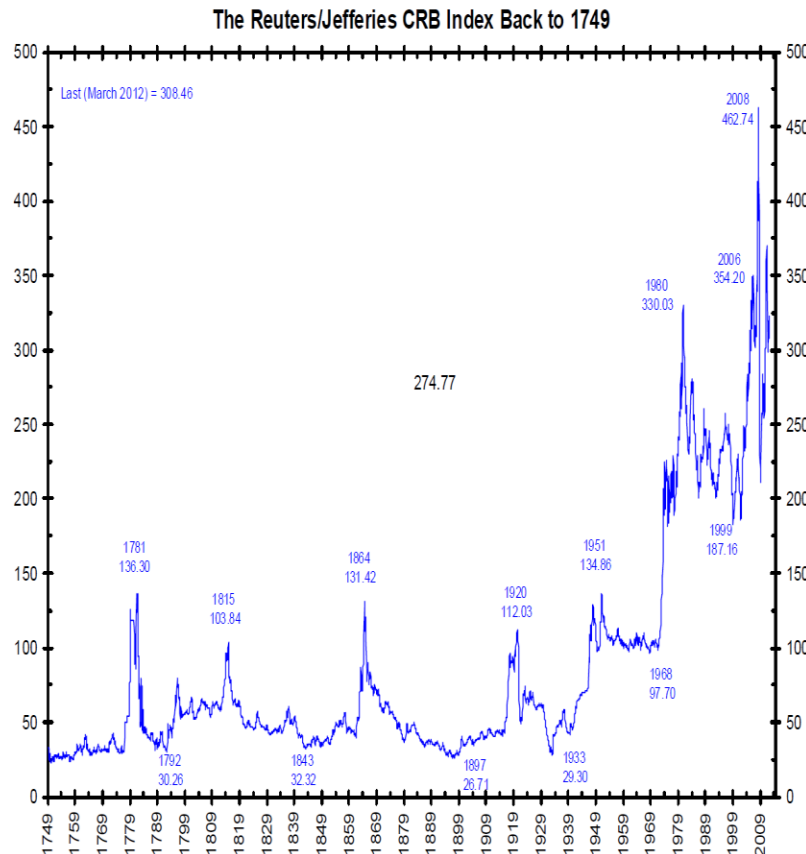


## CPI change- Jan 2015 (Bears watching)

- New CPI Estimation System To Be Introduced
- Effective with the release of the January 2015 CPI on February 26, 2015, the Bureau of Labor Statistics (BLS) will utilize a new estimation system for the Consumer Price Index. The new estimation system, the first major improvement to the existing system in over 25 years, is a redesigned, state-of-the-art system with improved flexibility and review capabilities. In addition, this change eliminates paper in all steps of producing the CPI. The use of the Constant Elasticity of Substitution (CES) formula for initial and interim estimates of the C-CPI-U, and the new quarterly revision schedule for C-CPI-U indexes, are possible because of this new system. Also, as part of the redesign process, a small number of minor methodology changes, primarily affecting the imputation of price changes, were introduced.
- Ref > <http://www.bls.gov/cpi/cpinewest.htm>

# Oil and the CRB- commodity index

- The long term view of the CRB
- Correlation WTI and the CRB '13-'15



# Oil in the CRB

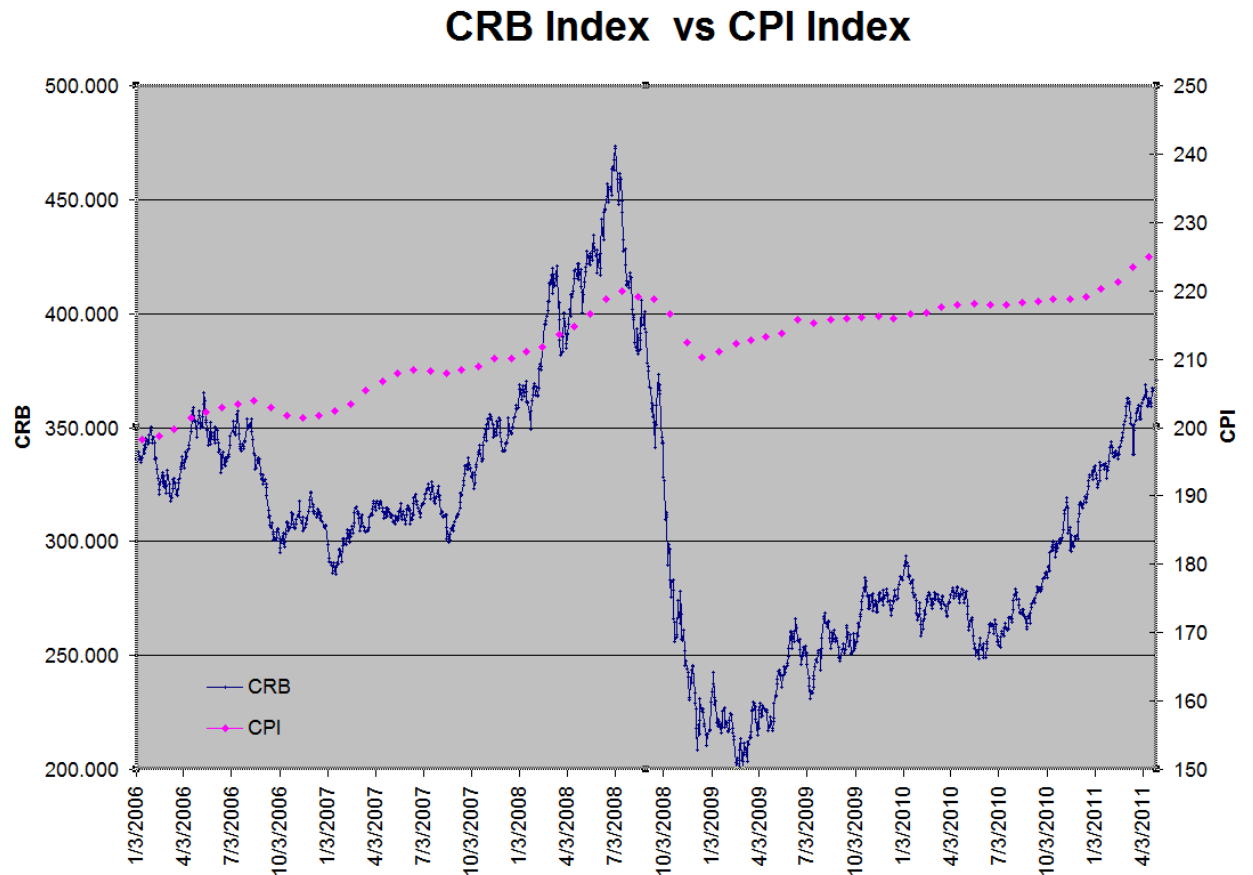
- CRB elements %

A <b>RBOB Gasoline</b>	5
B Corn	6
C Soybeans	6
D Aluminum	6
E Copper	6
F Live Cattle	6
G Gold	6
H Sugar	5
I Cotton	5
J Coffee	5
K Wheat	1
L Nickel	1
M Orange Juice	1
N Silver	1
O Lean Hogs	1
P Cocoa	5
Q <b>Crude Oil</b>	23
R <b>Heating Oil</b>	5
S <b>Natural Gas</b>	6

- Totals by category

- **Energy: 39%**
- Agriculture: 41%
- Precious Metals: 7%
- Base/Industrial Metals: 13%

# Oil vs CRB- some influence

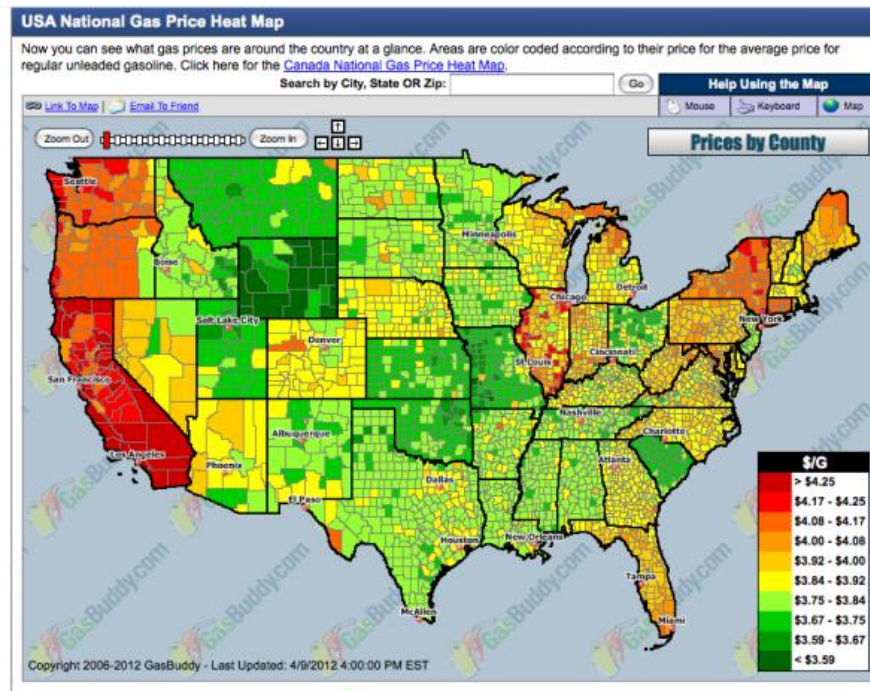


Dragonfly Capital Management LLC

# OIL: California Gas Cost vs the US

Per LA times 6/1/2015

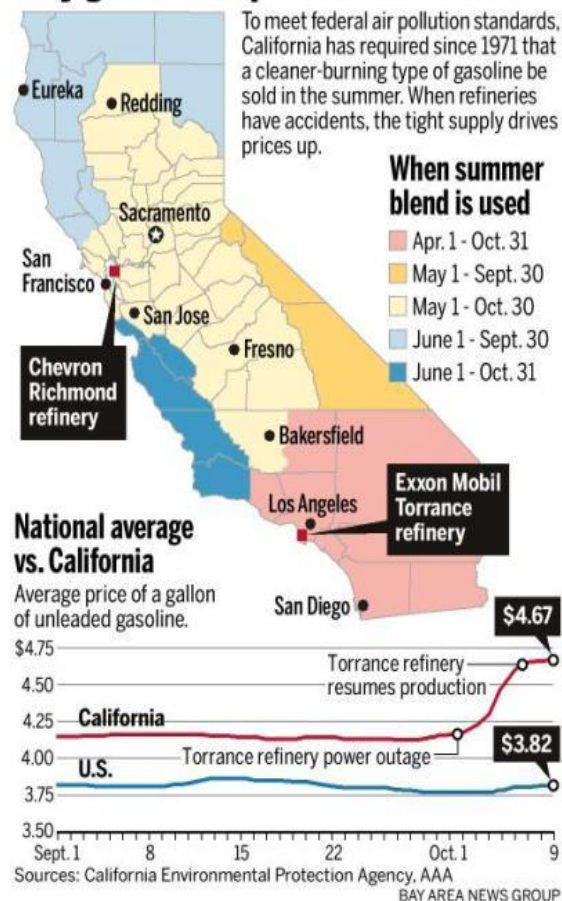
- Regular Gas Cost at the Pump
  - LOS ANGELES \$3.86
  - CALIFORNIA \$3.695
  - U.S. \$2.746



# Oil: California Gasoline- why so High?

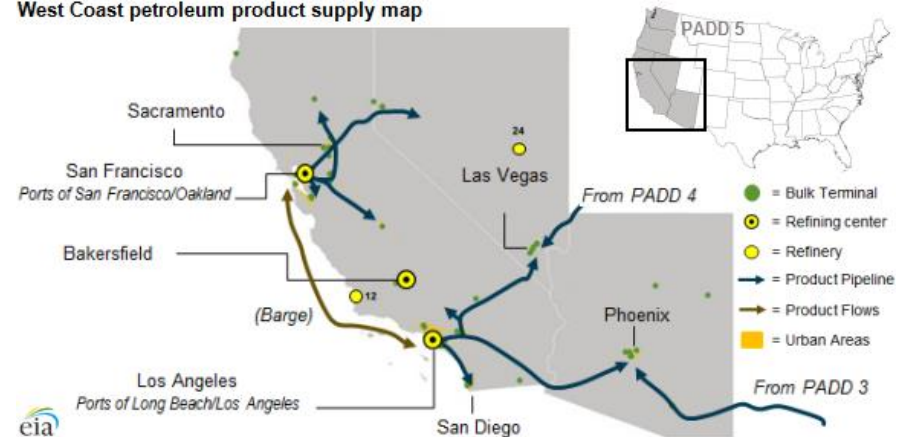
Politics, taxes, geography

## Why gas costs spiked in California



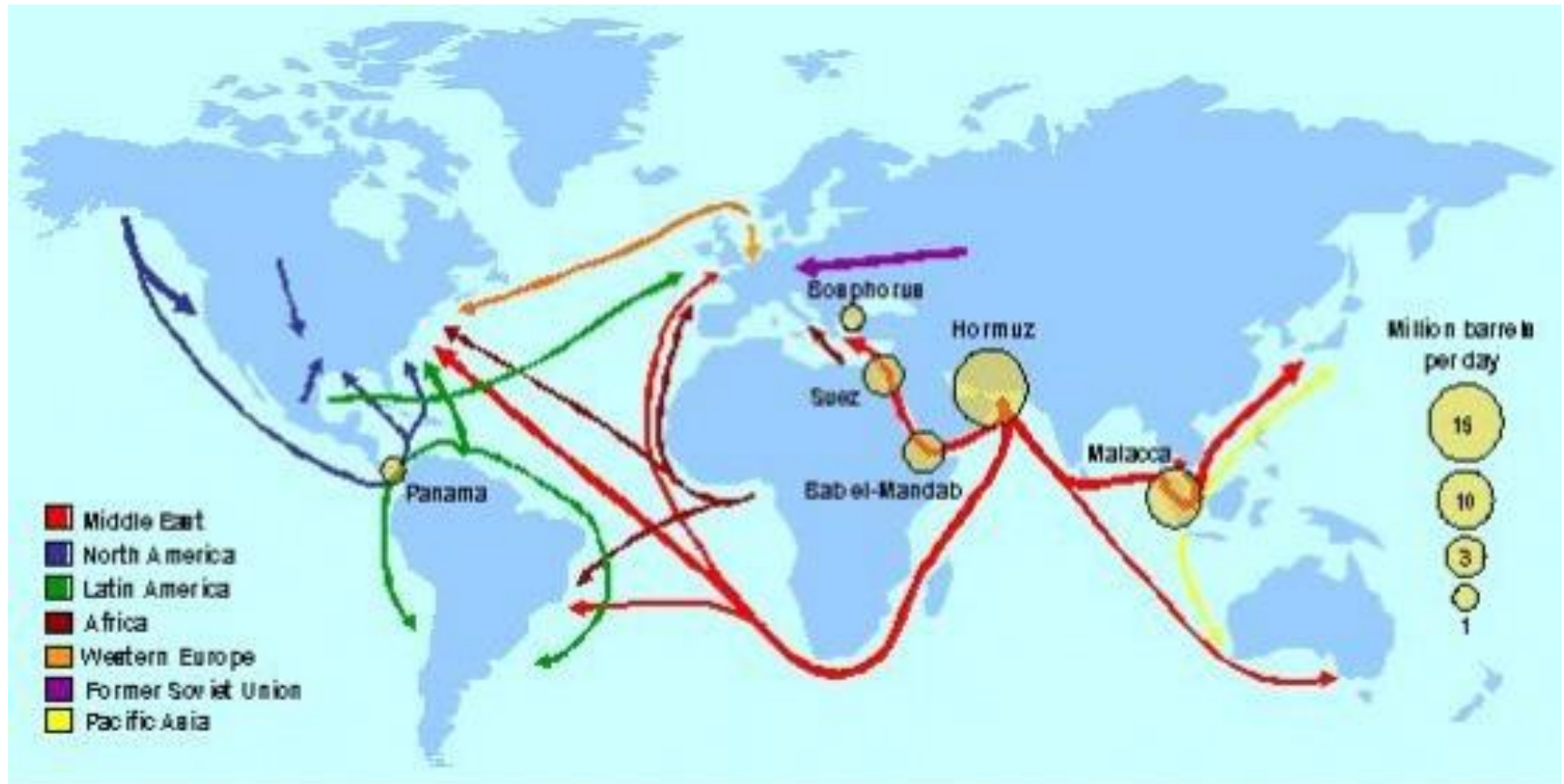
- We are landlocked

West Coast petroleum product supply map



# Oil: Major Intl Oil Transport Routes

< Note: No Crude Oil exits the US >

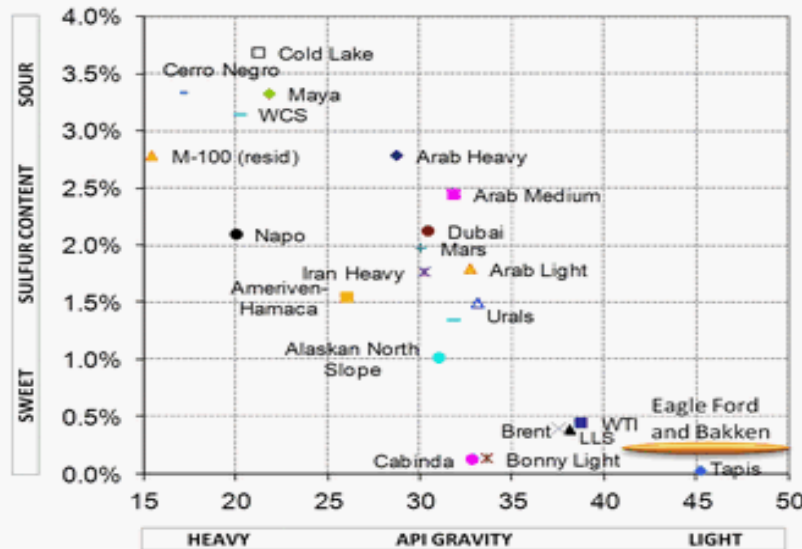


# Oil: Basics per Valero < A Large US Refiner >



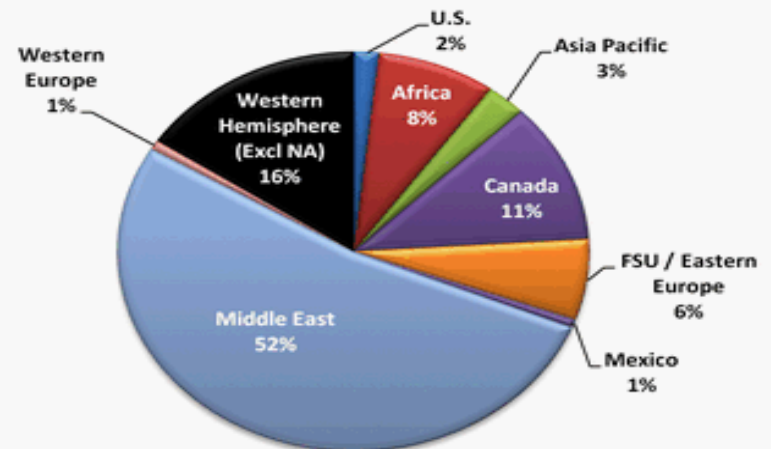
## Crude Oil Basics

Crude Oil Quality by Types



Source: Industry reports

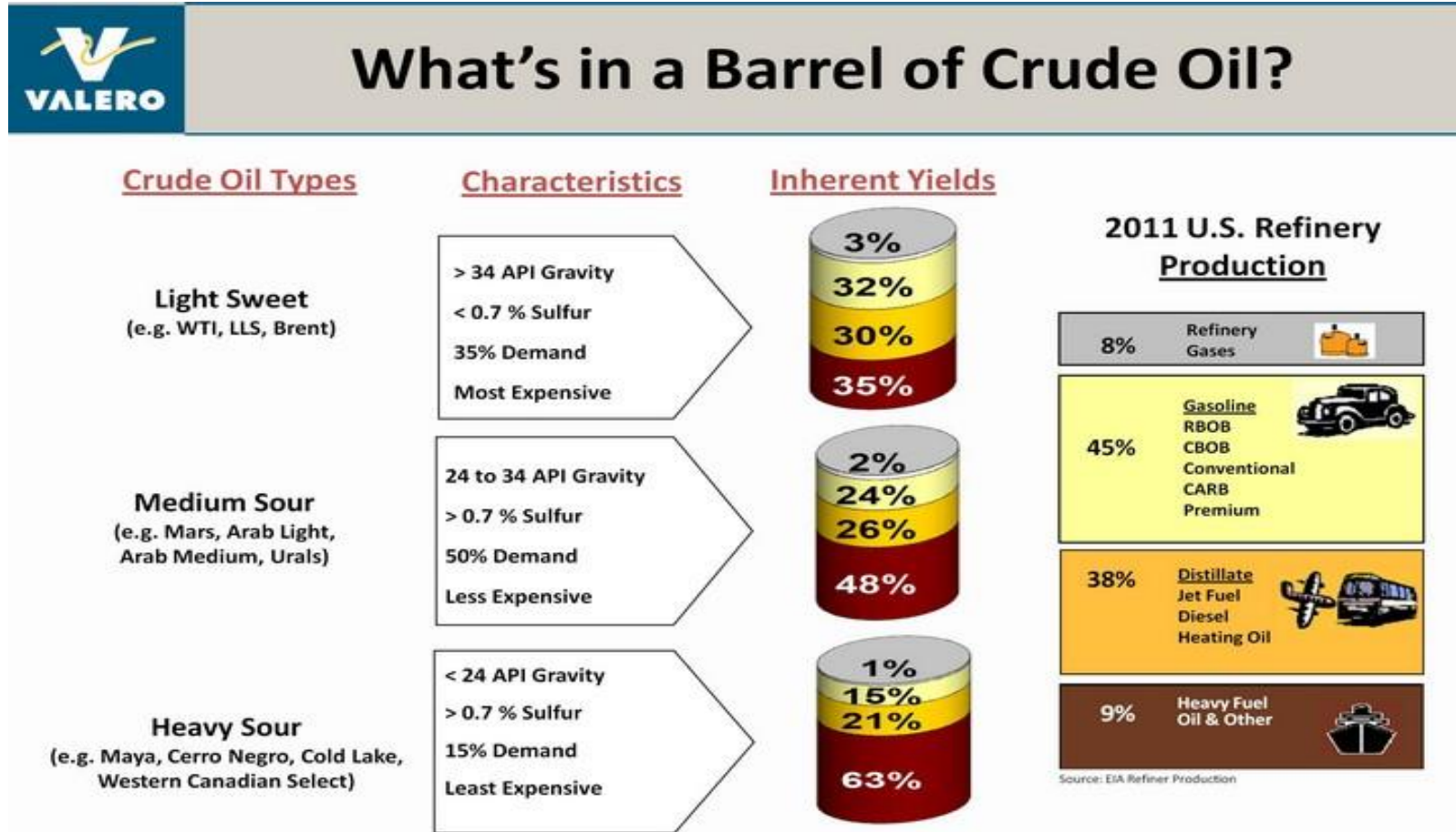
Estimated 1.5 Trillion Barrels of Oil Reserves (2012)



Source: EIA

- Majority of global crude oil reserves are sour
- Most quoted benchmark prices are light sweet crude oils
  - WTI (West Texas Intermediate), Western Hemisphere
  - Brent (North Sea), Atlantic Basin/Europe
  - Tapis/Oman (Middle East), Asia Pacific

# Oil: Refineries are tailored to crude type



Refineries upgrade crude oil into higher value products

# OIL: How Vertical Integration is a Pseudo Hedge

## <Chevron Earnings as an example>

Chevron Corp 3Q 2014 Summary			
	3Q 2014	3Q 2013	% Change
Global Oil Production (kbd)	2,570	2,590	-0.8%
Average Sales Price per (USD/bbl)			
US	87	97	-8.7%
International	93	104	-10.3%
Upstream Earnings (USD millions)	4,649	5,092	-10.6%
Refinery Crude Oil Input (kbd)	1,759	1,716	2.50%
Downstream Earnings (USD millions)	1,387	380	265%

Source: Chevron Corporation, 3Q 2014 earnings release, October 31, 2014