Effects of low oil prices

For

Center for Strategic and International Studies

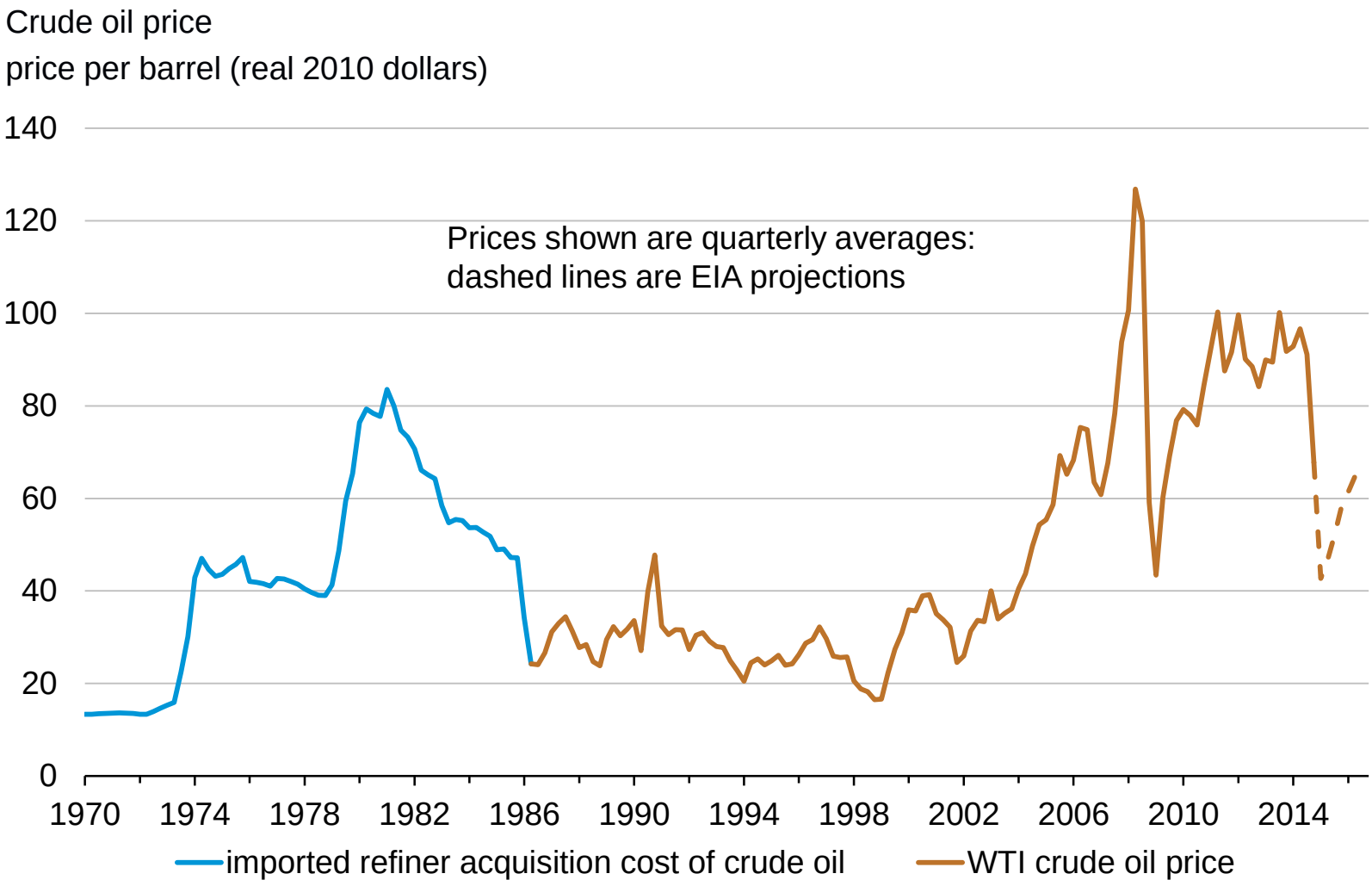
February 26, 2015 | Washington, DC

By

Adam Sieminski

U.S. Energy Information Administration

Historical and projected oil prices



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

Key takeaways

Oil prices: EIA's forecast for Brent averages $58/b in 2015 and $75/b in 2016. The market-implied 95% confidence band for Brent (estimated from WTI futures and options prices) is extremely wide – with a range from $35/b to $100/b across 2015-2016.

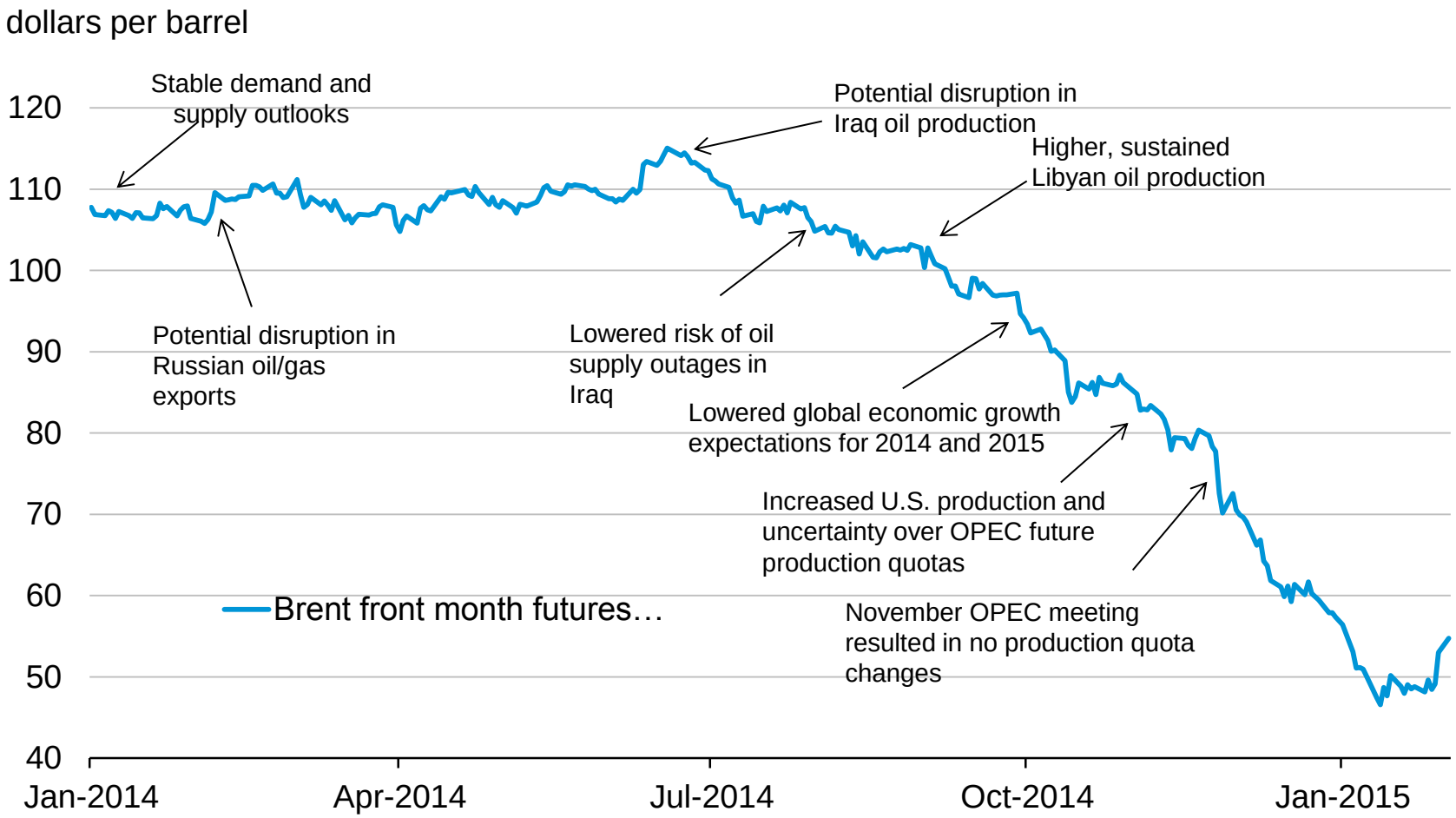
Demand: Non-OECD Asia accounts for more than 50% of forecast liquids consumption growth of roughly 1 million b/d both 2015 and 2016; lower demand growth is a major a downside risk to the price forecast

U.S. oil production: Lower-48 oil production in 4Q2015 and 1Q2016 is only slightly above its 4Q2014 level; however, offshore production continues to grow steadily

The economy and consumers: EIA's energy forecast reflects a U.S. economic growth outlook for 2015-16 that is somewhat stronger than 2013-14 experience.

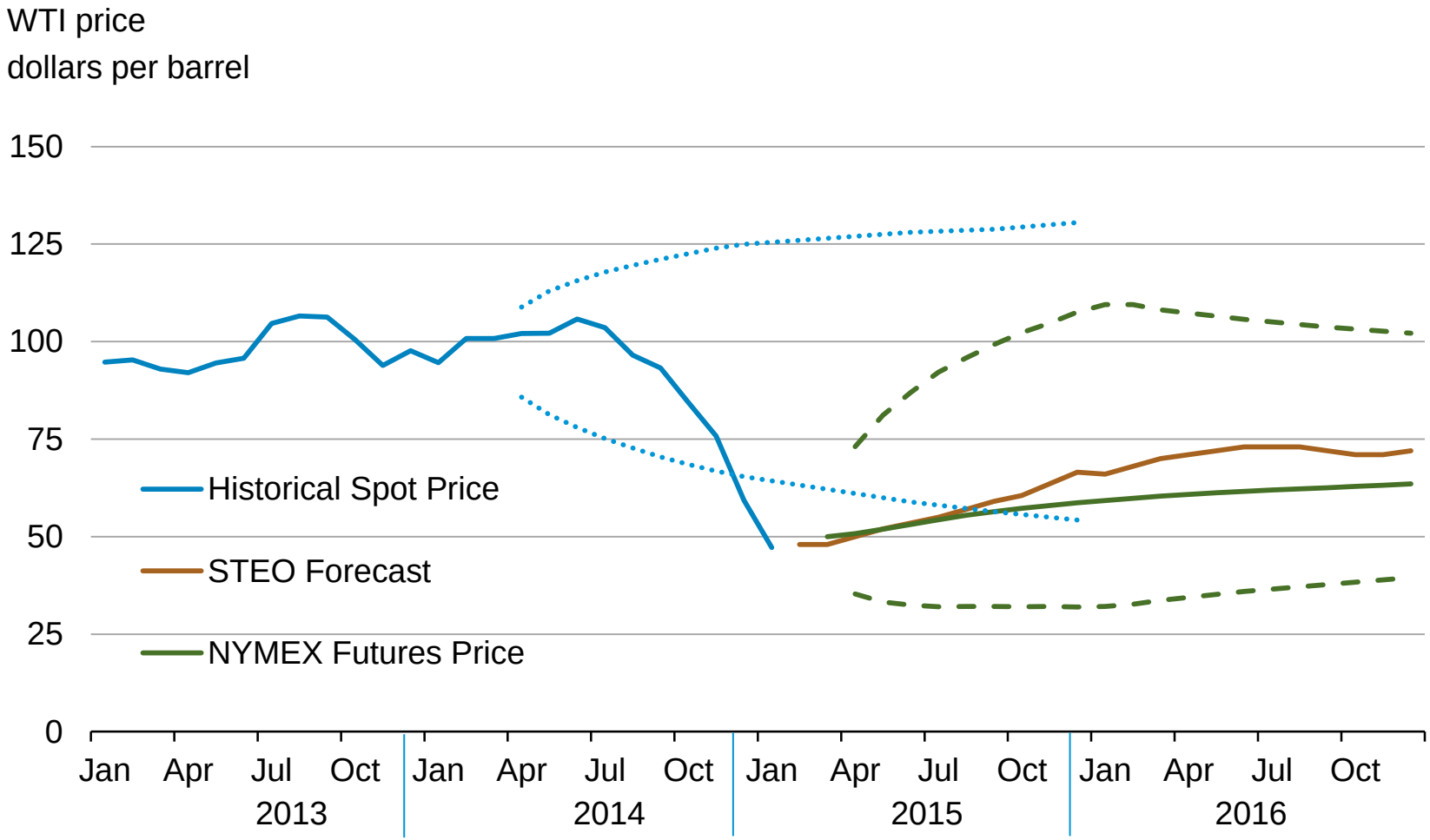
- Relatively low oil prices and increased energy efficiency Energy expenditures as a share of GDP are forecast at 6.2% in 2015, their lowest level since 2002, reflecting both lower oil prices and energy efficiency.
- Average U.S. household (20,800 miles of vehicle travel) projected gasoline spending is $750 less in 2015 than in 2014, and about $450 less in 2016 than in 2014.

Brent crude oil prices were relatively stable through the first half of 2014; increased oil supply and lower global economic growth expectations lowered prices from July 2014 to January 2015



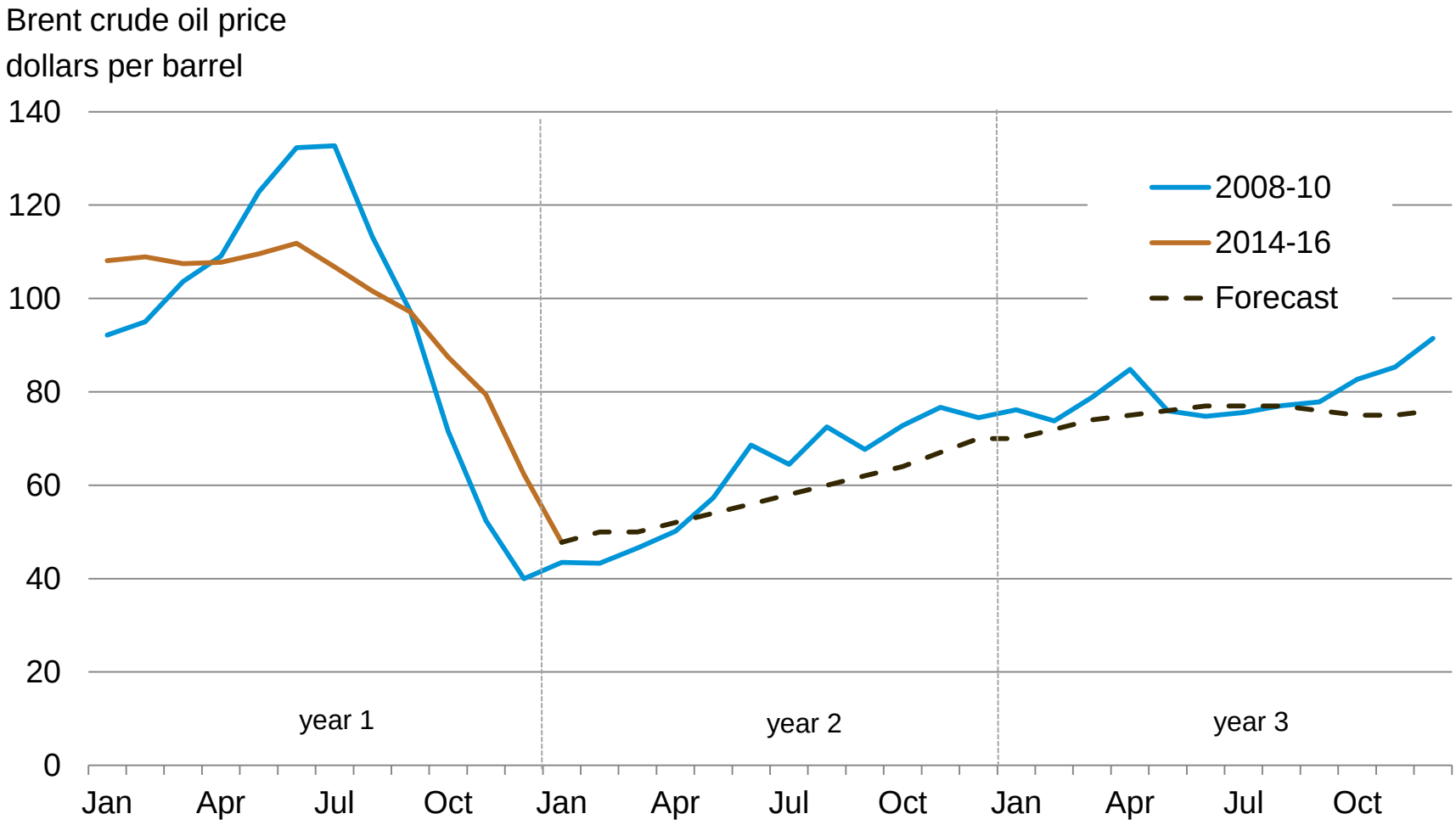
Source: EIA, Bloomberg

Oil prices rise from mid-2015 through mid-2016 in EIA's forecast – however, the market-implied confidence band is very wide



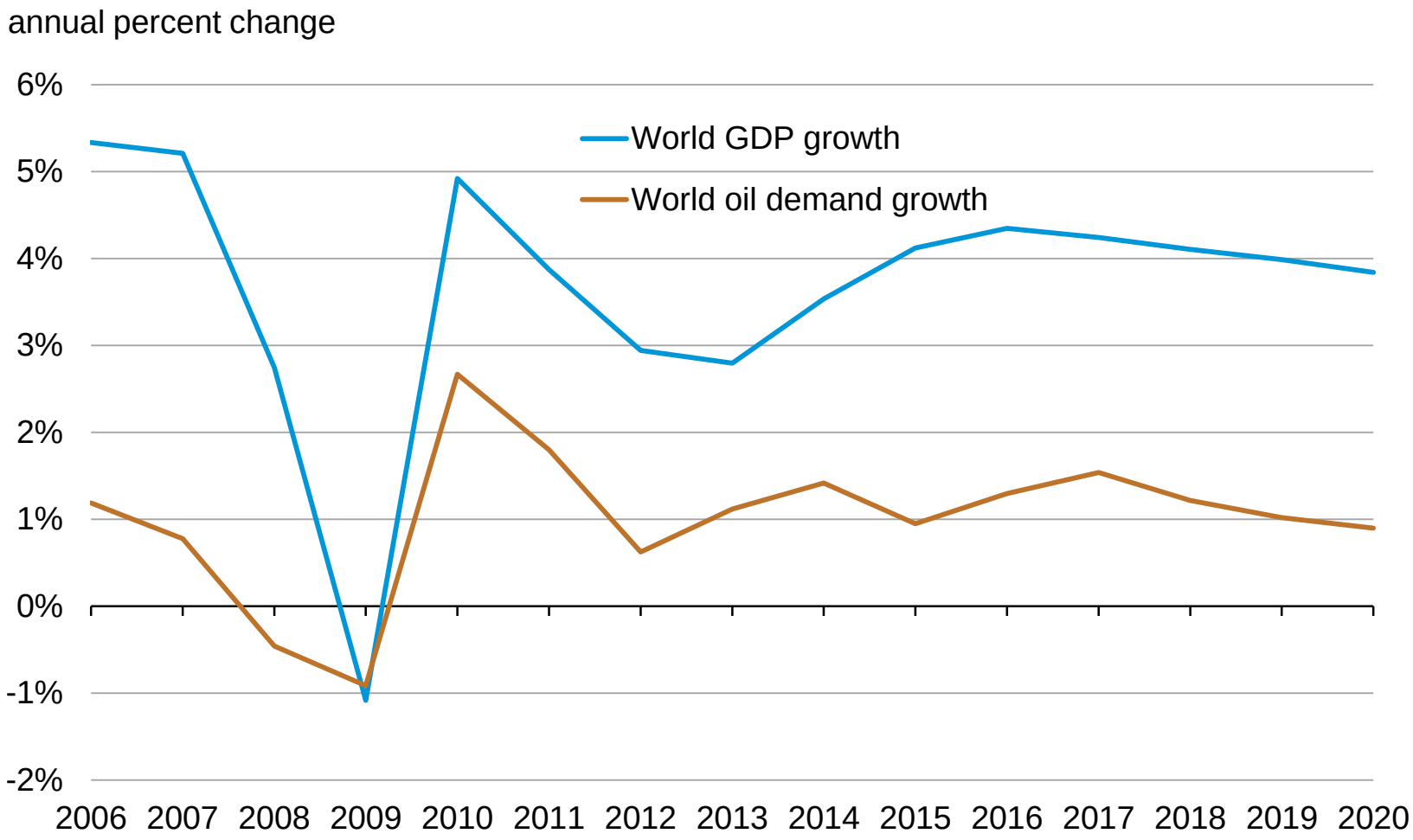
Source: EIA, Short-Term Energy Outlook, February 2015

EIA forecast oil price path is similar to trajectory of 2008-10 price recovery (just a comparison, not a factor in developing the forecast)



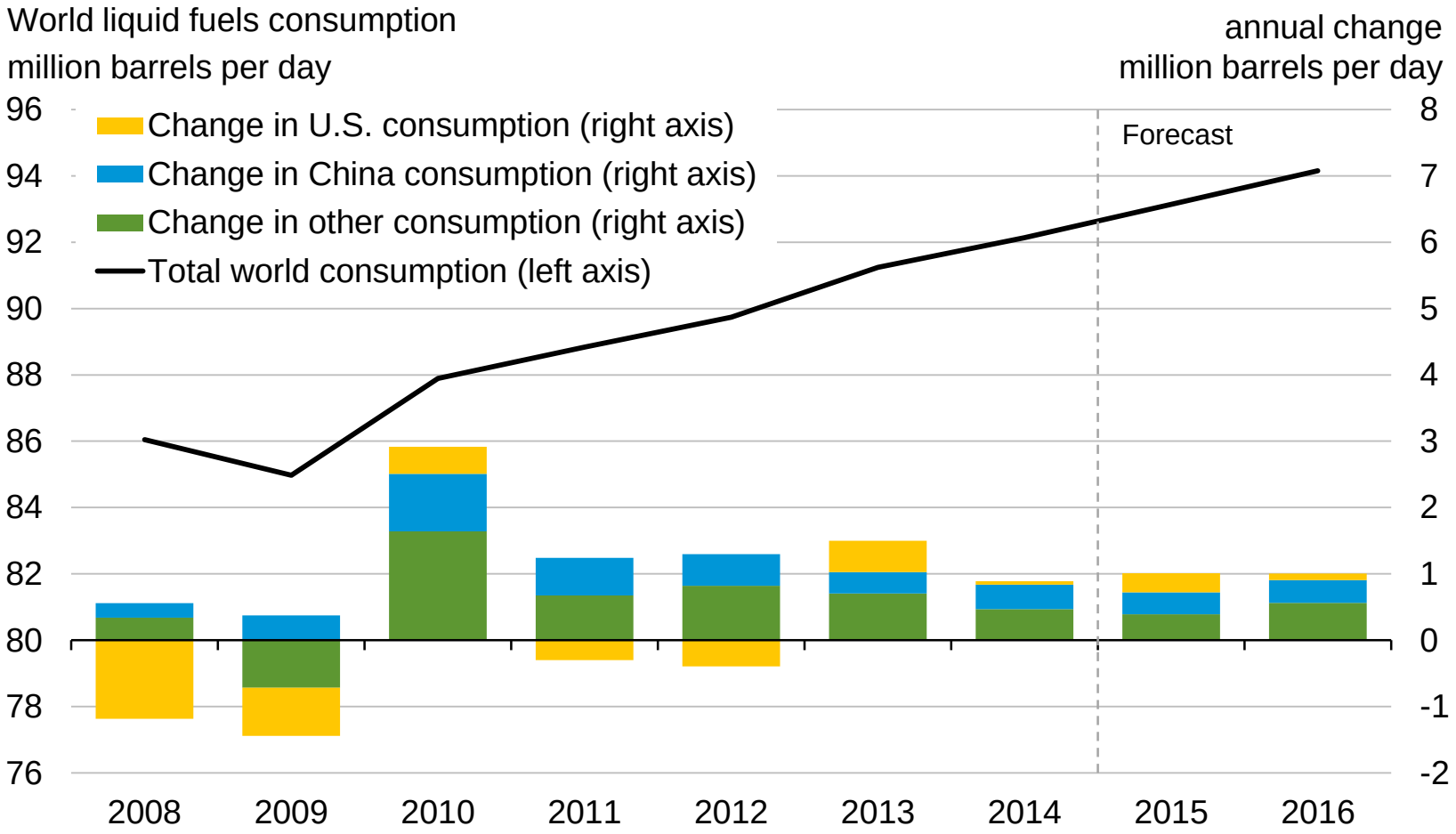
Source: EIA, Short-Term Energy Outlook, February 2015

Global oil demand tracks world GDP growth



Source: U.S. Energy Information Administration, International Energy Outlook 2014

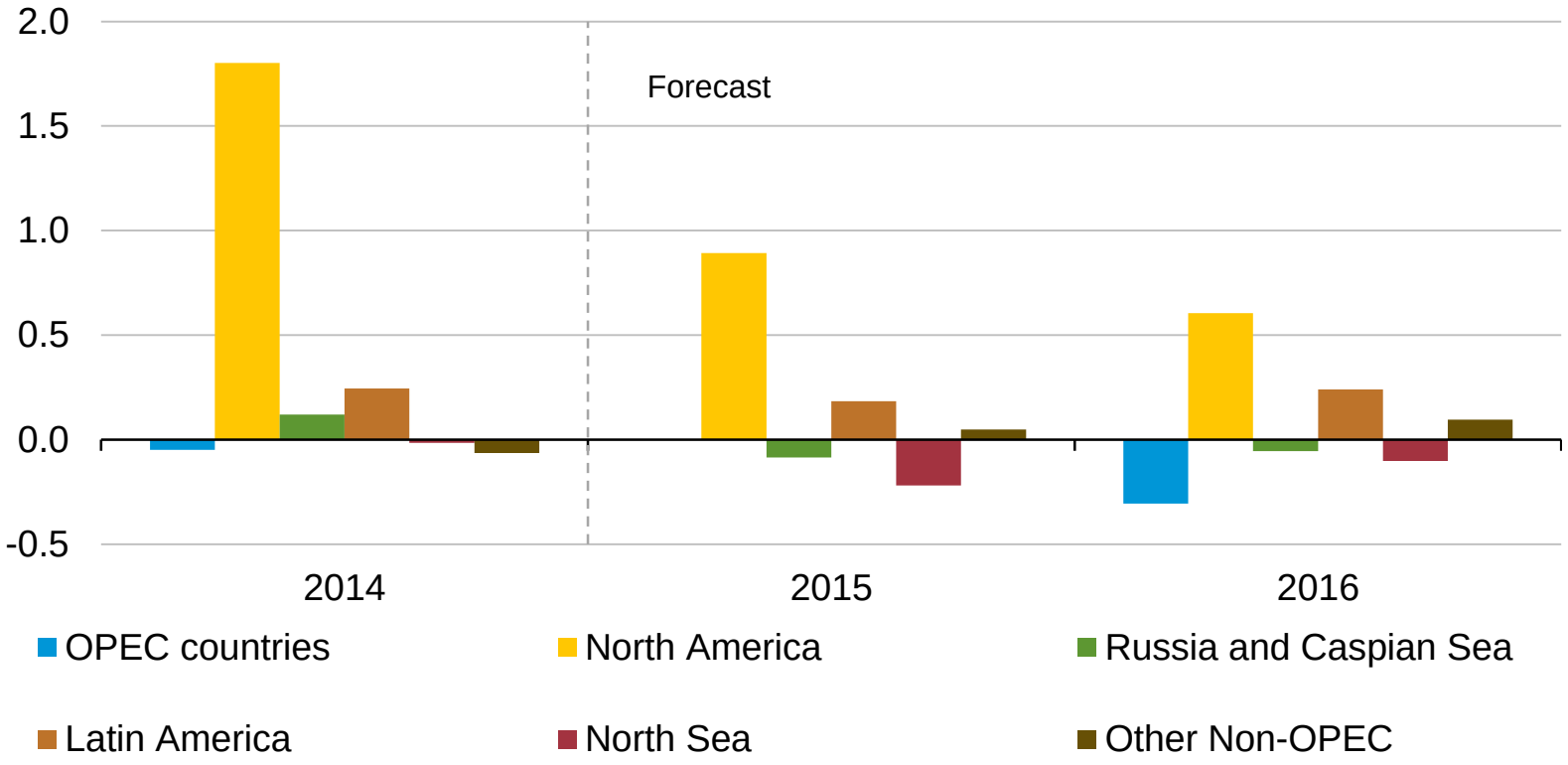
Global liquids consumption growth is forecast at 1.0 million bbl/d in both 2015 and 2016



Source: EIA, Short-Term Energy Outlook, February 2015

North American oil production growth slows with lower oil prices but remains the main driver of global production growth

World crude oil and liquid fuels production growth
million barrels per day



Source: EIA, Short-Term Energy Outlook, February 2015

Lower oil prices are expected to provide an immediate boost to the economy

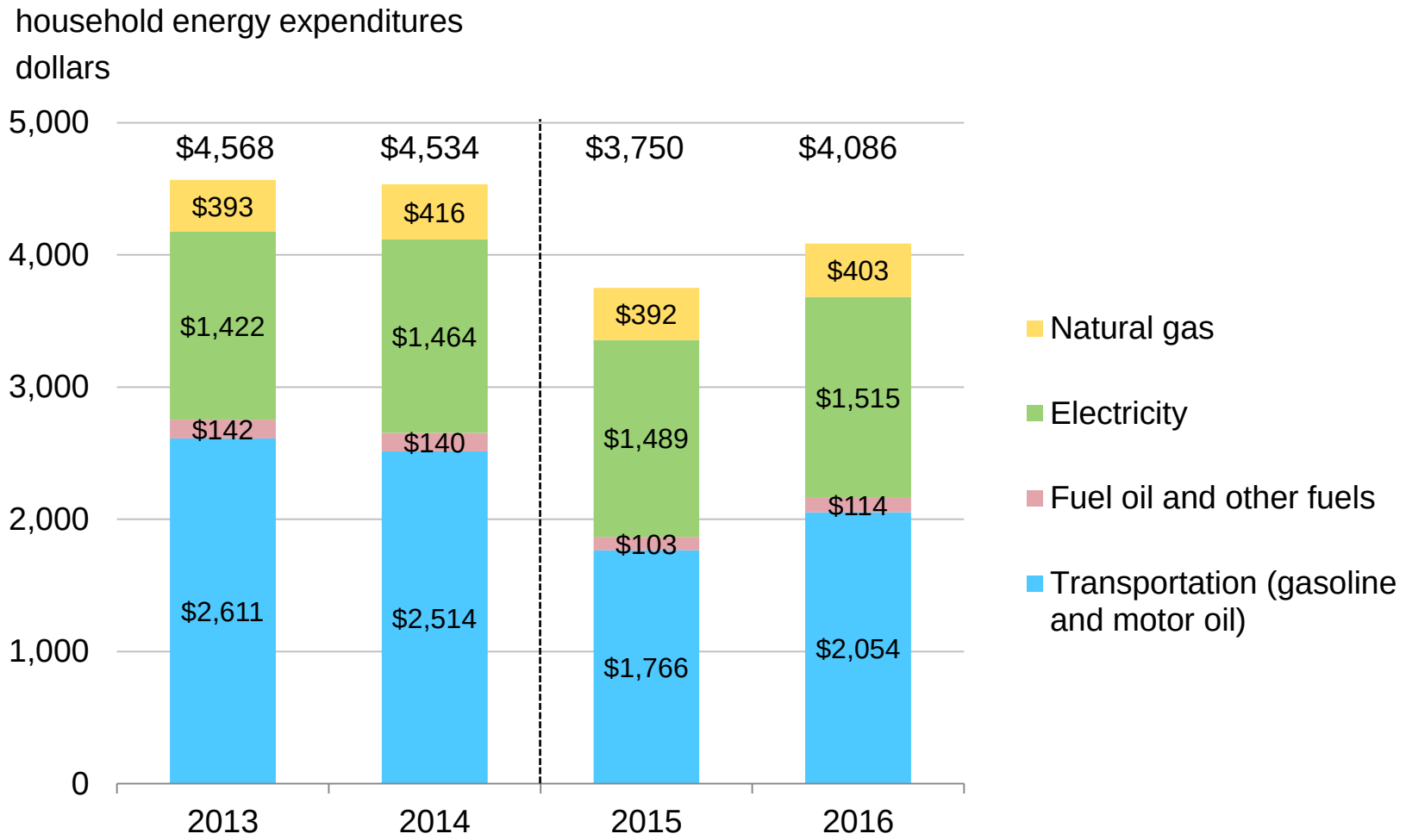
- Starting from a base price of roughly $100 per barrel, a $10 drop in oil prices sustained for four quarters is estimated to raise real GDP by about 0.22% above baseline; if the drop in oil prices is sustained for a second year, the level of real GDP in that year averages 0.34% above baseline

- Estimated GDP impacts presented above are roughly scalable for drops of $20 or $30 per barrel; in the latter case the average level of GDP in the second year would be roughly 1% above baseline.

- If oil prices drop and then return to previous levels, GDP begins to return as well; the speed in which GDP adjusts depends on the oil price trajectory

- Estimated percentage impacts of an oil price drop on consumer prices and unemployment are generally smaller than impacts on GDP, and also tend to decrease in the second year as increased demand puts pressure on prices of other goods

Average household energy expenditures fall by 17% in 2015, then rebound somewhat in 2016 (based on EIA price forecast)



Sources: 2013 expenditures and income from BLS Consumer Expenditure Survey. The average household in the BLS survey (called a consuming unit) averages 2.5 people and 1.3 income earners. Expenditures for 2014-16 based on average prices from EIA Short-Term Energy Outlook, February 2015

Various events could lead to changes in global supply or demand that could push future crude oil prices higher or lower than the STEO forecast

	Event
Increase Prices	Social unrest in Venezuela leads to supply disruptions
	ISIL disrupts Iraqi exports
	Iranian sanctions are tightened
	Social unrest in oil-dependent countries leads to supply disruptions
	OPEC cuts output more than projected
Decrease Prices	World economic growth is lower than projected (e.g., China)
	Saudi Arabia keeps production at 9.6-9.7 million bbl/d in 2016
	Reduction in unplanned production outages
	Iranian sanctions are lifted

North American energy cooperation

Tri-lateral cooperation: Canada, Mexico, & United States memorandum of understanding signed 12/15/2014

1) Reconciliation of import and export information on energy flows. The working group would develop a cross reference for terminology and a table of conversion factors across the three countries. EIA would propose subcategories of+ crude oil, refined products, natural gas and electricity.

2) GIS mapping. The working group would establish a standard format, sourcing protocols and a mechanism for file/data sharing. Each party would provide its public map layers to each partner, while asking them to provide theirs. It would then be up to each party to decide if and how they want to display the information they receive from the other parties.

3) Outlooks for crossborder flows of fuels. EIA would propose that we begin by sharing information among the three partners regarding recent historical data and outlooks for cross border flows of oil, natural gas, and electricity. The information exchange would also provide some brief information on broader energy measures -- production and consumption of the energy commodities – as well as information on some of the key outlook drivers – economic and population growth.

North American border crossing points for electricity and oil and natural gas pipelines

Source: U.S. Energy Information Administration based on data from various published studies. Canada and Mexico plays from ARI.

JULY 9, 2013

EIA releases energy infrastructure map with real-time storm information

Energy infrastructure map with real-time storm information

Source: U.S. Energy Information Administration, Energy Disruptions map.
Note: A detailed legend can be found on the Energy Disruptions website.

With peak hurricane season approaching, the U.S. Energy Information Administration (EIA) is introducing interactive maps that combine real-time data feeds from NOAA's National Hurricane Center with more than 20 map layers showing the nation's energy infrastructure and resources. This new tool, available around the clock on the EIA website, allows industry, energy analysts, government decision makers, and the American public to better see and understand the potential impact of a storm.

Every year, hurricanes and other extreme weather events threaten life and property. Hurricanes and tropical storms also affect the nation's energy infrastructure, especially when storm paths traverse offshore oil and natural gas production platforms and pipelines in the Gulf of Mexico, coastal refineries, processing plants, power plants, and energy import and export sites.

The new maps are available at EIA's Energy Disruptions site. The image above features the predicted path of tropical storm Chantal moving from the Caribbean's Leeward Islands toward the Atlantic coast of Florida. As the National Hurricane Center revises its predictions, the maps will be automatically updated.

For more information

U.S. Energy Information Administration home page | www.eia.gov

Annual Energy Outlook | www.eia.gov/aeo

Short-Term Energy Outlook | www.eia.gov/steo

International Energy Outlook | www.eia.gov/ieo

Monthly Energy Review | www.eia.gov/mer

Today in Energy | www.eia.gov/todayinenergy

State Energy Profiles | http://www.eia.gov/state

Drilling Productivity Report | http://www.eia.gov/petroleum/drilling/