

Introduction to Oil

James Woods

November 1, 2016

Oil is for Cars

- ▶ Keep in mind that oil is primarily a transportation fuel.
 - ▶ Yes, some diesel and even crude is used for electricity production (5%), but
 - ▶ mostly we make gasoline and other commodities out of it.

Oil is not a uniform commodity

- ▶ It varies specific gravity
 - ▶ Lighter oils are more valuable because it is cheaper to crack into the products you want
- ▶ Sulfur content
 - ▶ Low sulfur is easier to crack
- ▶ Location
 - ▶ Transportation is not cheap
 - ▶ Pipelines, train, tanker all have tradeoffs with cost and safety and reliability.
 - ▶ Sometimes law and conflict can disrupt transportation

Sulfur v Density of World Oil

Density and sulfur content of selected crude oils

sulfur content (percentage)

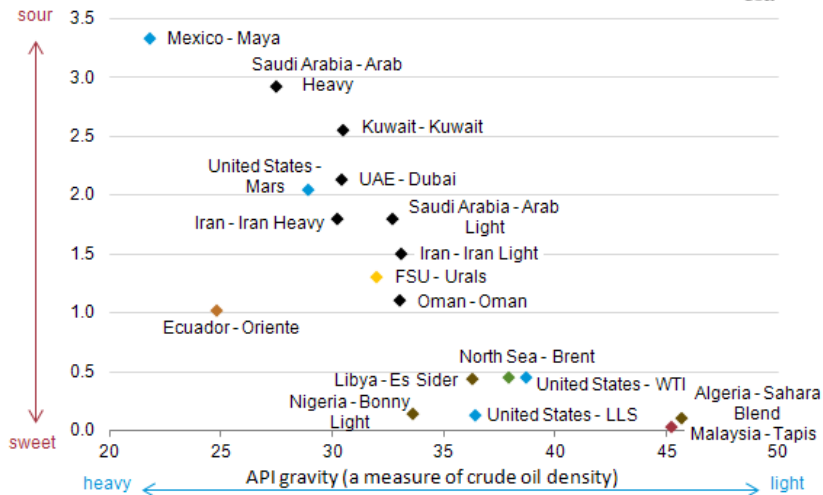


Figure 1:

Prices of oil not Price of oil

- ▶ Many commonly cited prices
 - ▶ Brent (North Sea) and
 - ▶ West Texas Intermediate are common for both US and international.
- ▶ WTI less so
 - ▶ Shale oil with limited transportation means WTI tends to be lower by a few dollars.
 - ▶ Will likely change
 - ▶ More pipelines
 - ▶ Repeal of *mostly* prohibited export of crude.
- ▶ There are smaller price points by city and region
- ▶ Many are specified as blends of typical output of various regions.

The Markets for oil are complex and odd

- ▶ The oddness comes from it being a key commodity
 - ▶ No oil, no cars
- ▶ US uses about 15 MMbd (Million Barrels a day)
 - ▶ Half domestic and half imported
 - ▶ Imports are mostly Canada, Saudi Arabia and Mexico
- ▶ We hold massive inventories of oil and gas
 - ▶ <https://www.eia.gov/petroleum/supply/weekly/pdf/table1.pdf>
 - ▶ Domestic production 8.504 MMbd
 - ▶ Imports 6.601 MMbd
 - ▶ Inventory
 - ▶ Crude 1,162.2 MMb, about 77 days of inventory
 - ▶ Gasoline 226 MMb at 9 MMbd or 25 days of inventory