Analyzing the Energy Economy

Michael Plante
Senior Research Economist
Disclaimer: The statements in this presentation do not represent the official views of the Federal Reserve Bank of Dallas nor the Federal Reserve System as a whole.
Today’s talk is on the data

- What is the data series all about?
- Why are we interested in it?
- Who collects it and how?
- Where can you find it?
NOTE: June 2016 data point is $49.02 per barrel, the average of price data for the weeks ending June 10 and June 17, 2016.
SOURCE: Energy Information Administration.
Crude oils have different qualities

Sulfur content (percentage)

API gravity (a measure of crude oil density)

SOURCES: Energy Information Administration; American Petroleum Institute.
Real prices low but not record low

NOTE: Data are adjusted for inflation using a core, urban, seasonally adjusted consumer price index (CPI).

Supply and Demand
World petroleum supply and demand

Million barrels per day


Global supply

Global demand

NOTE: Dashed lines represents forecasts.
Supply has outpaced demand

Growth, million barrels per day

Annual world production growth

Average annual world consumption growth

Supply-demand balance improving

NOTES: Shaded bars represent forecasts. Series is the difference between world petroleum supply and demand. SOURCE: International Energy Agency.
U.S. crude oil inventories high

Million barrels

2015 2016 Average levels 2010-2014

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

2010-2014

SOURCE: Energy Information Administration.
Consumer Data for the U.S.
Low oil prices = low gas prices

NOTE: Series is the monthly average of weekly price data.
SOURCE: Energy Information Administration.
U.S. consumers hit the road!

NOTE: April, May and June 2016 data points are averages of weekly estimates for those months.
SOURCE: Energy Information Administration.
Production Data for the U.S.
Shale boosts U.S. oil production

NOTE: Last data point is 9.13 million barrels per day for March 2016.
SOURCE: Energy Information Administration.
Handful of states take part in boom

Million barrels per day

0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5

Texas 3.28
North Dakota 1.11
Montana 0.24
Utah 0.79
Colorado 1.56
Wyoming 0.0
New Mexico 0.0
Oklahoma 0.0

SOURCE: Energy Information Administration.
Low prices deter new investment

NOTE: Last data point is 337 oil rigs for the week ending June 17, 2016.
SOURCE: Baker Hughes.
Low prices deter new investment

NOTE: Last data point is 337 oil rigs for the week ending June 17, 2016.
SOURCE: Baker Hughes.
Drilling rig at work

Horizontal vs. vertical drilling

SOURCE: Environmental Protection Agency.
Regional and Other Data
Energy in the 11th District

Eagle Ford production data

Million barrels per day

Billion cubic feet per day

Shale oil production

Shale gas production

NOTE: Data are through May 2016 and represent EIA’s official shale gas and tight oil estimates, but are not survey data.
SOURCE: Energy Information Administration, based on data collected by DrillingInfo Inc.
Anecdotal and company info

- Beige Book calls
  (http://www.dallasfed.org/research/beige/index.cfm)

- Dallas Fed Energy Survey
  (http://www.dallasfed.org/microsites/research/surveys/des/index.cfm)

- Company reports (for publically traded companies)
Breakeven prices from the survey

In the top two areas in which your firm is active:
What WTI oil price does your firm need to profitably drill a new well?

<table>
<thead>
<tr>
<th>Area</th>
<th>Breakeven Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Louisiana</td>
<td>$50</td>
</tr>
<tr>
<td>Permian Basin</td>
<td>$51</td>
</tr>
<tr>
<td>Eagle Ford</td>
<td>$53</td>
</tr>
<tr>
<td>Other U.S.</td>
<td>$55</td>
</tr>
<tr>
<td>Other Texas</td>
<td>$55</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>$56</td>
</tr>
<tr>
<td>Onshore Gulf Coast</td>
<td>$62</td>
</tr>
</tbody>
</table>

Wrapping up

• We follow the oil and gas market regularly

• Data comes from a variety of sources (government, private sector, news sources, anecdotal)

• Hope to glean insights into the regional, national and global economies

• Questions?
Data sources
Data sources for prices

U.S. Energy Information Administration
http://www.eia.gov/petroleum/data.cfm

Wall Street Journal and other papers

Bloomberg (http://www.bloomberg.com/energy)

GasBuddy (http://www.gasbuddy.com/GasPriceMap)
Supply and demand data

International Energy Agency (Oil Market Report)
https://www.iea.org/oilmarketreport/omrpublic/

U.S. Energy Information Administration
(Short-Term Energy Outlook)
http://www.eia.gov/forecasts/steo/
U.S. Energy Information Administration (oil, gas, electricity, renewables, etc.) [http://www.eia.gov/](http://www.eia.gov/)


Bureau of Labor and Statistics (employment data) [http://www.bls.gov/](http://www.bls.gov/)
U.S. Energy Information Administration
(http://www.eia.gov)

EIA Drilling Productivity Report
(http://www.eia.gov/petroleum/drilling/)

State government agencies

Energy in the 11th District website