



BANK FOR INTERNATIONAL SETTLEMENTS

# Oil and Debt

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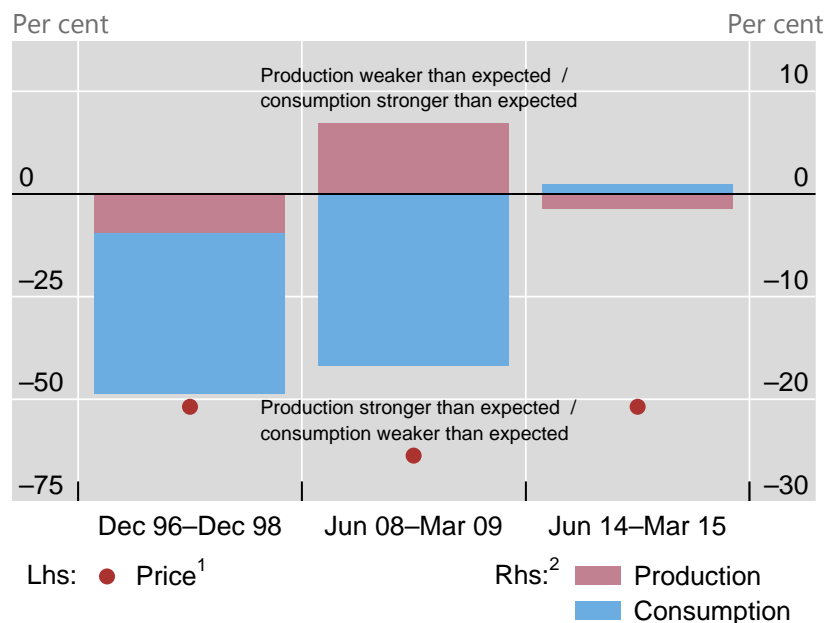
OPEC, 30 March 2015

The views expressed are solely those of the authors and should not be attributed to the BIS

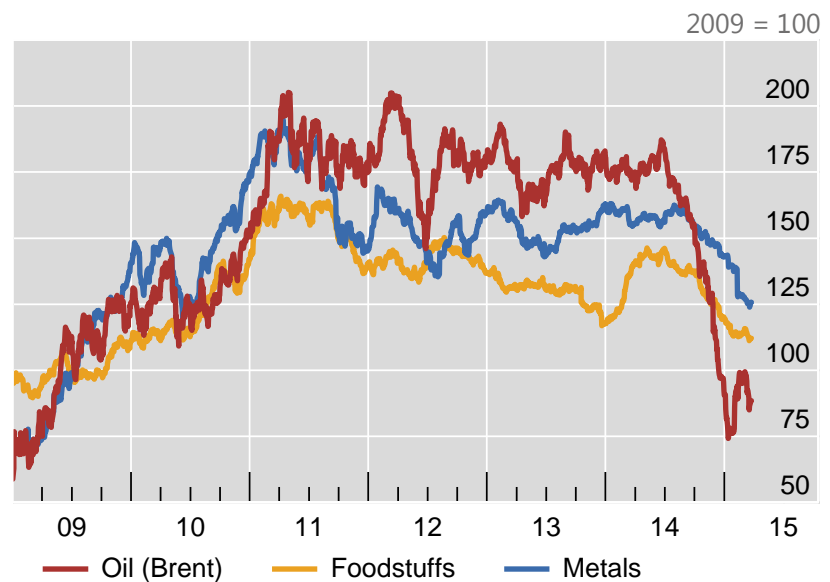


# Shifts in production and consumption fall short of explaining oil price dynamics

Oil price and unexpected oil market tightness



Commodity prices

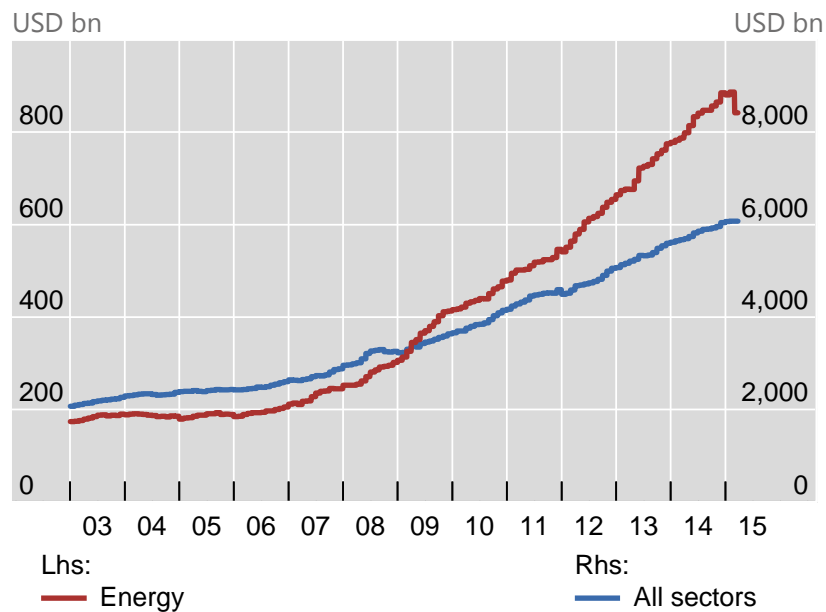


<sup>1</sup> Change in quarterly average Brent crude oil spot price. <sup>2</sup> Cumulative deviation of growth from expectation at the start of the episode. <sup>3</sup> Cushing West Texas Intermediate (WTI), US market close time.

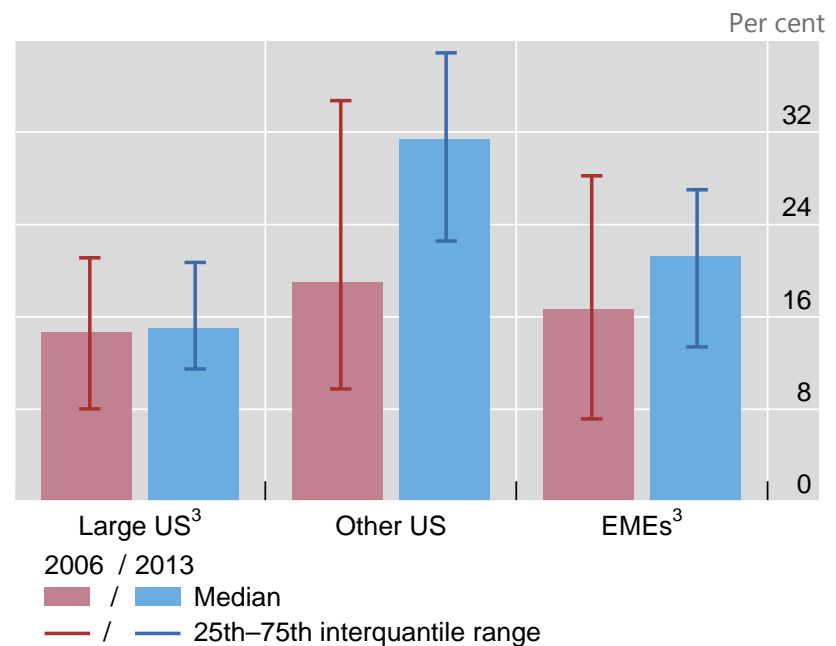
Sources: US Energy Information Administration; Bloomberg; BIS calculations.

# Debt and leverage have increased sharply

US corporate bonds outstanding<sup>1</sup>



Oil and gas producers: total debt to assets<sup>2</sup>

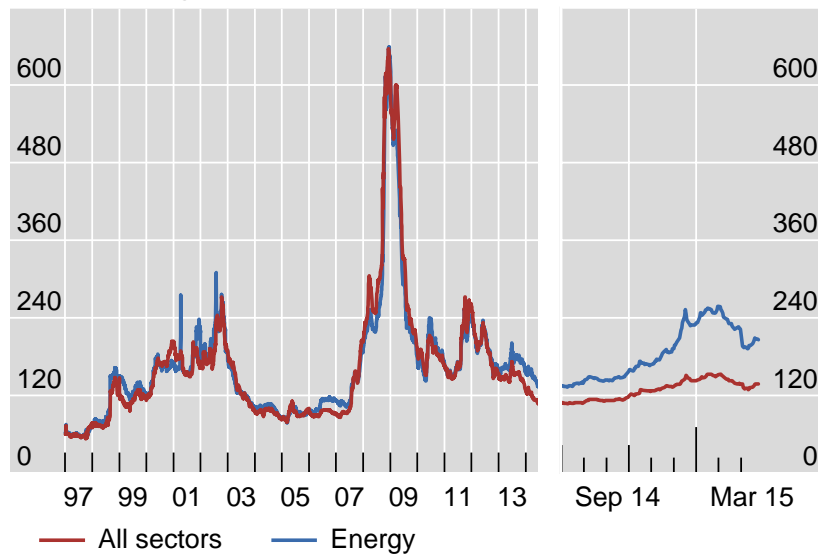


<sup>1</sup> Face value of Merrill Lynch high-yield and investment grade corporate bond indices. <sup>2</sup> Integrated oil, gas and exploration/production companies. <sup>3</sup> Companies with total assets in 2013 exceeding \$25 billion.

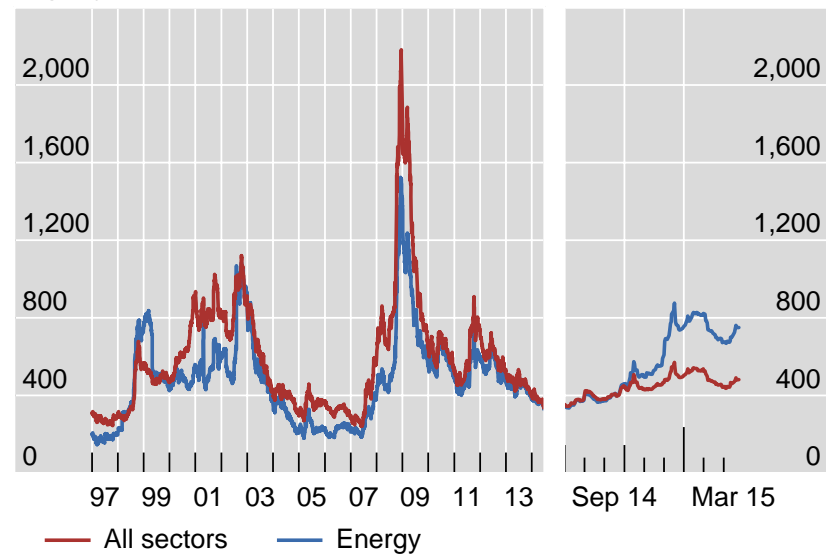
Sources: Bloomberg; Thomson Reuters Worldscope; BIS calculations.

# Credit spreads point to increasing risks in the energy sector

Investment grade



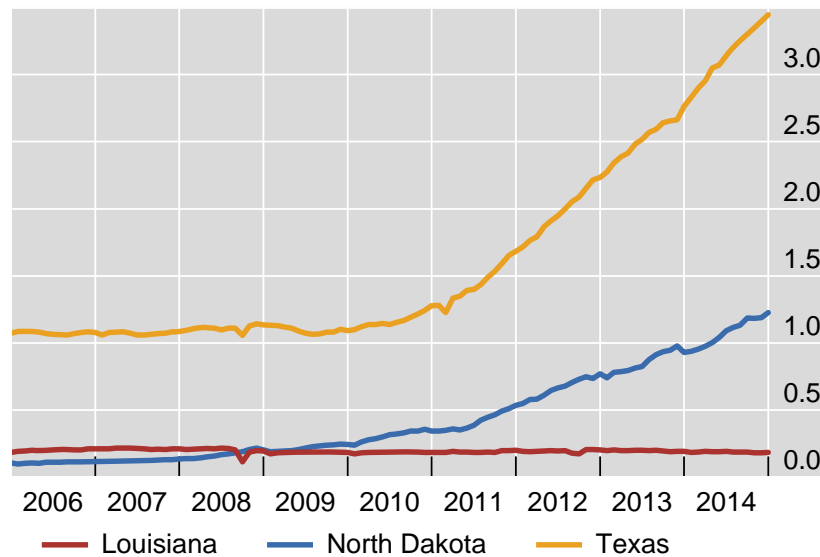
High-yield



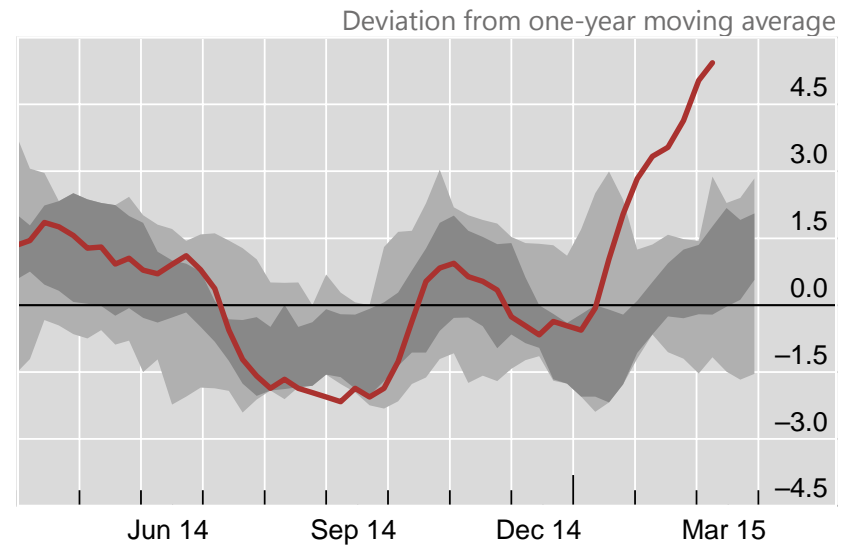
Source: Merrill Lynch.

# Oil production in the US continued surging

Crude oil production<sup>1</sup>



Days of supply of crude oil in US stocks<sup>2</sup>

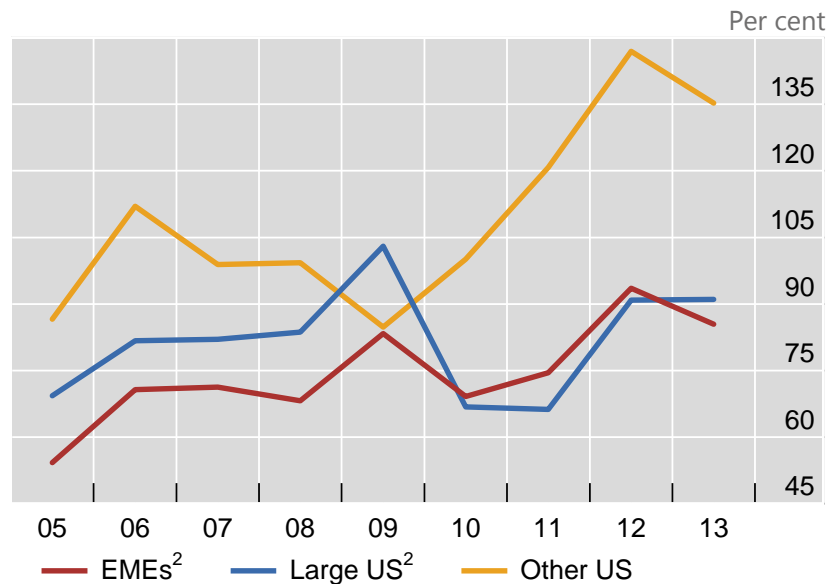


<sup>1</sup> In million barrels per day. <sup>2</sup> Calculated as current crude oil stock level divided by refinery inputs of crude oil (as a proxy for demand) averaged over the most recent four-week period. The dark (light) grey range depicts the minimum and maximum values registered over the period 2009–13 (1984–2013) in the corresponding weeks of the calendar year.

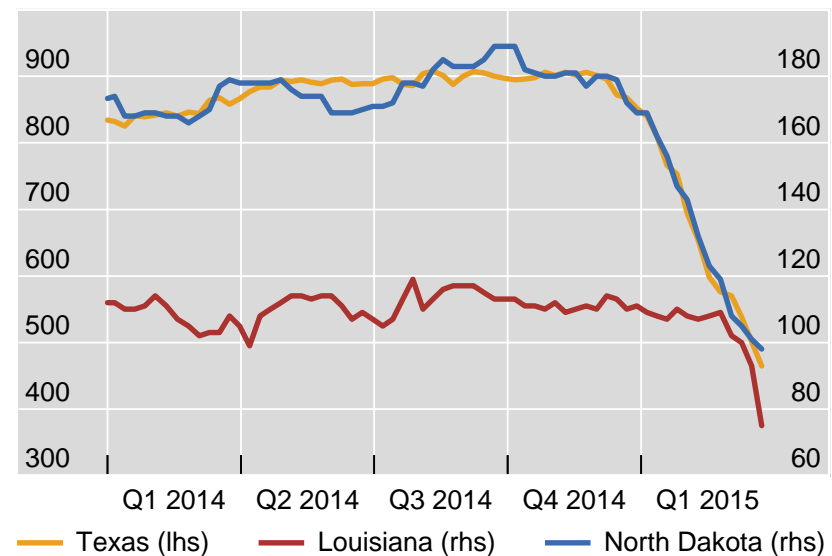
Source: US Energy Information Administration

# Debt and ample oil supply will constrain oil producers

Ratio of capital expenditures to cash flow<sup>1</sup>



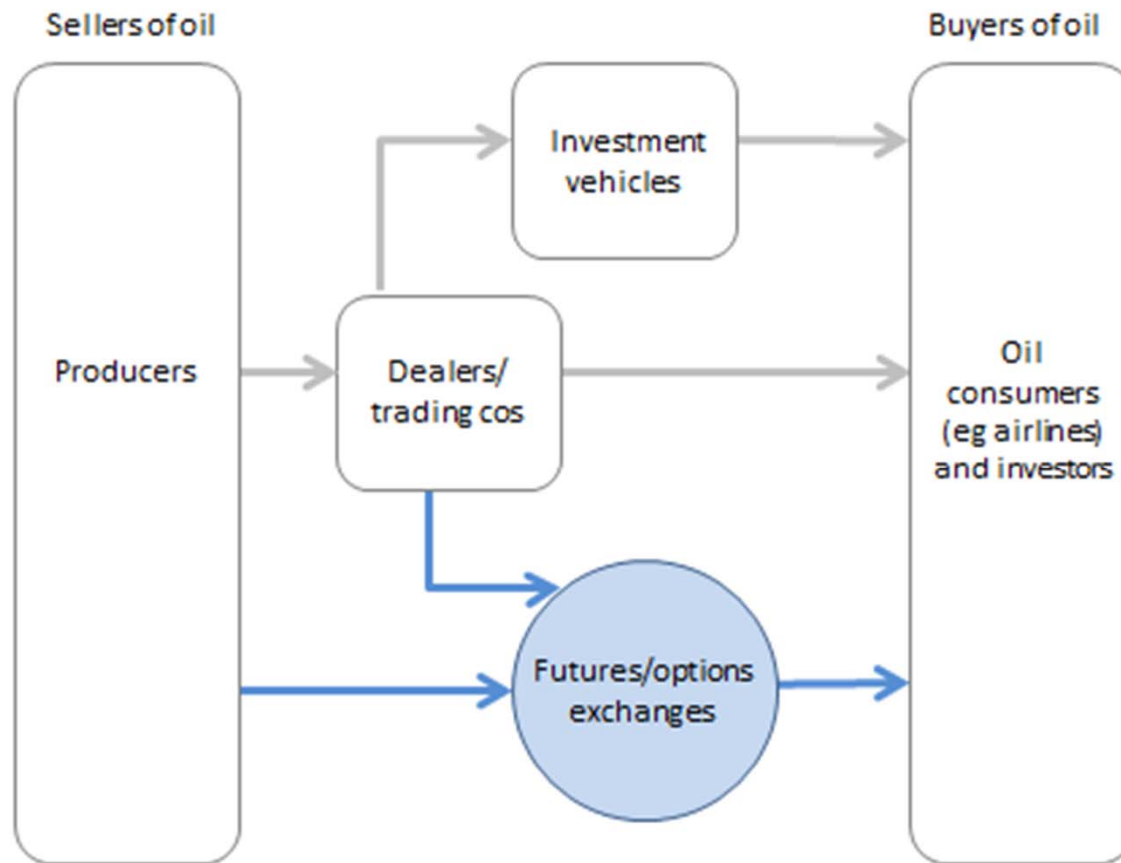
Rig counts



<sup>1</sup> Median across integrated oil, gas and exploration/production companies in each category. <sup>2</sup> Companies with total assets in 2013 exceeding \$25 billion.

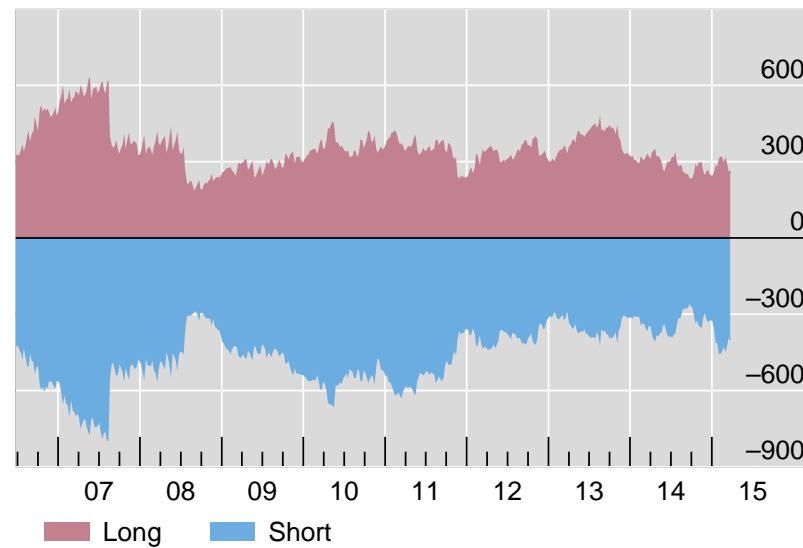
Sources: US Energy Information Administration; Thomson Reuters Worldscope; BIS calculations.

# Oil and finance ecosystem

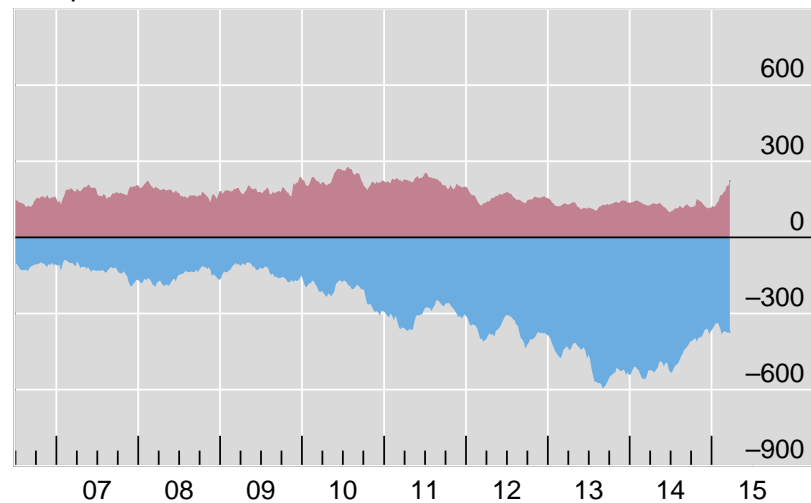


# The growing role of swap dealers as providers of hedge

Merchants



Swap dealers



Source: Bloomberg.



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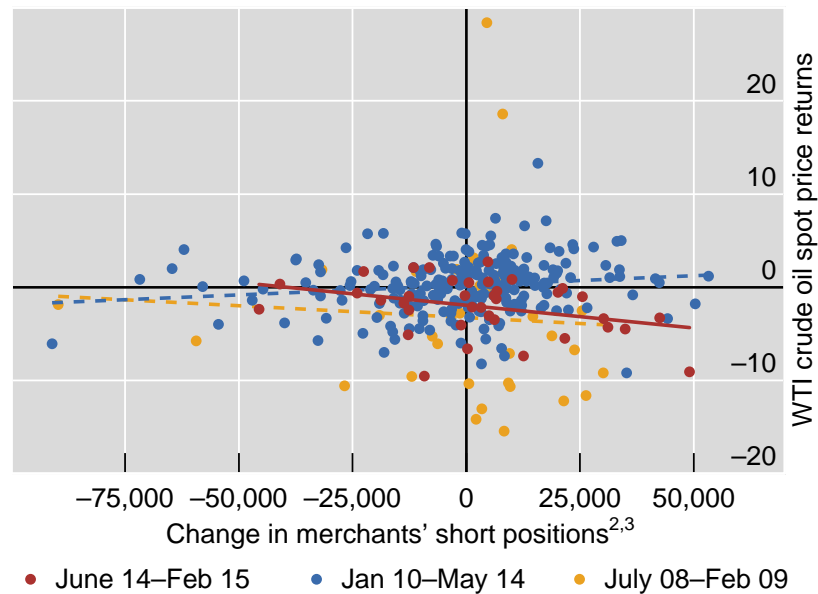
Restricted

8

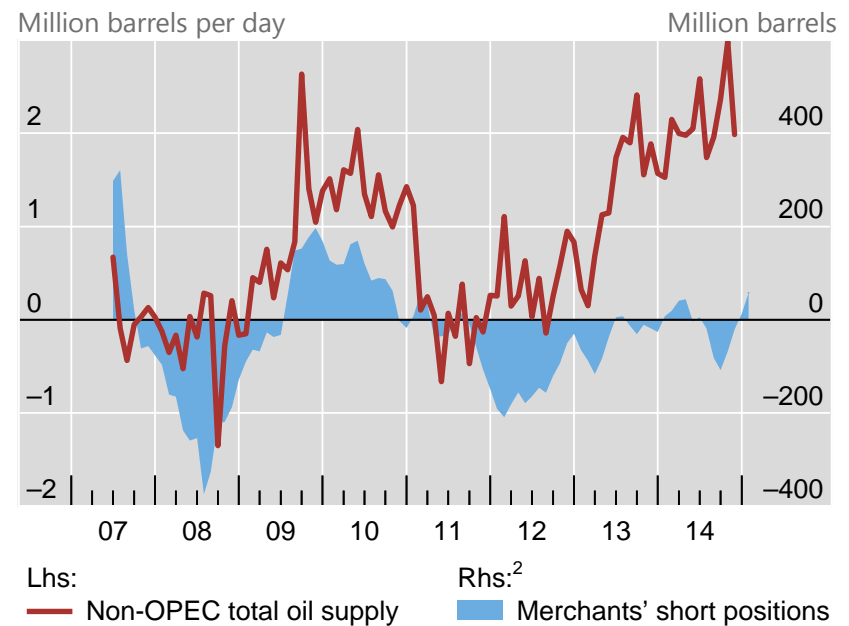


# A negatively-sloped supply curve for futures

Merchants' short positions and returns on oil price<sup>1</sup>



Oil supply and hedging activity<sup>3</sup>



<sup>1</sup> Weekly data (five-day moving average for oil price). The solid regression line indicates statistical significance at a 95% confidence level; the dotted lines indicate no statistical significance. <sup>2</sup> Futures and options short open positions on WTI light sweet crude oil traded at the NYMEX, in millions of barrels. <sup>3</sup> Twelve-month changes.

Sources: CFTC; Datastream.

## To wrap up

- The recent fall in the oil price is hard to rationalise
- Indebtedness in the oil industry has surged over the past years
- Falling oil prices and high leverage lead to financial strains
- The reaction of overindebted producers may have amplified the fall
  - US shale oil production continued to grow
  - Producers increased their hedging

