

# What drives crude oil prices?

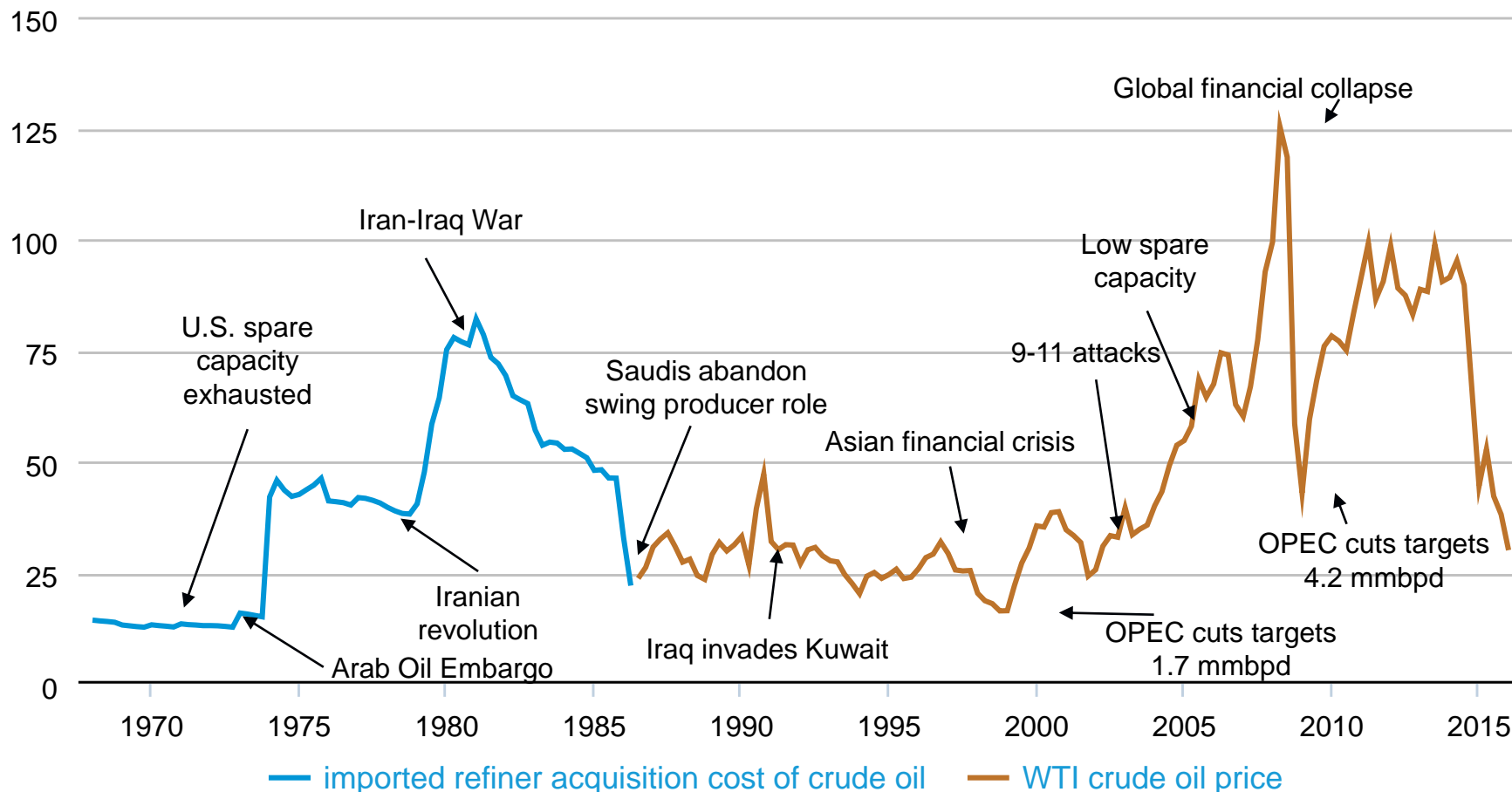
*An analysis of 7 factors that influence oil markets,  
with chart data updated monthly and quarterly*



*May 10, 2016 / Washington, DC*

# Crude oil prices react to a variety of geopolitical and economic events

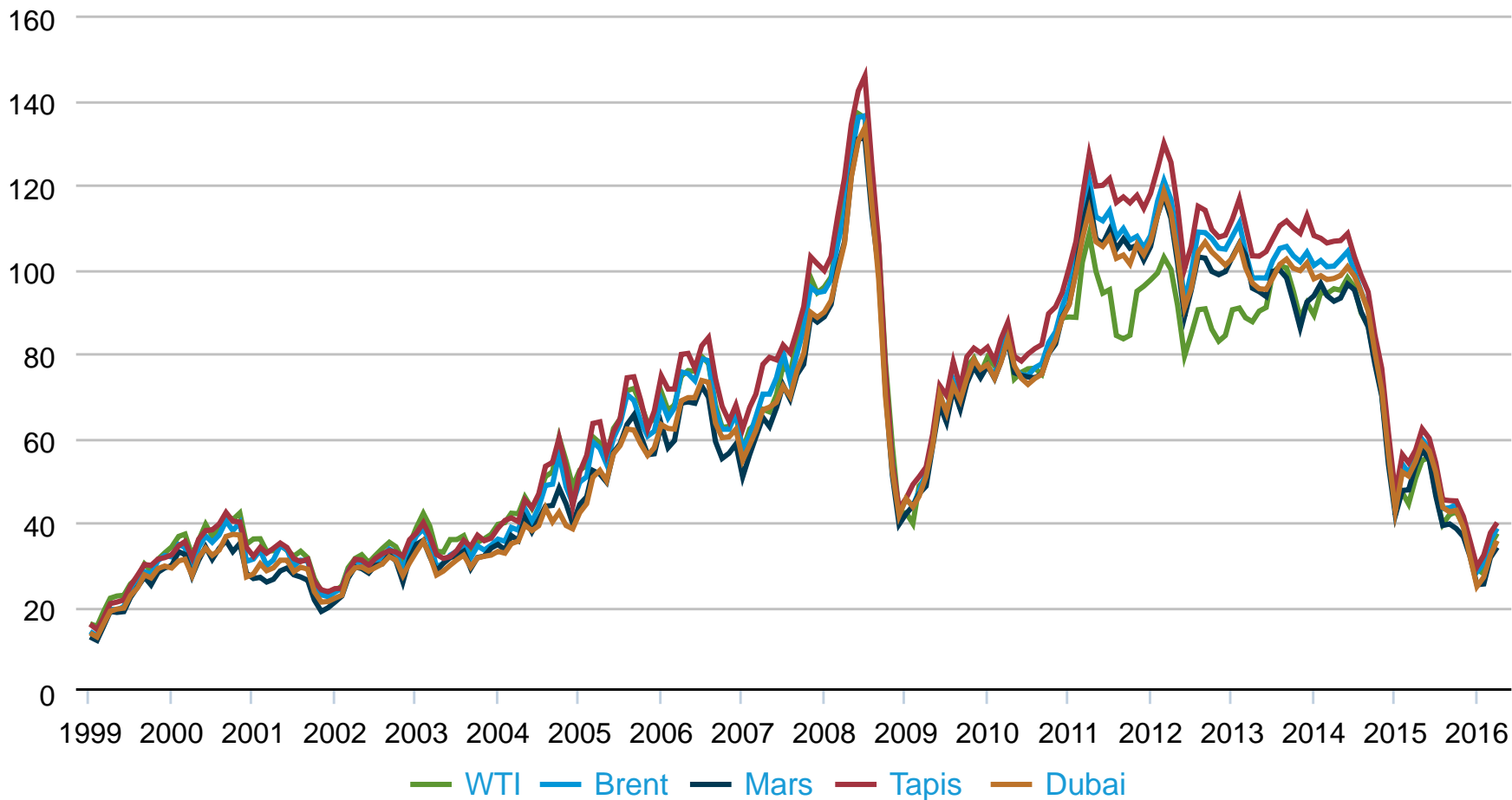
price per barrel (real 2010 dollars)



Sources: U.S. Energy Information Administration, Thomson Reuters

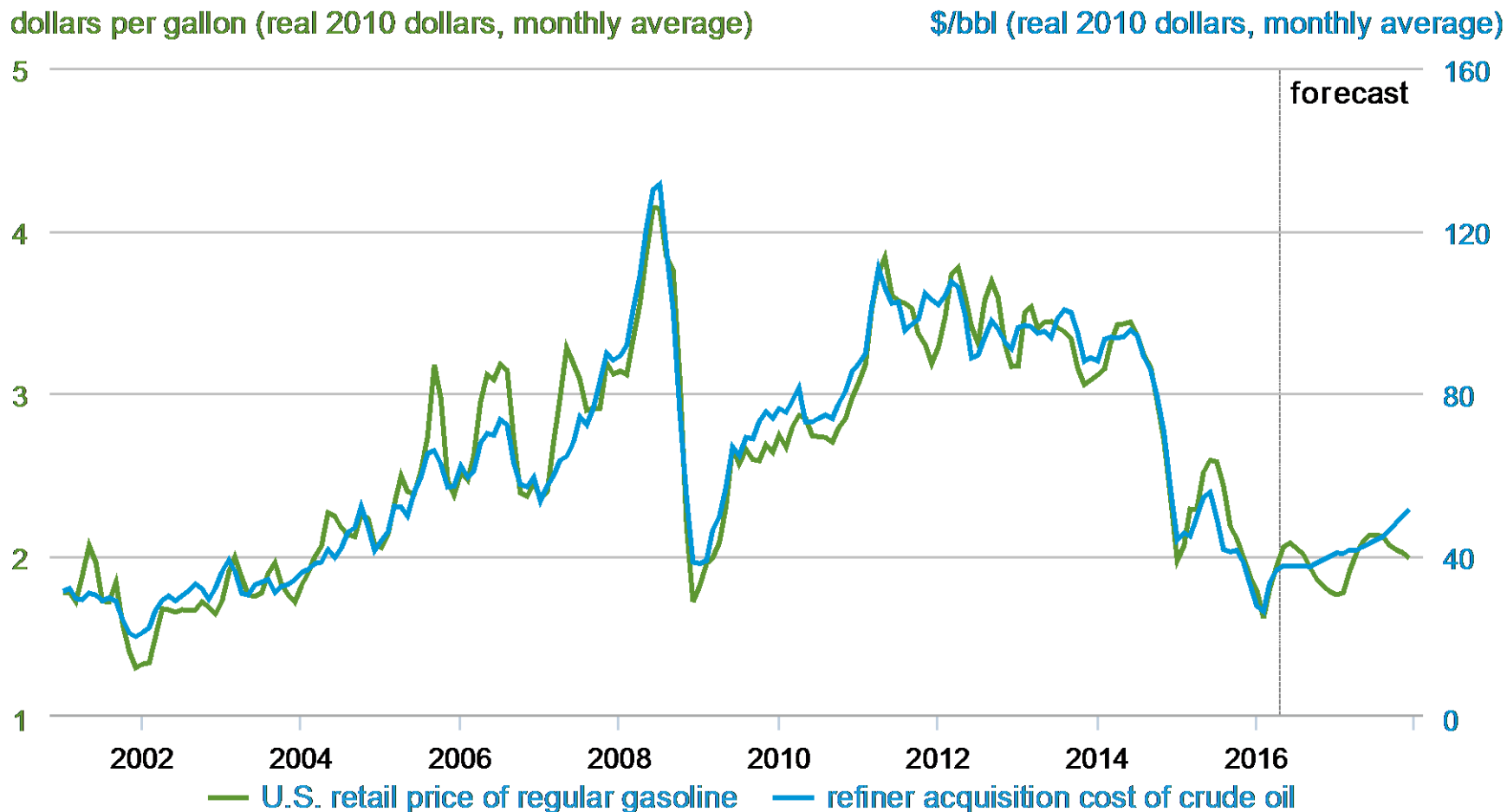
# World oil prices move together due to arbitrage

\$/bbl (real 2010 dollars, monthly average)



Sources: Bloomberg, Thomson Reuters

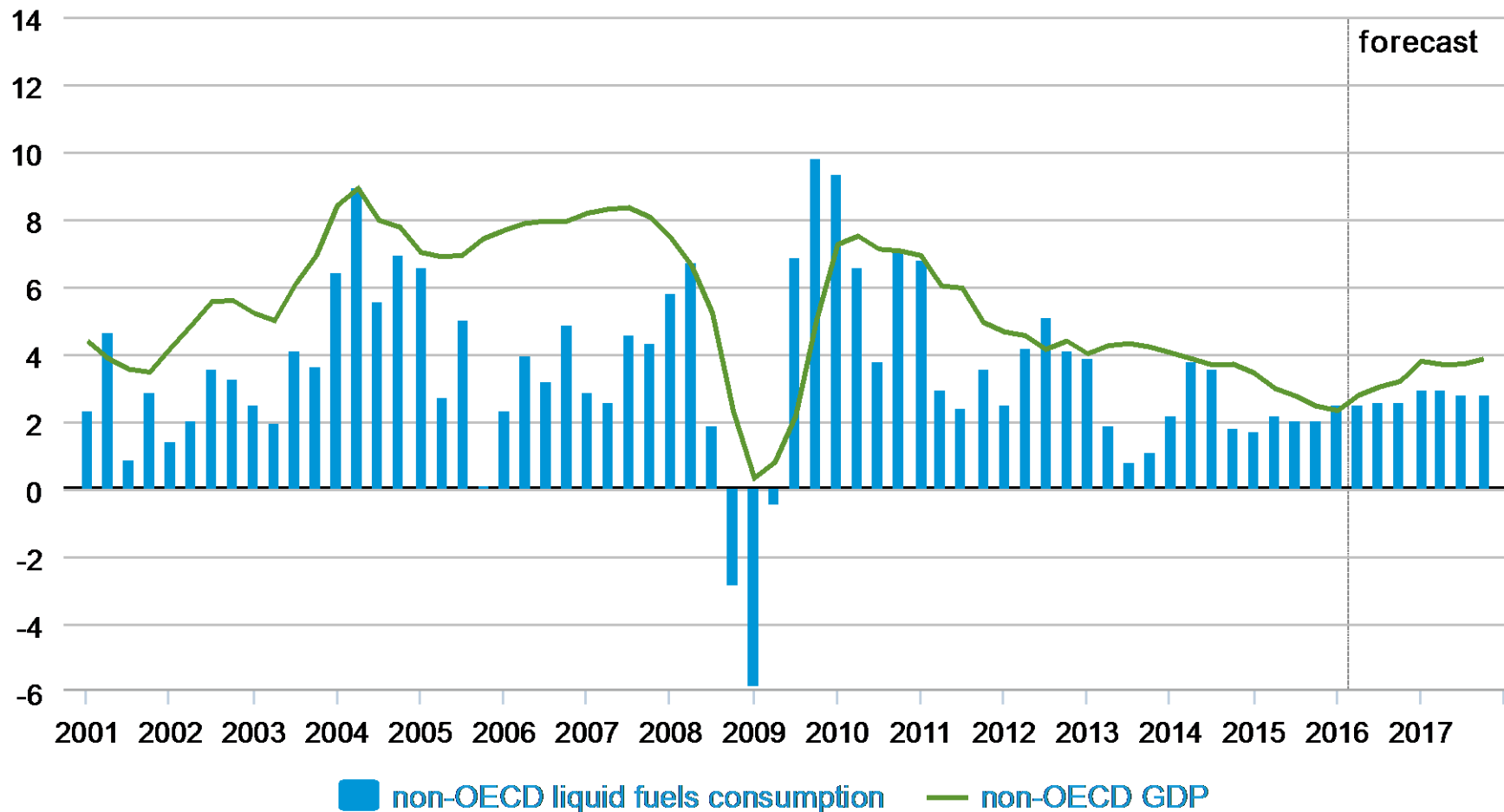
# Crude oil prices are the primary driver of petroleum product prices



Sources: EIA Short Term Energy Outlook, Thomson Reuters

# Economic growth has a strong impact on oil consumption

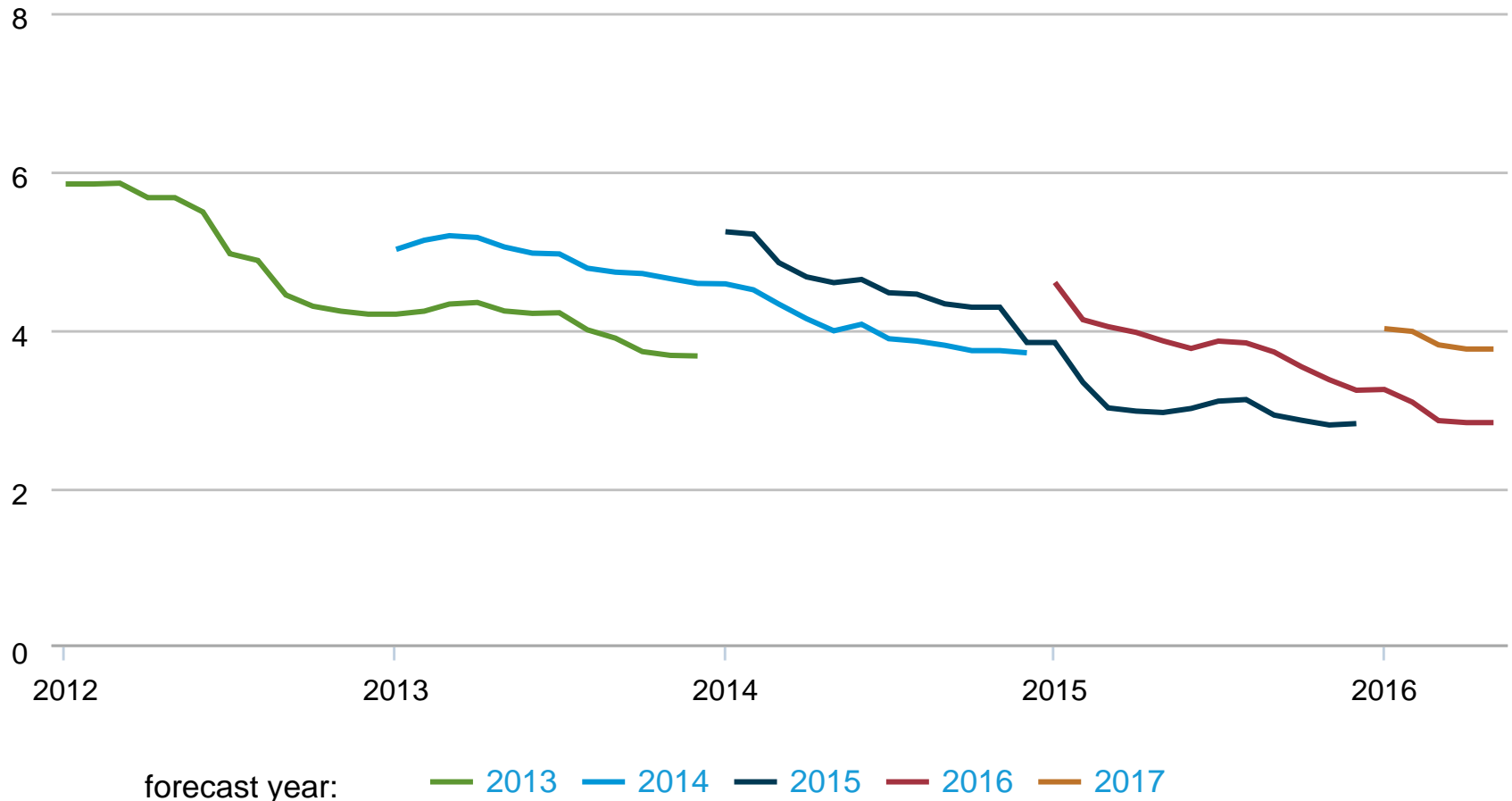
percent change (year-on-year)



Sources: U.S. Energy Information Administration, IHS Global Insight

# Changes in expectations of economic growth in can affect oil prices

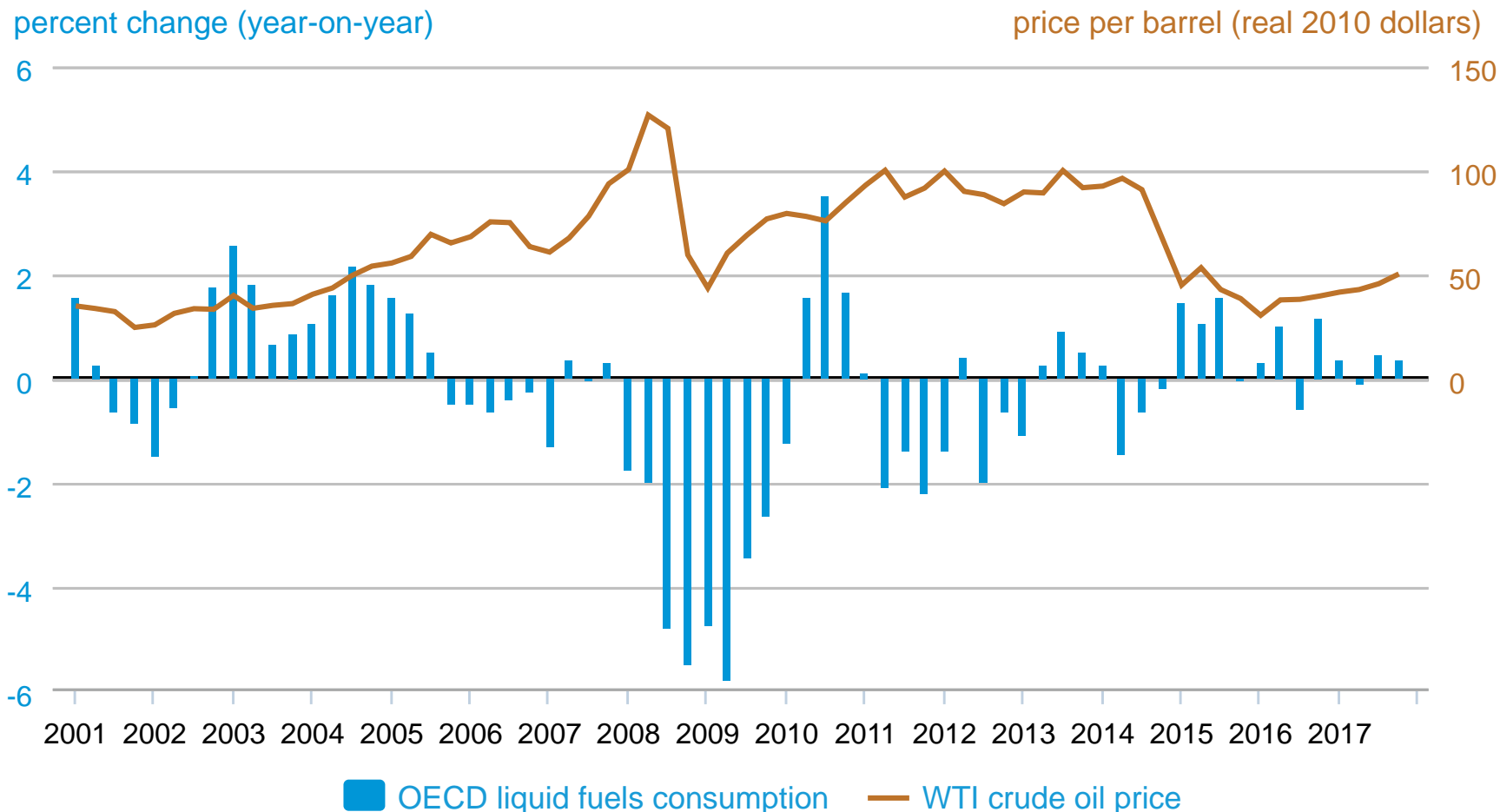
percent GDP growth in non-OECD countries (annual expectations)



Note: Starting in January of each year, each line shows the expected forecast of GDP growth for the specified calendar year, which tends to move toward the actual realized growth outcome as the year progresses. Expectations continue to evolve into the next calendar year as revised GDP data become available (e.g., 2008 GDP expectations are revised even during 2009).

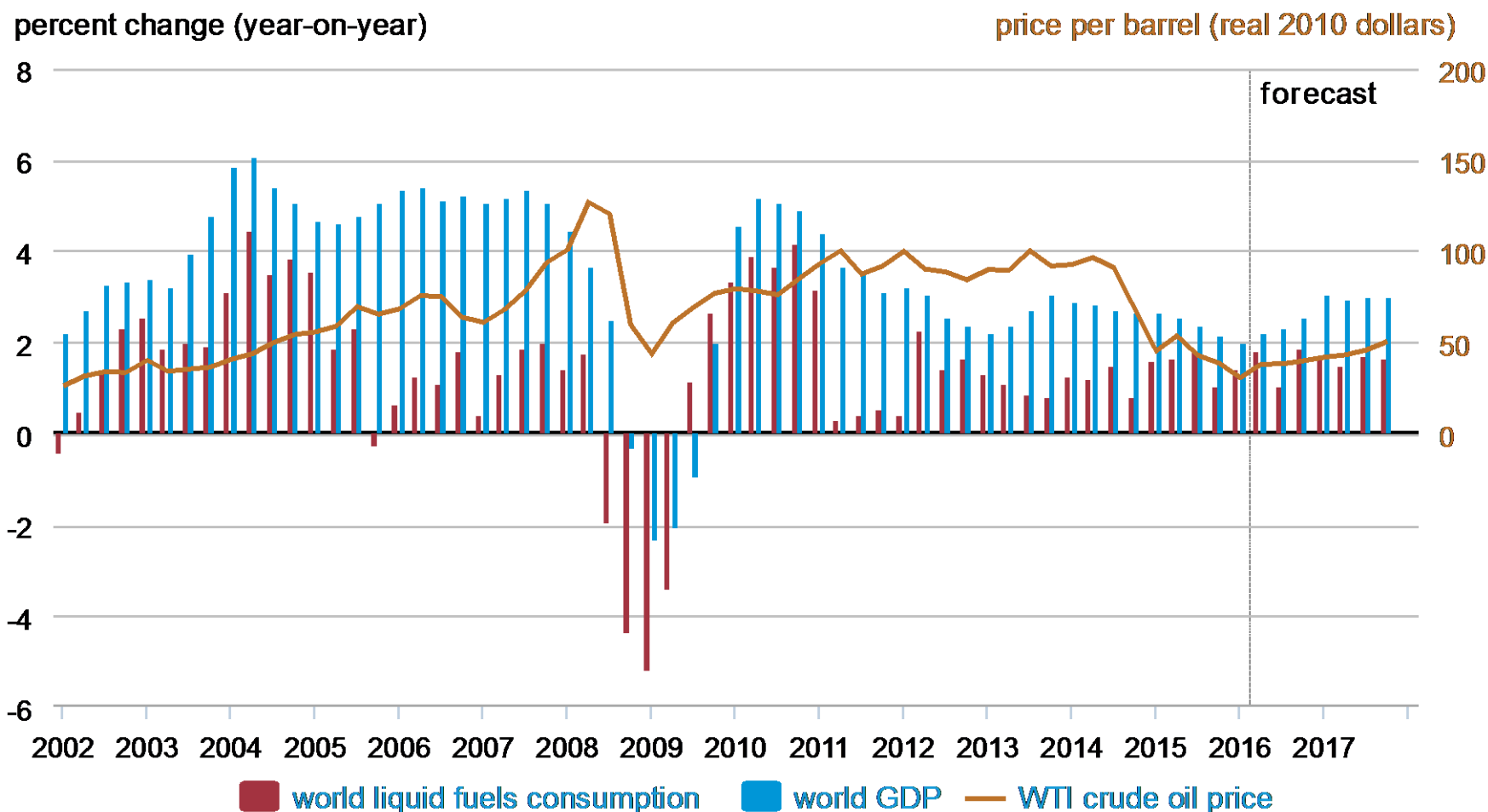
Source: IHS Global Insight

# In OECD countries, price increases have coincided with lower consumption



Sources: EIA Short Term Energy Outlook, Thomson Reuters

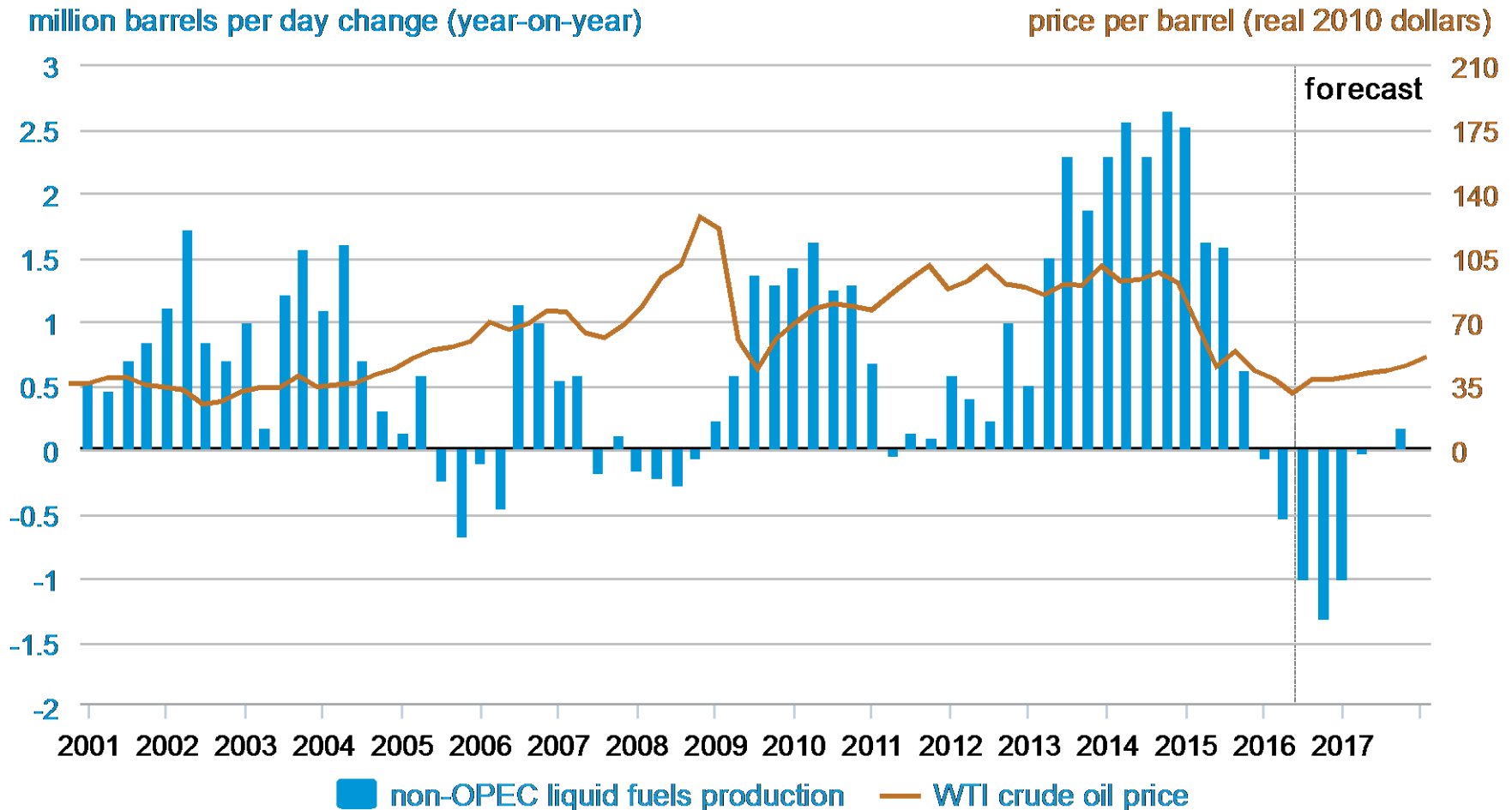
# Rising oil prices held down global oil consumption growth from 2005-2008, despite high economic growth



Sources: EIA Short Term Energy Outlook, Thomson Reuters



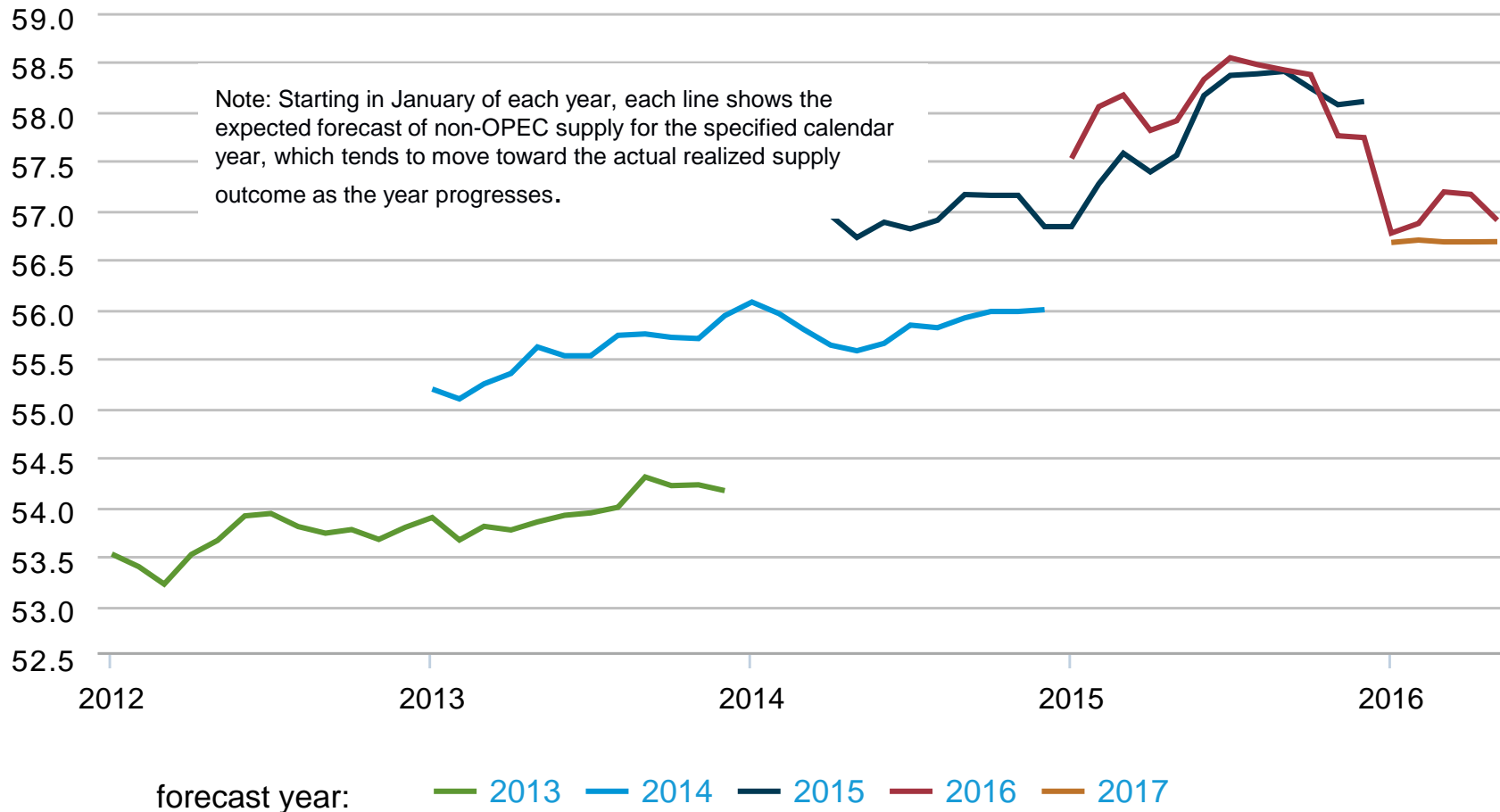
# Changes in non-OPEC production can affect oil prices



Sources: EIA Short Term Energy Outlook, Thomson Reuters

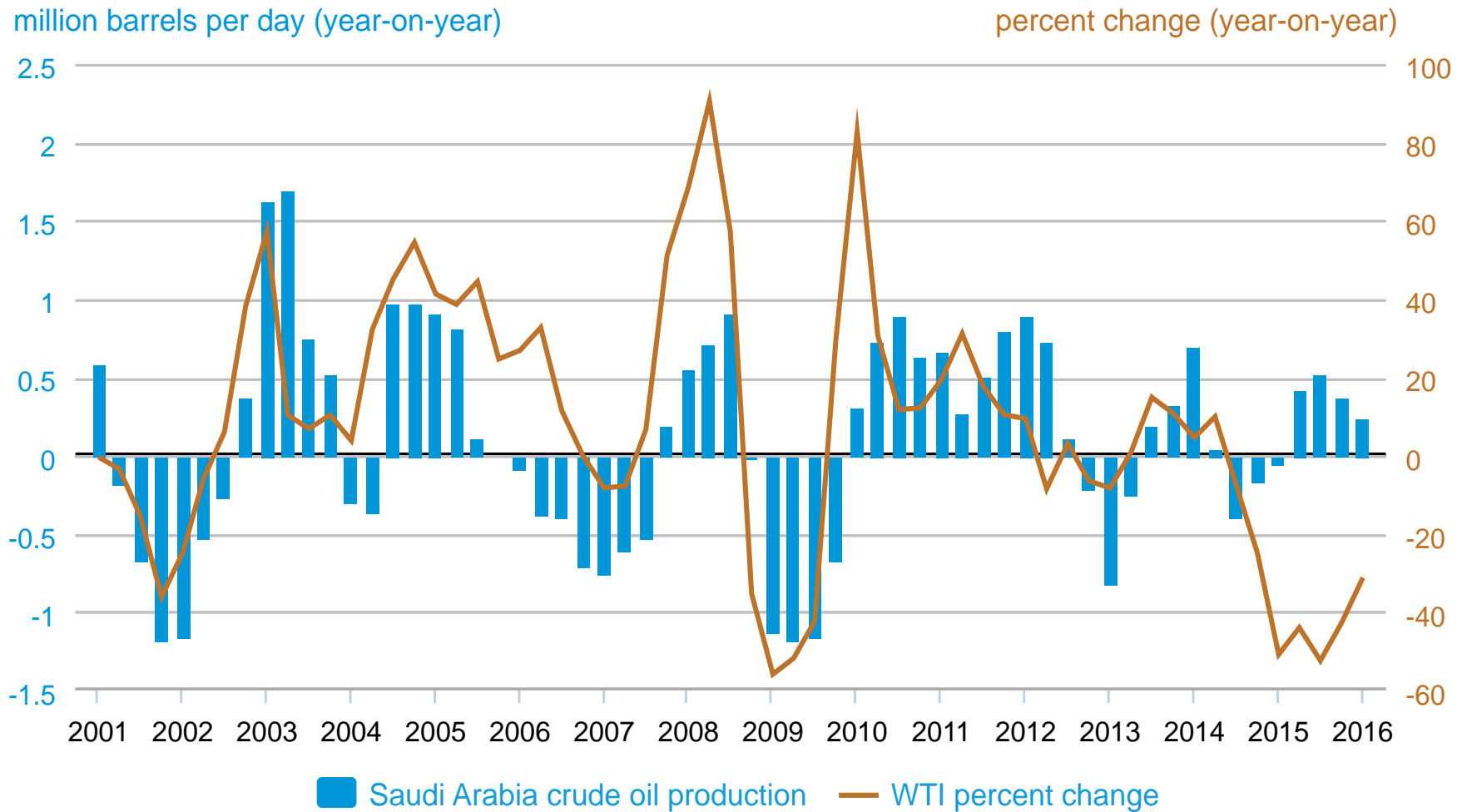
# Non-OPEC supply expectations indicate changes in market sentiment concerning oil supply

million barrels per day (annual expectations)



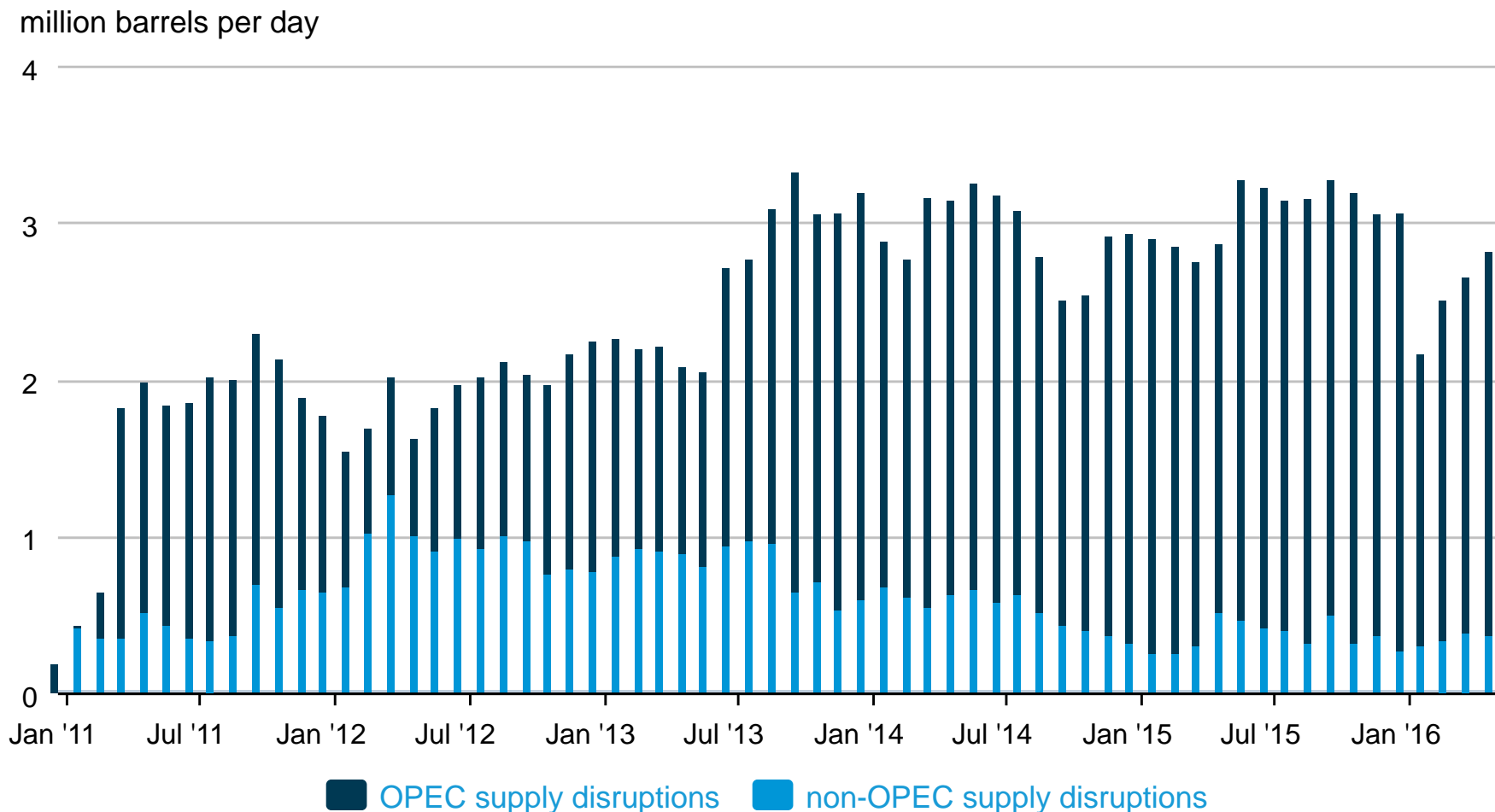
Sources: EIA Short Term Energy Outlook

# Changes in Saudi Arabia crude oil production can affect oil prices



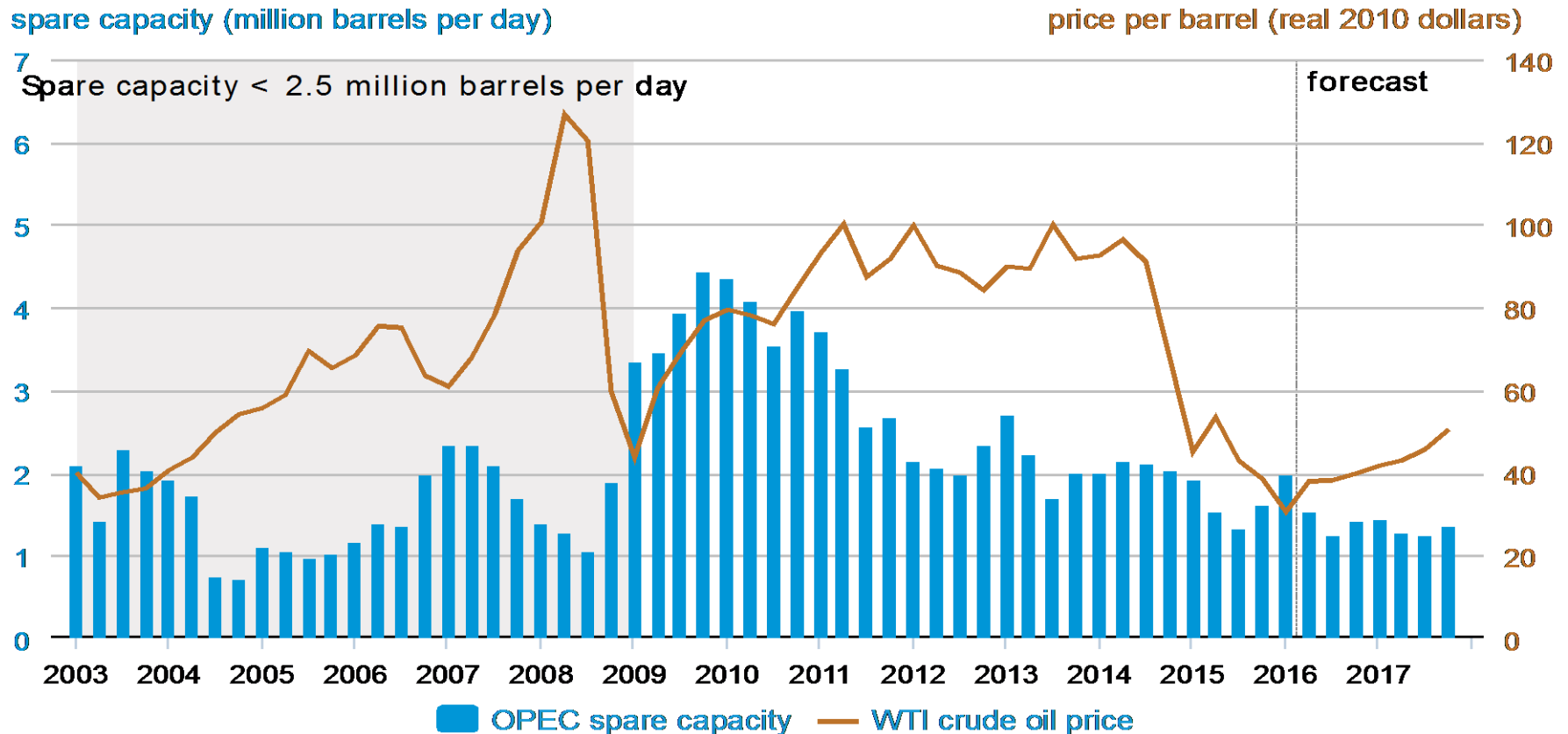
Sources: U.S. Energy Information Administration, Thomson Reuters

# Unplanned supply disruptions tighten world oil markets and push prices higher



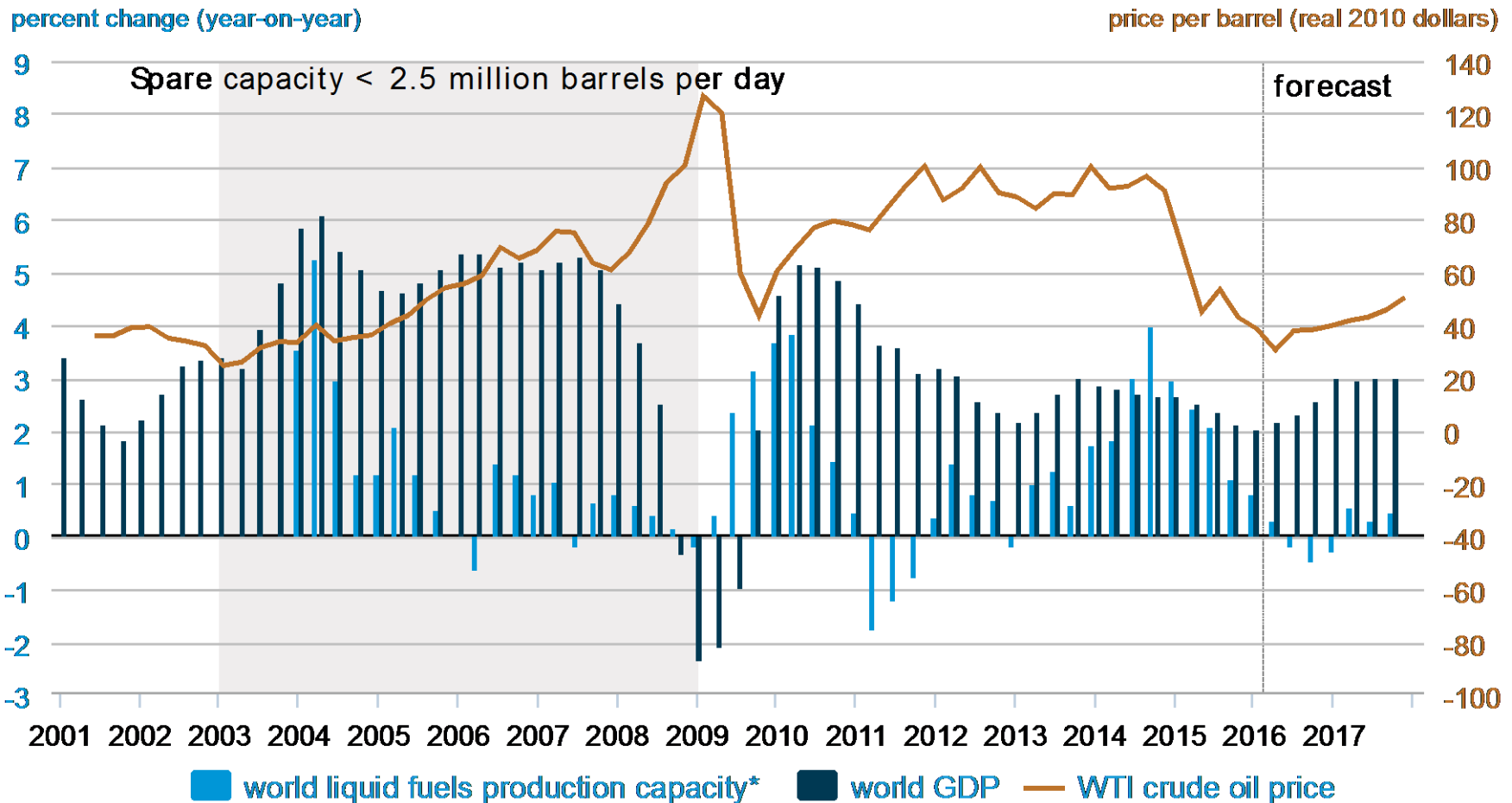
Sources: U.S. Energy Information Administration

During 2003-2008, OPEC's spare production levels were low, limiting its ability to respond to demand and price increases



Sources: EIA Short Term Energy Outlook, Thomson Reuters

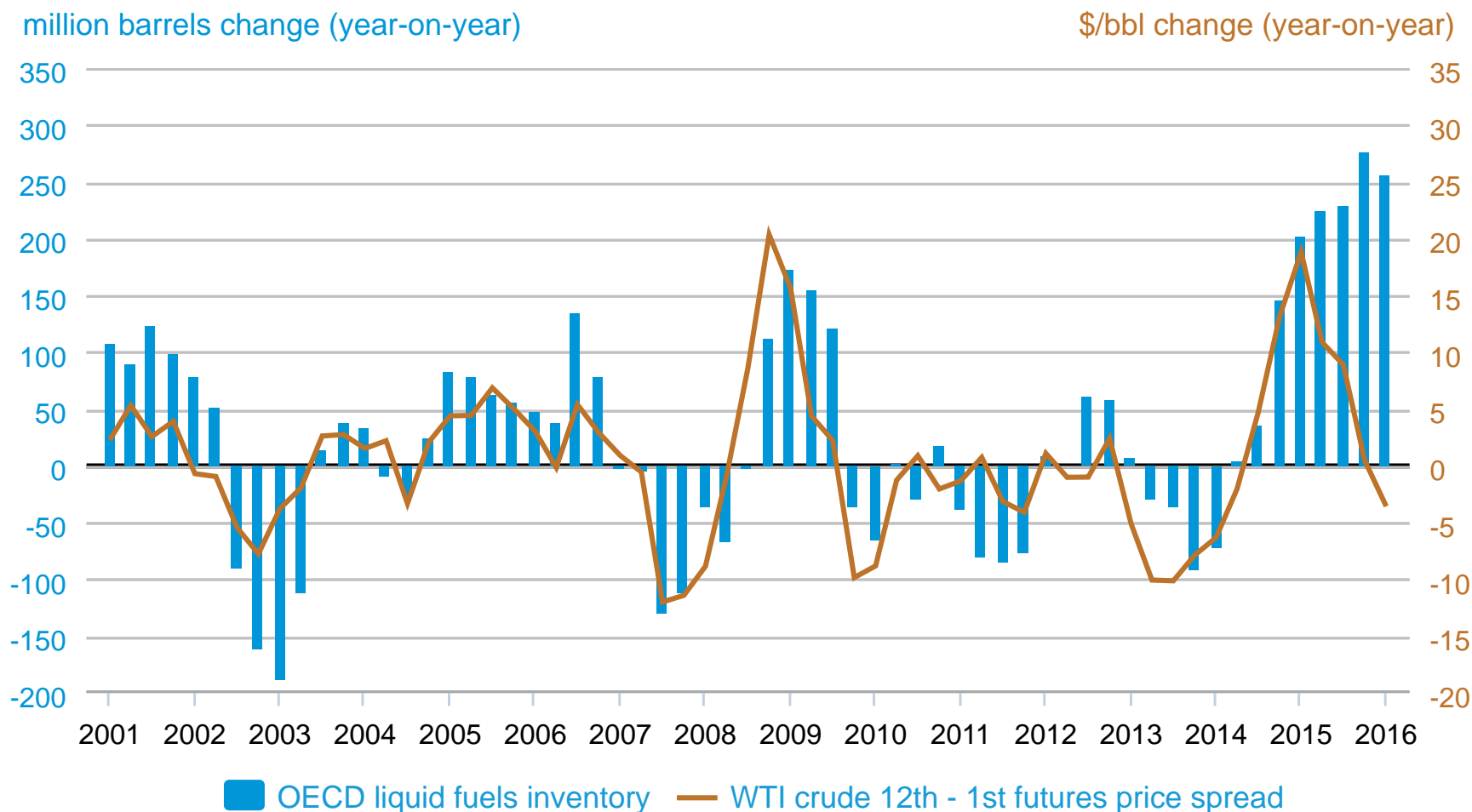
The years 2003-2008 experienced periods of very strong economic and oil demand growth, slow supply growth and tight spare capacity



\*World capacity = OPEC capacity plus non-OPEC production

Sources: EIA Short Term Energy Outlook, Thomson Reuters

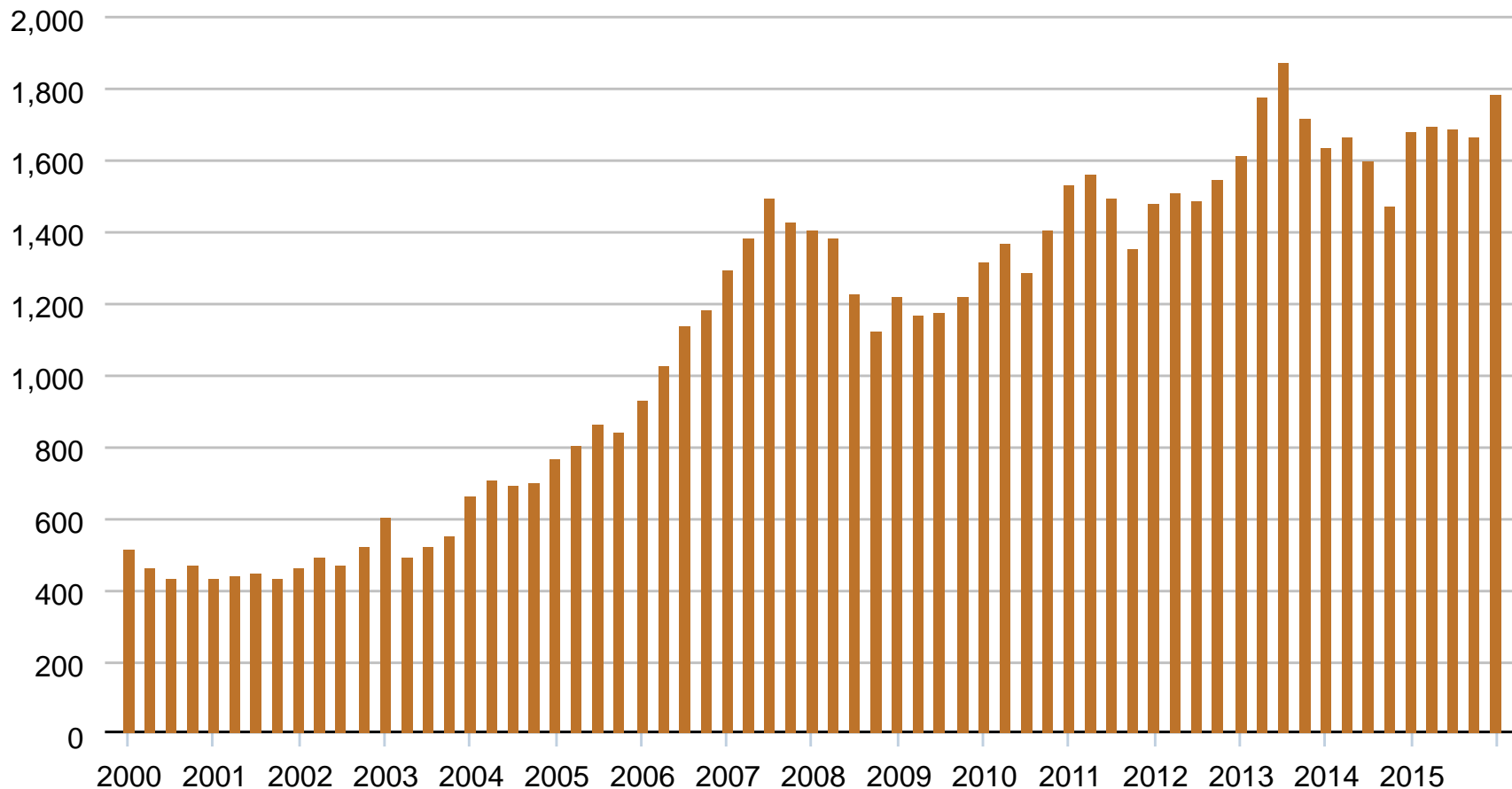
# Inventory builds go hand-in-hand with increases in future oil prices *relative to* current prices (and vice versa)



Sources: EIA Short Term Energy Outlook, Thomson Reuters

# Open interest in crude oil futures grew over the last decade as more participants entered the market

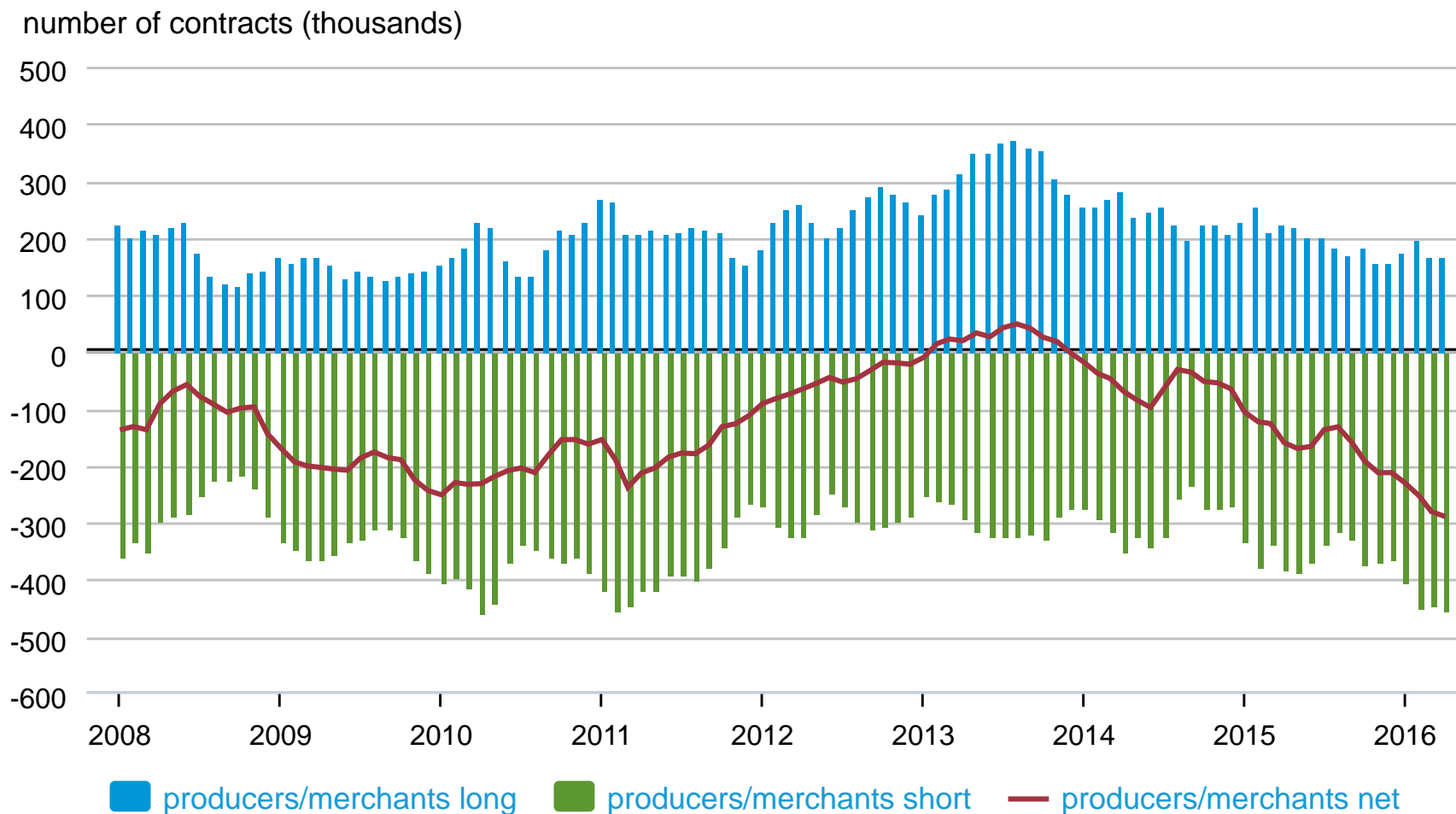
number of contracts (thousands)



Source: Bloomberg

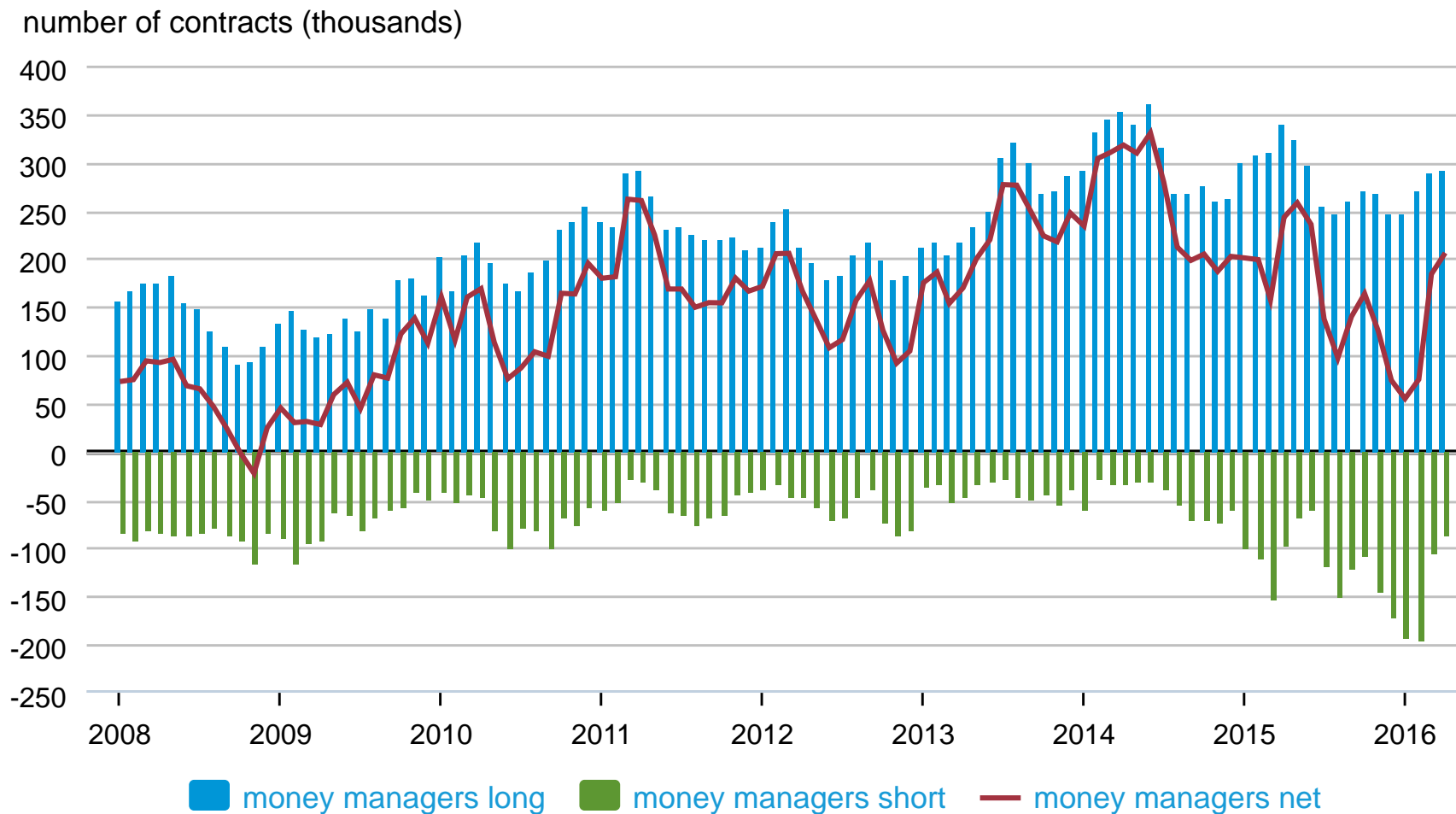


## Physical participants' (producers, merchants, processors, and end users) U.S. futures market contract positions



Source: CFTC Commitment of Traders

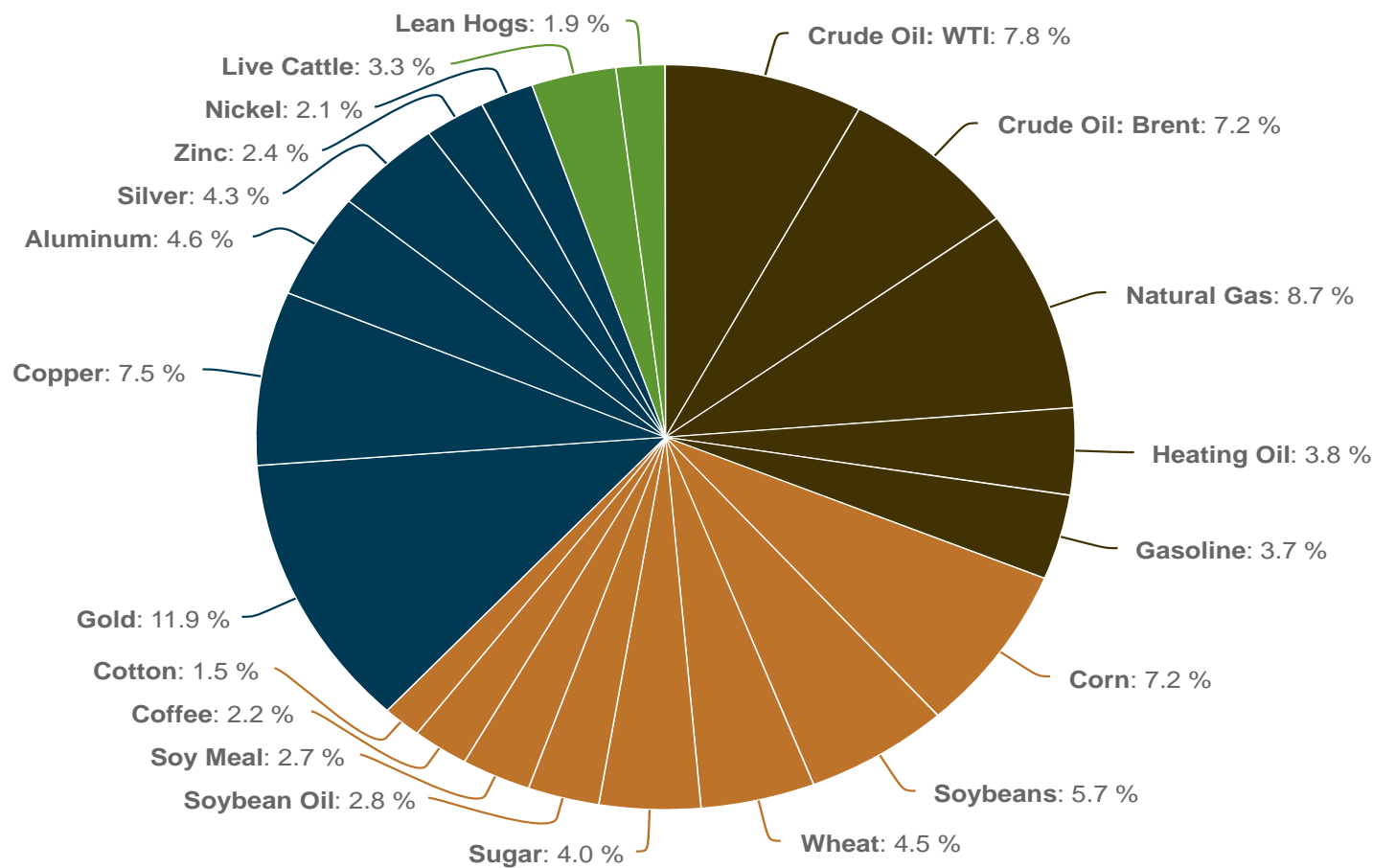
# Money managers tend to be net long in the U.S. oil futures market



Source: CFTC Commitment of Traders

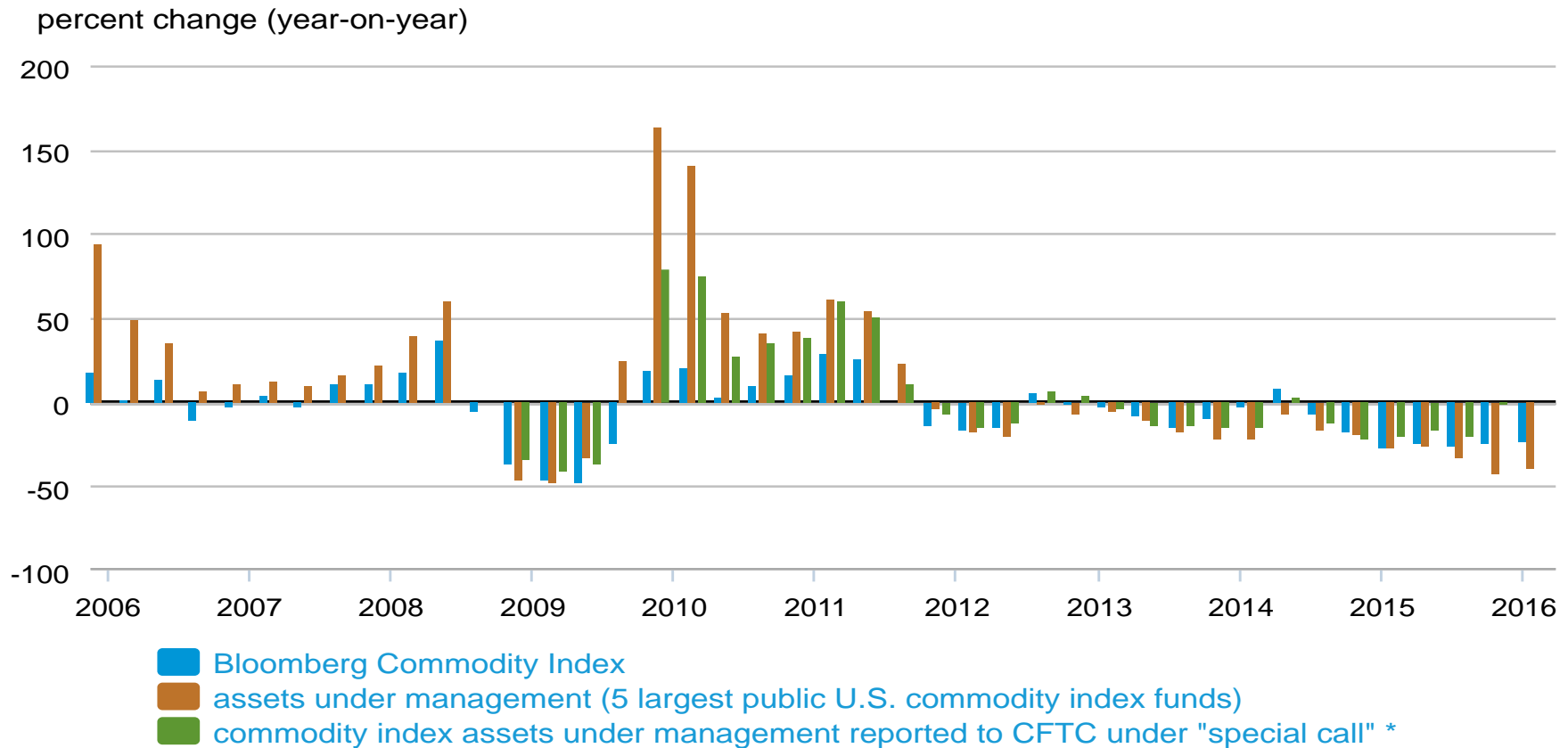
# Crude oil plays a major role in commodity investment

2015 Target Weights of the Bloomberg Commodity Index



Source: Bloomberg

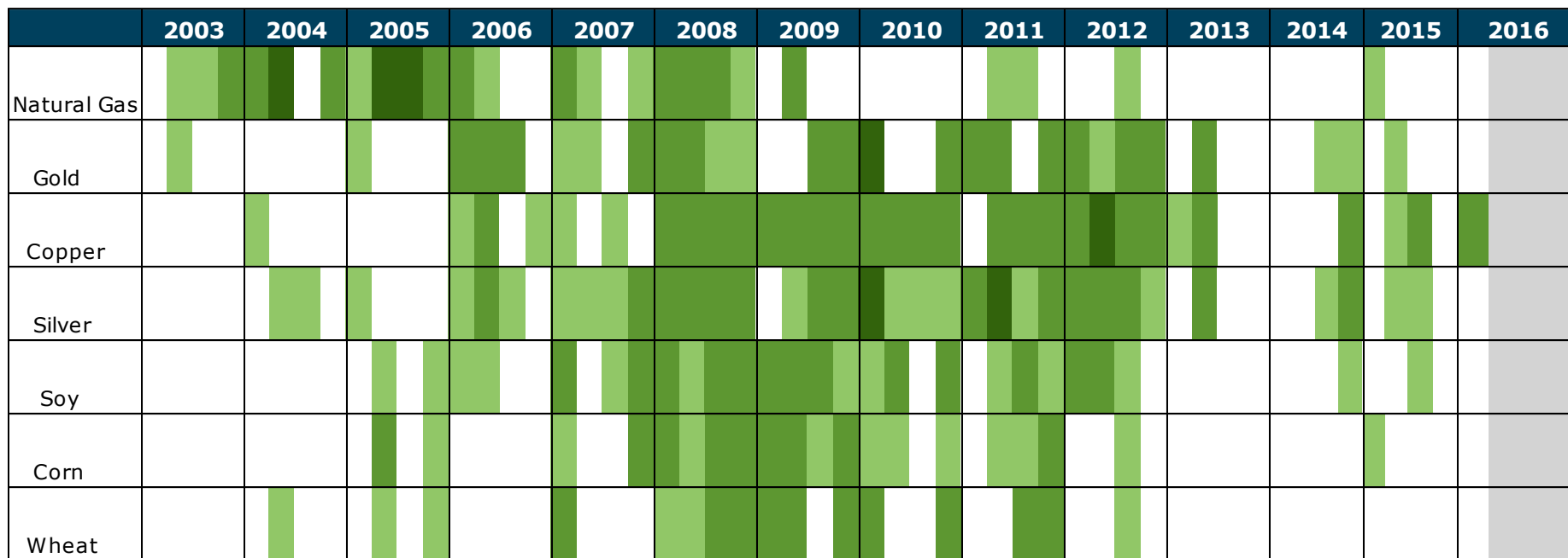
# Commodity index investment flows have tended to move together with commodity prices



\* Note: CFTC discontinued the collection of index investment data in November 2015.

Source: Bloomberg, Commodity Futures Trading Commission (CFTC)

## Correlations (+ or -) between daily price changes of crude oil futures and other commodities generally rose in recent years



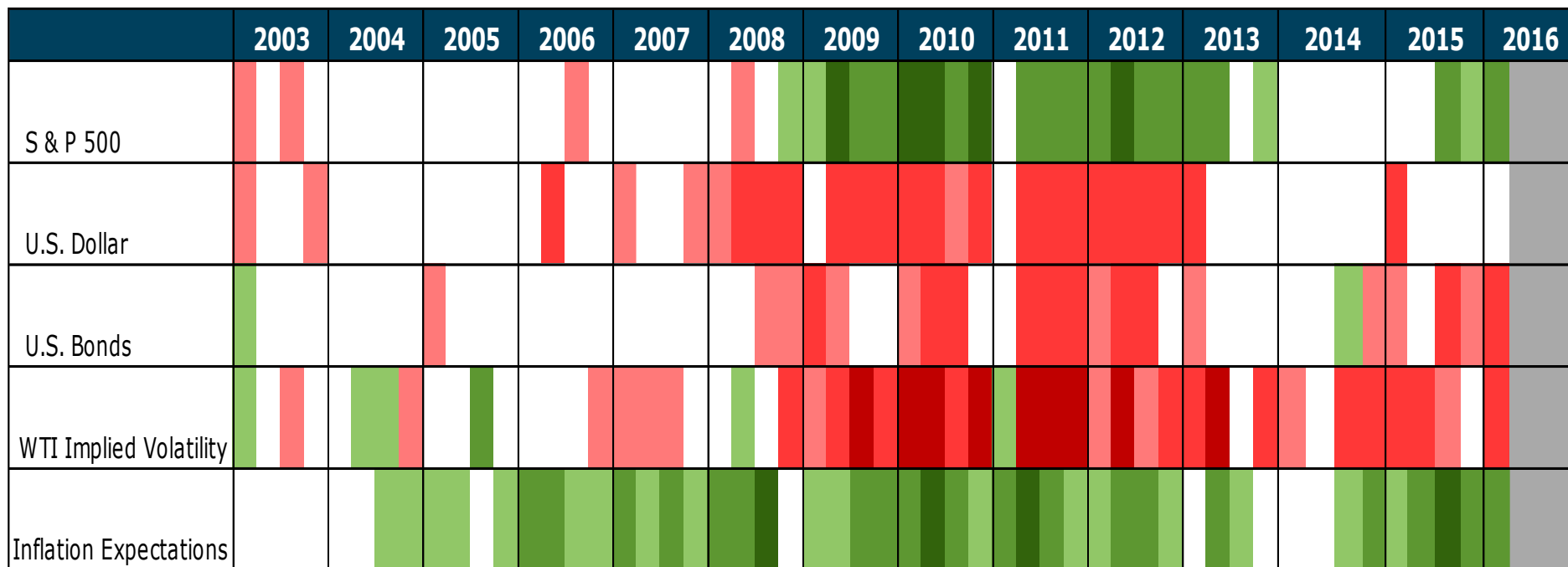
< -0.65
-0.65 to -0.4
-0.4 to -0.25
-0.25 to 0.25
0.25 to 0.4
0.4 to 0.65
> 0.65

Negative correlation

Positive correlation

Note: Correlations computed quarterly

## Correlations (+ or -) between daily returns on crude oil futures and financial investments have also strengthened



Note: Correlations computed quarterly

# For more information

U.S. Energy Information Administration home page | [www.eia.gov](http://www.eia.gov)

Short-Term Energy Outlook | [www.eia.gov/steo](http://www.eia.gov/steo)

Annual Energy Outlook | [www.eia.gov/aeo](http://www.eia.gov/aeo)

International Energy Outlook | [www.eia.gov/ieo](http://www.eia.gov/ieo)

Monthly Energy Review | [www.eia.gov/mer](http://www.eia.gov/mer)

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