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Administration

The Availability and Price of Petroleum and Petroleum Products Produced in Countries Other Than Iran

The fourth in a series of reports required by section 1245 (d)
(4) (A) of the National Defense Authorization Act for Fiscal
Year 2012

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Summary

- The oil market has tightened since the previous edition of this report, as global demand outpaced supply in July and August due largely to expected seasonal factors. Crude oil prices also increased in July and August relative to the months covered in the last report, released on June 26, 2012, but prices still remain lower than the first quarter average of this year.
- World oil inventories are estimated to have declined by an average of 1.2 million barrels per day (bbl/d) during July and August, due primarily to the seasonal peak in world oil demand. By comparison, at the same time last year, global inventories were being drawn down by 1.6 million bbl/d. This year's lower drawdown reflects higher production relative to July and August 2011, when the market was coping with the loss of Libyan oil (**Figure 1**).
- Crude oil prices reversed the downward trends seen in May and June this year (**Figure 3**) and the Brent market returned to backwardation, both indications of tightening oil markets. Over the five days ending on August 22, the price of the front-month futures contract for Brent crude oil averaged about \$114.77 per barrel, a \$23 per barrel increase from the June 20 – 26 average when prices were at their lowest level for 2012. The spread on the Brent 1st – 13th month contracts averaged about \$6 per barrel for the five days ending August 22, considerably higher than its 2012 low of -\$1.17 for the five day period ending June 26.
- Production from member states of the Organization of the Petroleum Exporting Countries (OPEC) has increased over the past year, especially in Libya and Iraq. Saudi Arabia, which acts as a balancing force in the global oil market, continues to produce at high levels (**Table 4**).
- Non-OPEC production in July-August 2012 is estimated to be 0.3 million bbl/d above the July-August 2011 level, led by North America and particularly the tight oil plays of the United States (**Table 3**). While total unplanned production outages in non-OPEC countries remain higher than normal, they have declined from the level reached in June (**Figure 2**).
- Global surplus capacity remains relatively tight by historical standards, and is estimated at 2.4 million bbl/d over the last two months (**Table 1**).
- Expectations that policymakers in the European Union (EU), China, and the United States would provide additional economic stimulus to counteract slowing growth have contributed to broadly stronger performance in risk assets, including rising crude oil prices over the past two months. The entry into force of both U.S. financial sanctions on entities that pay for Iranian oil through the Central Bank of Iran and an EU ban on oil imports from Iran and insurance of Iranian vessels carrying Iranian oil, recent threats by Iran to block oil from transiting the Strait of Hormuz, the possibility that Israel might act unilaterally against Iran's nuclear capabilities, and the other continuing conflicts in the Middle East have increased market anxiety, adding to upward price pressure.

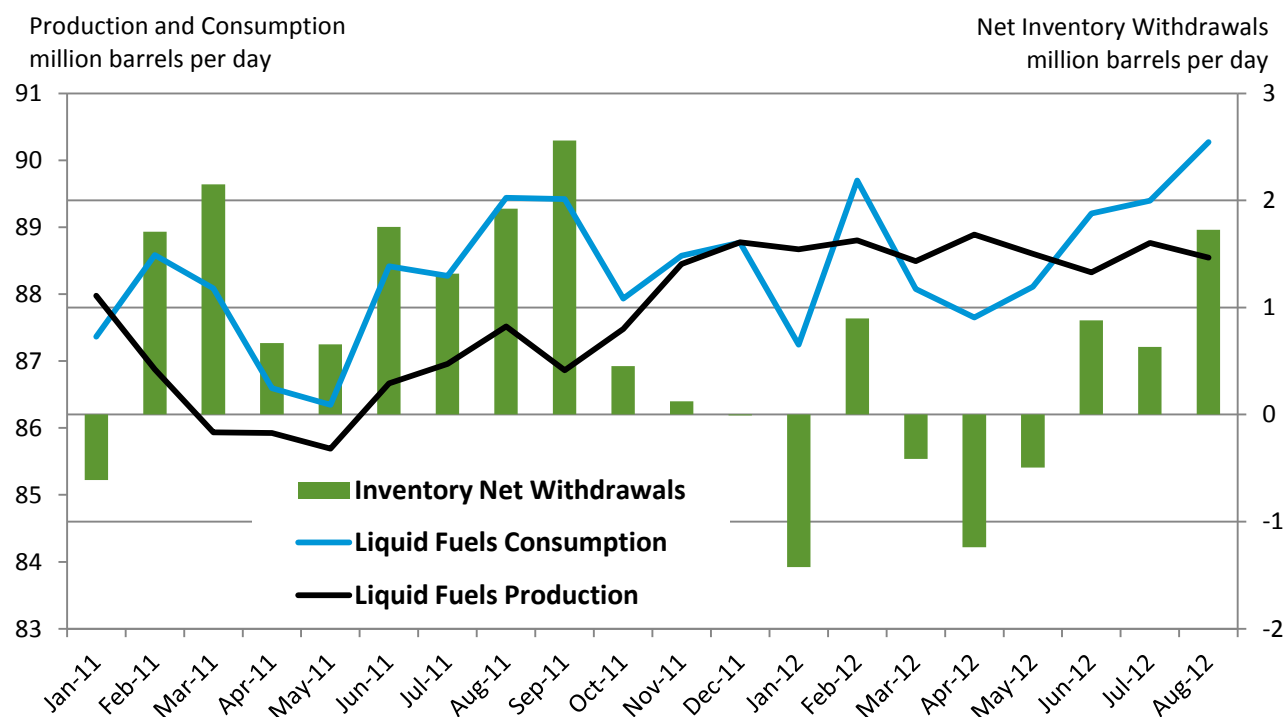
This is the fourth in a series of reports prepared in fulfillment of section 1245(d)(4)(A) of the National Defense Authorization Act (NDAA) for Fiscal Year 2012, which requires the U.S. Energy Information Administration (EIA) to "submit to Congress a report on the availability and price of petroleum and petroleum products produced in countries other than Iran in the 60-day period preceding the

submission of the report.” EIA consulted with the U.S. Department of the Treasury, the U.S. Department of State, and the intelligence community in the process of developing this report. Readers are encouraged to consult previous editions of this report for detailed background and contextual information not repeated here.

Estimates of Production, Consumption, Surplus Capacity and Inventories

EIA estimates that global liquid fuels¹ production in July and August 2012 averaged 88.7 million bbl/d, an increase of 1.4 million bbl/d from the same time period last year. Global liquid fuels consumption exceeded production, due to a seasonal upturn in demand, resulting in a 1.2 million bbl/d draw in oil stocks in July and August. The estimated net withdrawal of global stocks was larger in the comparable year-ago period, when the market was coping with the loss of Libyan oil (**Table 1 and Figure 1**). The increase in consumption in July and August relative to preceding months is consistent with the expected seasonal peak in world demand during the third quarter, which reflects both the United States driving season and increased oil use for electricity generation in the Middle East. Inventories in the United States fell by an average of 0.2 million bbl/d in July and August. Over that same time period, commercial inventories in other member states of the Organization for Economic Cooperation and Development (OECD) declined by an estimated 0.4 million bbl/d (**Table 2**).

Figure 1. World Liquid Fuels Production and Consumption and Net Inventory Withdrawals, January 2011-August 2012



Source: U.S. Energy Information Administration

¹ The term “liquid fuels” encompasses petroleum and petroleum products and close substitutes, including crude oil, lease condensate, natural gas plant liquids, biofuels, coal-to-liquids, gas-to-liquids, and refinery processing gains.

During July and August, EIA estimates that liquid fuels production and consumption in Iran were 3.3 million bbl/d and 1.7 million bbl/d, respectively (**Table 1**). Iran's crude oil production capacity has eroded in recent years, due to its inability to carry out investment projects that are necessary to offset the natural decline in production from existing wells. However, the decline in Iranian exports and production has recently accelerated, contemporaneous with the entry into force of additional sanctions this summer. EIA estimates that Iran's total liquids production capability has fallen, although lease condensate and natural gas liquids production continues to remain flat. The change in global oil inventories includes the change in Iranian oil inventories, including any growth due to sanctions that have disrupted Iranian oil sales.

In July and August 2012, EIA estimates consumption of petroleum and petroleum products in countries other than Iran averaged 86.4 million bbl/d. During the same period, EIA estimates that production of petroleum and petroleum products in countries other than Iran averaged 83.1 million bbl/d, which is 3 million bbl/d or almost 4 percent higher than the three-year annual average from 2009-2011 (**Table 1**). The increase in global production compared with the three-year average can be attributed largely to a combination of increased output from some members of the Organization of the Petroleum Exporting Countries (OPEC), continued growth in North American oil supply, and lower aggregate disruption to non-OPEC production. Tables 3 and 4 provide further country-level reporting on supply estimates.

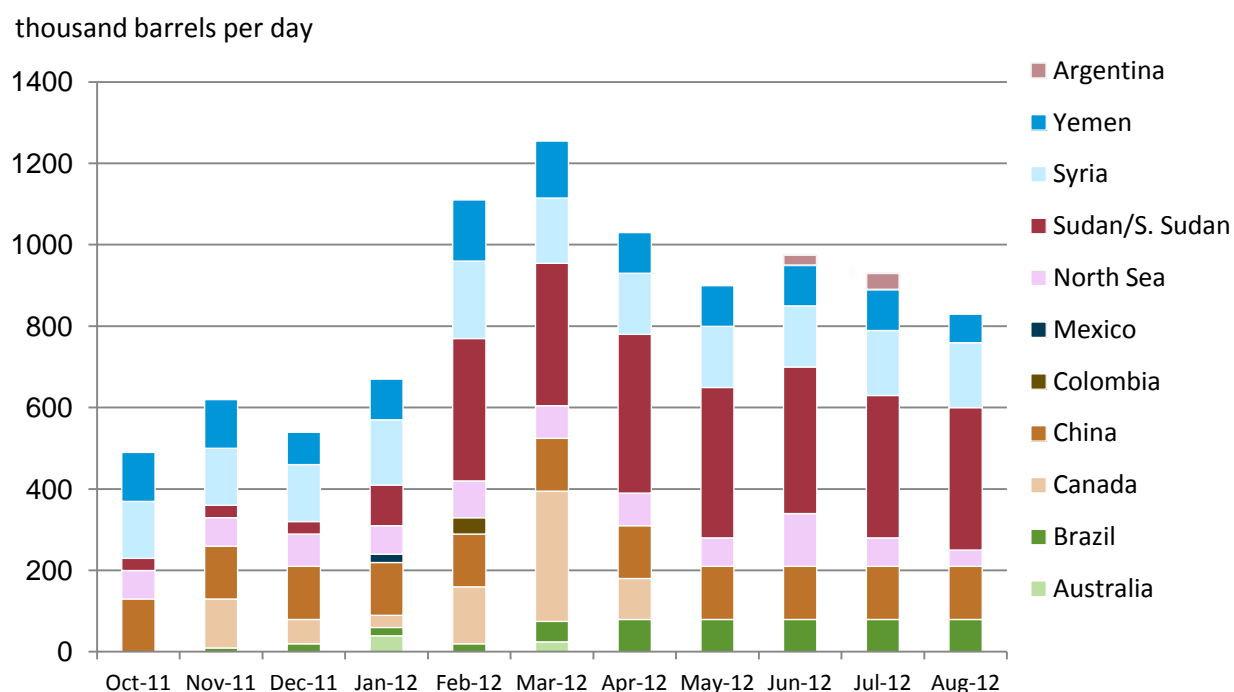
Much of the growth in OPEC supply in 2012 relative to last year derives from Iraq, Libya, and Saudi Arabia. Iraq's estimated average production level of 3.1 million bbl/d in July and August is the country's highest in recent decades, as new infrastructure has facilitated increased exports from its large southern fields and more than offset disruptions to production in the north due to pipeline sabotage and political disagreements between the central government and the Kurdish Regional Government. Though Libyan oil production and exports were briefly curtailed in early July, the country's oil production and exports have been restored to approximately 1.5 million bbl/d in August. This is a marked change from the same time last year, when the International Energy Agency coordinated a release of oil stocks to alleviate the market tightness caused by a near-complete disruption to Libyan supply. Meanwhile, Saudi Arabia continued to produce at relatively high levels, about 0.9 million bbl/d more than its three-year average (**Table 4**).

The United States is the largest source of non-OPEC liquids production growth over the past year and the largest source of liquids production growth relative to the recent three-year average for any country. Due to the continued production growth in onshore tight oil plays, U.S. crude oil production averaged 6.3 million bbl/d in July and August, as total liquids production reached 10.9 million bbl/d. Many of the other countries that are producing notably above three-year averages are also located in the Western Hemisphere, including Brazil, Canada, and Colombia (**Table 3**). Above-average output in Brazil reflects the seasonal upsurge in ethanol production, which peaks in the third quarter in accordance with that country's sugarcane harvest.

Unplanned non-OPEC disruptions declined over the last two months, from almost 1 million bbl/d in June to around 0.8 million bbl/d in August, mainly due to the temporary completion of some unplanned maintenance activities in the North Sea as well as the repair of the Marib pipeline in Yemen, which allowed connected fields to resume some production (**Figure 2**). An above-normal volume of non-OPEC

production is still offline due to unrest and a related embargo in Syria. Production in South Sudan is still completely offline, though South Sudan hopes to resume some oil production by the end of this year after recently reaching a conditional agreement with Sudan on oil export fees. The agreement, however, is contingent on achieving a broader accord on security matters, which have afflicted the two sides since even before South Sudan's independence.

Figure 2. Estimated Unplanned Production Disruptions Among non-OPEC Producers, October 2011 – August 2012



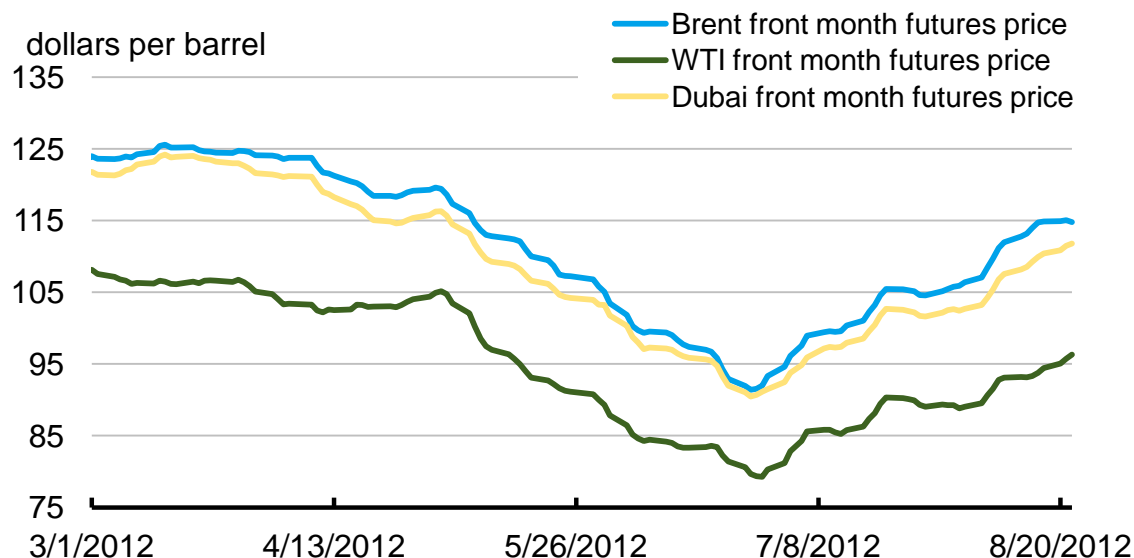
Source: U.S. Energy Information Administration

EIA estimates that global surplus crude oil production capacity was 2.4 million bbl/d in July and August, only slightly higher than revised estimates for May and June (**Table 1**). Surplus production capacity in July and August was quite modest by historical standards (e.g. 3.6 million bbl/d average from 2009 to 2011), and especially when measured as a percentage of global oil production and consumption. Surplus capacity must also be considered in the context of current geopolitical uncertainties, including, but not limited to, the situation in Iran.

Crude Oil and Petroleum Product Prices

In contrast to data on petroleum and petroleum product volumes, price data is available on a real-time or near-real-time basis.² Over the last 60 days, crude oil prices have reversed the downward trends seen in May and June this year (**Figure 3**). Over the five days ending on August 22, the price of the front-month futures contract for Brent crude from the North Sea, a proxy for the global oil price, averaged about \$114.77 per barrel, a \$23 per barrel increase from its average over the June 20-26 period when prices were at their lowest level for 2012.

Figure 3. Front Month Crude Oil Futures Prices



Note: All prices represent rolling 5-day averages.

Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME), Intercontinental Exchange (ICE) and Dubai Mercantile Exchange (DME).

Crude oil prices are currently still below their year-ago levels, but are higher than their three-year averages. The average price for July and August of the front month WTI contract was \$90.42 per barrel and the two-month average for the Brent front month contract was \$107.00 per barrel (**Table 5**). The July and August average prices were \$1.04 and \$6.10 per barrel lower than at this time a year ago for WTI and Brent, but \$11.48 and \$22.36 per barrel higher than the three-year average from 2009 to 2011, respectively.

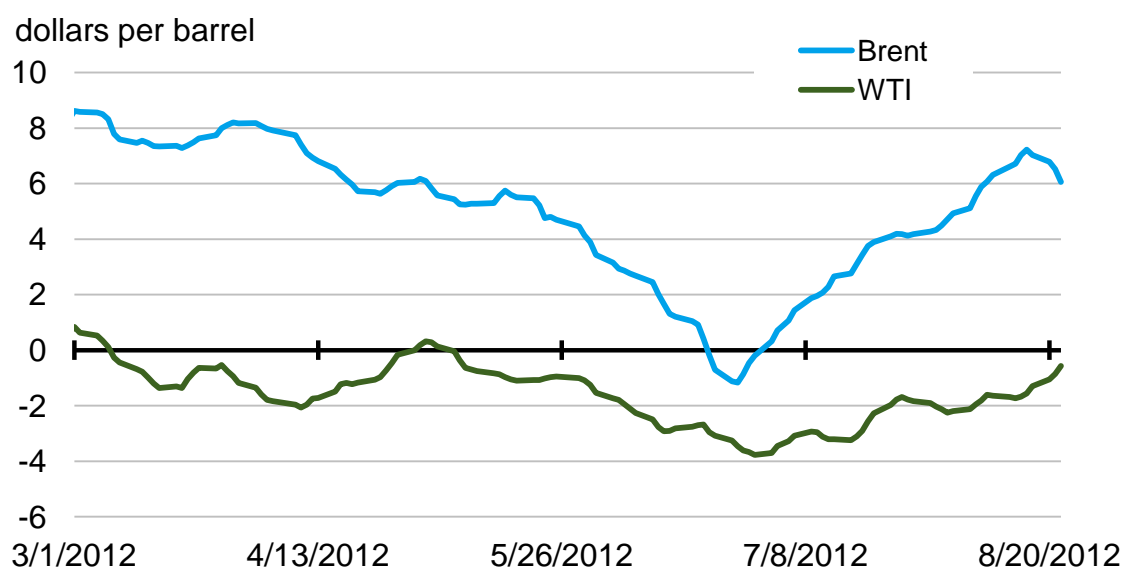
The Brent market briefly moved into contango, with prompt month prices below prices for future delivery during June, but has since returned to backwardation. For the five-days ending August 22, the 1st – 13th month spread averaged about \$6 per barrel, well beyond its low of -\$1.17 for the five-day period ending June 26. The switch from contango to backwardation is another sign of tightening in the world oil markets. One possible contributor to the recent tightness in the market may be related to the unavailability of insurance for tanker shipments from Iran due to sanctions imposed by the European

² The price data in this report are current as of August 22, 2012. In order to make it more understandable, and to respect contractual restrictions on EIA republication of certain data, most price data are reported using 5-day rolling or monthly averages and some are reported only in the figures.

Union. Commercial tanker tracking information and press reports indicate that discharges of Iranian oil were greatly diminished over the last two months in several Asian economies that have in recent years been important markets for Iran's oil exports. Both Iran and potential importers are known to be pursuing workarounds that may allow for a resumption of some shipments over the coming months, which could support some reduction in current market tightness.

The WTI spread has remained in contango, averaging $-\$1.93$ per barrel in July and August, but this is a much smaller spread than the three-year average of $-\$5.59$ per barrel. WTI prices continue to reflect transportation bottlenecks in the midcontinent region and ongoing efforts to ameliorate them by reconfiguring existing pipelines and building new ones.

Figure 4. Crude Oil 1st - 13th Month Futures Price Spread



Note: All prices represent rolling 5-day averages.

Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME) and Intercontinental Exchange (ICE).

For the five days ending August 22, the average price of the December 2012 WTI crude oil futures contract was $\$97.15$ per barrel and the average price of the December 2012 Brent contract was $\$113.29$ per barrel. The WTI and Brent prices for the 5-day average ending August 22 for the December 2012 contract have increased by about $\$16$ per barrel and $\$21$ per barrel, respectively, since June 26. Based on implied volatilities calculated from options and futures prices over the 5 days ending August 22, the probability of the December 2012 WTI futures contract expiring above $\$100$ per barrel is 39 percent, an increase of almost 25 percentage points from the same calculation made using price data from the 5-day period ending June 26. Given the higher absolute level of Brent prices relative to WTI prices over the last two months, the probabilities that the December Brent contract will exceed specified dollar thresholds are higher.

Reformulated blendstock for oxygenate blending (RBOB) is a widely traded unfinished gasoline that requires blending with an oxygenate, such as ethanol, before being sold. RBOB prices rose along with crude oil prices over the last two months. Comparing the 5-day periods ending June 26, 2012 and

August 22, the price of the front month of the NYMEX RBOB contract, which calls for delivery in New York Harbor, rose from \$2.60 per gallon to \$3.06 per gallon. During July and August, the average price for the front month RBOB futures contract was \$2.90 per gallon, \$0.69 per gallon higher than the average front month price over the three-year period from 2009-2011, but \$0.08 per gallon below the July and August 2011 average.

The average price of the December 2012 RBOB futures contract for the 5-day period ending August 22 was \$2.80 per gallon, an increase of \$0.58 per gallon since June 26. Based on implied volatilities calculated from options and futures prices over the 5 days ending August 22, the probability of the December 2012 RBOB futures contract expiring above \$3.35 per gallon (comparable to a \$4.00 per gallon national average retail price for regular grade gasoline) is now 10 percent, a 8 percentage point increase from June 26. Higher crude oil prices were largely responsible for the increased probability of the December gasoline contract exceeding different price levels.

Table 1. Summary of Estimated Liquid Fuels Quantities and Prices

Item	July 2012	August 2012	July-August 2012 Average	July-August 2011 Average	2009-2011 Average
Total Global Liquid Fuels					
Total Global Liquid Fuels Production (million bbl/d)	88.8	88.5	88.7	87.2	86.1
Total Global Liquid Fuels Consumption (million bbl/d)	89.4	90.3	89.8	88.9	86.7
Biofuels Production (a) (million bbl/d)	2.2	2.2	2.2	2.2	1.8
Biofuels Consumption (a) (million bbl/d)	1.8	1.8	1.8	1.8	1.7
Iran Liquid Fuels Production (million bbl/d)	3.4	3.3	3.3	4.2	4.2
Iran Liquid Fuels Consumption (million bbl/d)	1.7	1.7	1.7	1.8	1.8
Petroleum and Petroleum Products Produced and Consumed in Countries Other Than Iran					
Production (b) (million bbl/d)	83.2	83.0	83.1	80.8	80.1
Consumption (c) (million bbl/d)	85.9	86.8	86.4	85.3	83.2
Production minus Consumption	-2.7	-3.8	-3.2	-4.5	-3.2
World Inventory Net Withdrawals Including Iran (million bbl/d)	0.6	1.7	1.2	1.6	0.6
Estimated OECD Inventory Level (d) (million barrels)	2,649	2,622	2,636	2,686	--
Surplus Production Capacity					
OPEC Surplus Crude Oil Production Capacity (e) (million bbl/d)	2.4	2.3	2.4	2.5	3.6
Oil Price Level					
WTI Front Month Futures Price (f) (\$ per barrel)	87.93	93.68	90.42	91.46	78.94
Brent Front Month Futures Price (g) (\$ per barrel)	102.72	112.62	107.00	113.10	84.64
RBOB Front Month Futures Price (h) (\$ per gallon)	2.82	3.00	2.90	2.98	2.21
Oil Price Time Spread					
WTI 1st - 13th Month Futures Spread (\$ per barrel)	-2.51	-1.17	-1.93	-4.48	-5.59
Brent 1st - 13th Month Futures Spread (\$ per barrel)	3.23	6.44	4.62	1.37	-3.23

Note: The term "liquid fuels" encompasses crude oil, lease condensate, natural gas plant liquids, biofuels, coal-to-liquids, gas-to-liquids, and refinery processing gains, which are important to consider in concert due to the inter-related supply, demand, and price dynamics of petroleum, petroleum products, and related fuels.

(a) Biofuels production and consumption are based on EIA estimates for 2010 as published in the International Energy Statistics. Biofuels production in July and August tends to be at its highest level in the year since ethanol production in Brazil reaches its seasonal peak in the third quarter.

(b) Production includes crude oil (including lease condensates), natural gas plant liquids, other liquids, and refinery processing gains.

(c) Consumption of petroleum by the OECD countries is synonymous with "products supplied," defined in the glossary of the EIA Petroleum Supply Monthly, DOE/EIA-0109. Consumption of petroleum by the non-OECD countries is "apparent consumption," which includes internal consumption, refinery fuel and loss, and bunkering.

(d) Estimated inventory level is for OECD only.

(e) EIA defines surplus oil production capacity as potential oil production that could be brought online within 30 days and sustained for at least 90 days, consistent with sound business practices. This does not include oil production increases that could not be sustained without degrading the future production capacity of a field.

(f) WTI refers to West Texas Intermediate crude oil traded on the Chicago Mercantile Exchange (CME).

(g) Brent refers to Brent crude oil traded on the Intercontinental Exchange (ICE).

(h) RBOB refers to reformulated blendstock for oxygenate blending traded on the CME.

Note: August prices include data through market close on August 22, 2012.

Source: U.S. Energy Information Administration

Table 2. International Liquid Fuels Production, Consumption, and Inventory Estimates

Item	July 2012	August 2012	July-August 2012 Average	July-August 2011 Average	2009-2011 Average
Production (million barrels per day) (a)					
OECD	22.3	22.0	22.2	21.4	21.4
U.S. (50 States)	11.0	10.9	10.9	10.1	9.6
Canada	3.8	3.8	3.8	3.7	3.5
Mexico	2.9	3.0	2.9	3.0	3.0
North Sea (b)	3.1	2.9	3.0	3.1	3.7
Other OECD	1.5	1.5	1.5	1.6	1.6
Non-OECD	66.5	66.5	66.5	65.8	64.7
OPEC	36.2	36.3	36.3	35.2	34.6
Crude Oil Portion	30.5	30.7	30.6	29.9	29.6
Other Liquids	5.7	5.6	5.7	5.2	5.1
Former Soviet Union	13.3	13.0	13.1	13.3	13.1
China	4.3	4.4	4.3	4.3	4.2
Other Non-OECD	12.6	12.9	12.8	13.0	12.7
Total World Production	88.8	88.5	88.7	87.2	86.1
Non-OPEC Production	52.6	52.2	52.4	52.1	51.5
Consumption (million barrels per day) (c)					
OECD	45.2	46.2	45.7	45.9	45.8
U.S. (50 States)	18.5	19.2	18.8	18.9	18.9
U.S. territories	0.3	0.3	0.3	0.3	0.3
Canada	2.3	2.3	2.3	2.3	2.2
Europe	14.1	14.1	14.1	14.6	14.5
Japan	4.5	4.7	4.6	4.3	4.4
Other OECD	5.6	5.6	5.6	5.5	5.5
Non-OECD	44.2	44.1	44.1	43.0	40.9
Former Soviet Union	4.9	4.8	4.9	4.8	4.5
Europe	0.8	0.8	0.8	0.8	0.7
China	10.3	10.2	10.3	9.8	9.3
Other Asia	10.2	10.1	10.2	10.0	9.8
Other Non-OECD	18.0	18.1	18.1	17.7	16.6
Total World Consumption	89.4	90.3	89.8	88.9	86.7
Inventory Net Withdrawals (million barrels per day)					
U.S. (50 States)	(d) 0.0	0.3	0.2	0.1	(e) 0.0
Other OECD	0.3	0.5	0.4	0.0	0.1
Other Stock Draws and Balance	0.4	0.9	0.6	1.5	0.5
Total Stock Draw	0.6	1.7	1.2	1.6	0.6
End-of-period Inventories (million barrels)					
U.S. Commercial Inventory	1,112	1,101	1,106	1,103	--
OECD Commercial Inventory	2,649	2,622	2,636	2,686	--

OECD = Organization for Economic Cooperation and Development: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, South Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. Monthly OECD supply and consumption does not yet include Chile, Estonia, Israel, or Slovenia.

OPEC = Organization of the Petroleum Exporting Countries: Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Former Soviet Union = Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

(a) Supply includes production of crude oil (including lease condensates), natural gas plant liquids, biofuels, other liquids, and refinery processing gains.

(b) Includes offshore supply from Denmark, Germany, the Netherlands, Norway, and the United Kingdom.

(c) Consumption of petroleum by the OECD countries is synonymous with "products supplied," defined in the glossary of the EIA Petroleum Supply Monthly, DOE/EIA-0109. Consumption of petroleum by the non-OECD countries is "apparent consumption," which includes internal consumption, refinery fuel and loss, and bunkering.

(d) The estimate is -0.04 million bbl/d.

(e) The estimate is -0.01 million bbl/d.

Source: U.S. Energy Information Administration

Table 3. Non-OPEC Liquid Fuels Supply Estimates

Item (million barrels per day)	July 2012	August 2012	July-August 2012 Average	July-August 2011 Average	2009-2011 Average
North America	17.7	17.6	17.6	16.7	16.1
Canada	3.8	3.8	3.8	3.7	3.5
Mexico	2.9	3.0	2.9	3.0	3.0
United States	11.0	10.9	10.9	10.1	9.6
Central and South America	5.2	5.3	5.3	5.1	4.7
Argentina	0.8	0.8	0.8	0.8	0.8
Brazil	3.0	3.1	3.1	2.9	2.7
Colombia	1.0	1.0	1.0	1.0	0.8
Other Central and South America	0.4	0.4	0.4	0.5	0.5
Europe	4.0	3.8	3.9	4.1	4.6
Norway	1.9	1.7	1.8	2.0	2.2
United Kingdom (offshore)	1.0	0.9	0.9	0.9	1.3
Other North Sea	0.2	0.2	0.2	0.2	0.3
Former Soviet Union (FSU)	13.3	13.0	13.1	13.3	13.1
Azerbaijan	0.9	0.9	0.9	1.0	1.0
Kazakhstan	1.6	1.3	1.5	1.6	1.6
Russia	10.2	10.2	10.2	10.3	10.1
Turkmenistan	0.2	0.2	0.2	0.2	0.2
Other FSU	0.3	0.3	0.3	0.2	0.2
Middle East	1.3	1.3	1.3	1.5	1.5
Oman	0.9	0.9	0.9	0.9	0.9
Syria	0.2	0.2	0.2	0.4	0.4
Yemen	0.2	0.2	0.2	0.1	0.2
Asia and Oceania	8.8	8.8	8.8	8.7	8.7
Australia	0.5	0.5	0.5	0.5	0.6
China	4.3	4.4	4.3	4.3	4.2
India	0.9	1.0	1.0	0.9	0.9
Indonesia	1.0	1.0	1.0	1.0	1.0
Malaysia	0.6	0.6	0.6	0.6	0.7
Vietnam	0.4	0.4	0.4	0.3	0.3
Africa	2.3	2.3	2.3	2.6	2.6
Egypt	0.7	0.7	0.7	0.7	0.7
Equatorial Guinea	0.3	0.3	0.3	0.3	0.3
Gabon	0.2	0.2	0.2	0.2	0.2
Sudan	0.1	0.1	0.1	0.5	0.5
Total non-OPEC liquids	52.6	52.2	52.4	52.1	51.5
OPEC non-crude liquids	5.7	5.6	5.7	5.2	5.1
Non-OPEC + OPEC non-crude liquids	58.2	57.9	58.0	57.3	56.5

Former Soviet Union = Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

Sudan production represents total production from both north and south.

OPEC = Organization of the Petroleum Exporting Countries: Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Source: U.S. Energy Information Administration

Table 4. OPEC Crude Oil (Excluding Condensates) and Liquid Fuels Supply Estimates

Item (million barrels per day)	July 2012	August 2012	July-August 2012 Average	July-August 2011 Average	2009-2011 Average
Crude Oil					
Algeria	1.3	1.3	1.3	1.3	1.3
Angola	1.7	1.8	1.7	1.7	1.8
Ecuador	0.5	0.5	0.5	0.5	0.5
Iran	2.8	2.7	2.8	3.7	3.7
Iraq	3.1	3.1	3.1	2.6	2.4
Kuwait	2.6	2.6	2.6	2.5	2.4
Libya	1.4	1.5	1.4	0.1	1.3
Nigeria	2.2	2.2	2.2	2.2	2.0
Qatar	0.7	0.7	0.7	0.9	0.8
Saudi Arabia	9.7	9.7	9.7	9.9	8.8
United Arab Emirates	2.5	2.5	2.5	2.6	2.4
Venezuela	2.2	2.2	2.2	2.2	2.2
OPEC Total	30.5	30.7	30.6	29.9	29.6
Other Liquids	5.7	5.6	5.7	5.2	5.1
Total OPEC Supply	36.2	36.3	36.3	35.2	34.6
Crude Oil Production Capacity					
Africa	6.4	6.7	6.5	5.2	6.3
South America	2.7	2.7	2.7	2.7	2.7
Middle East	23.8	23.6	23.7	24.6	24.2
OPEC Total	33.0	33.0	33.0	32.4	33.1
Surplus Crude Oil Production Capacity					
Africa	0.0	0.0	0.0	0.0	0.0
South America	0.0	0.0	0.0	0.0	0.0
Middle East	2.4	2.3	2.4	2.5	3.6
OPEC Total	2.4	2.3	2.4	2.5	3.6

OPEC = Organization of the Petroleum Exporting Countries: Algeria, Angola, Libya, and Nigeria (Africa); Ecuador and Venezuela (South America); Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates (Middle East).

Source: U.S. Energy Information Administration

Table 5. Crude Oil and Petroleum Product Price Data

Item	July 2012 Average	August 2012 Average*	July - August 2012 Average*	July - August 2011 Average	2009- 2011 Average
Brent Front Month Futures Price (\$ per barrel)	102.72	112.62	107.00	113.10	84.64
WTI Front Month Futures Price (\$ per barrel)	87.93	93.68	90.42	91.46	78.94
Dubai Front Month Futures Price (\$ per barrel)	100.08	108.69	103.80	108.06	82.51
Brent 1st - 13th Month Futures Spread (\$ per barrel)	3.23	6.44	4.62	1.37	-3.23
WTI 1st - 13th Month Futures Spread (\$ per barrel)	-2.51	-1.17	-1.93	-4.48	-5.59
RBOB Front Month Futures Price (\$ per gallon)	2.82	3.00	2.90	2.98	2.21
Heating Oil Front Month Futures Price (\$ per gallon)	2.81	3.03	2.91	3.01	2.26
RBOB - Brent Futures Crack Spread (\$ per gallon)	0.38	0.32	0.35	0.29	0.20
Heating Oil - Brent Futures Crack Spread (\$ per gallon)	0.37	0.35	0.36	0.32	0.24

*Note: August prices include data through market close on August 22, 2012.

Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME), Intercontinental Exchange (ICE) and Dubai Mercantile Exchange (DME).

Appendix

Market Indicators Considered in this Report

Due to time lags in the collection of production and consumption data, nearly all of the petroleum and petroleum product volumes presented in this report are estimates rather than actual data.³ EIA revises estimates as new information becomes available, and production and consumption estimates featured in the previous reports in this series have since changed accordingly. For example, after incorporating the latest data for May and June, EIA's current estimate of average global liquid fuels production over that time period is 0.5 million barrels per day (bbl/d) lower than previously estimated, while consumption is 0.7 million bbl/d higher. This suggests that the tighter view of the market presented in this report extends to months prior to July and August.

In addition to estimated volumes of production and consumption, as well as spot market and futures prices, this report focuses on a variety of other indicators of volumes, surplus production capacity, and price spreads relevant to the "availability and price of petroleum and petroleum products."

EIA defines surplus capacity as the amount of additional production that can be brought onstream within 30 days and sustained for at least 90 days, and consistent with sound business and reservoir management practices. Surplus capacity is an indicator of the world oil market's ability to respond to potential disruptions that reduce oil supply. Oil prices tend to rise when surplus capacity reaches very low levels, as occurred in the 2003 to 2008 period.

Crude oil and petroleum product inventories, also referred to as stocks, act as the balancing point between supply and demand. Given the uncertainty of supply and demand, inventories are often seen as a precautionary measure and, along with surplus capacity, serve to cushion the market in addressing negative supply shocks and/or positive demand shocks. The term structure of prices for future delivery, discussed below, is one factor that signals the market to build or reduce stocks.

Petroleum and petroleum product prices are indicators of the relative balance of supply and demand. Rising prices suggest that demand is growing more rapidly (or declining at a slower rate) than supply, while falling prices imply that demand is growing less quickly (or falling more rapidly) than supply. Prices also reflect expectations regarding future changes in the balance between supply and demand, which can be influenced by a variety of supply and demand drivers. This report reflects price data through August 22, 2012.

Differences in prices, commonly referred to as price spreads, also convey important information about the current state of the market and market expectations. The term structure of prices for future

³ Liquid fuels consumption and inventory data for most OECD member countries outside of the United States are based upon published International Energy Agency (IEA) estimates, which are lagged by two to three months and are trended forward using forecast economic growth, weather, and related assumptions. Weekly data on U.S. stock changes, refinery activity, and imports together with estimates of primary liquids production, exports, and product supplied are available through EIA's *Weekly Petroleum Status Report*. EIA's estimates of liquid fuels consumption for non-OECD countries are primarily based upon estimated changes in economic activity and related assumptions.

delivery is one key indicator of market participants' expectations regarding changes in market tightness over time. For example, the difference between the price of the front month and thirteenth month futures contracts provides insight into current market tightness relative to expectations for the coming year. A positive difference, referred to as backwardation, indicates tightness in the current market, while a negative difference, called contango, indicates a relatively looser near-term supply-demand balance and encourages stock building.

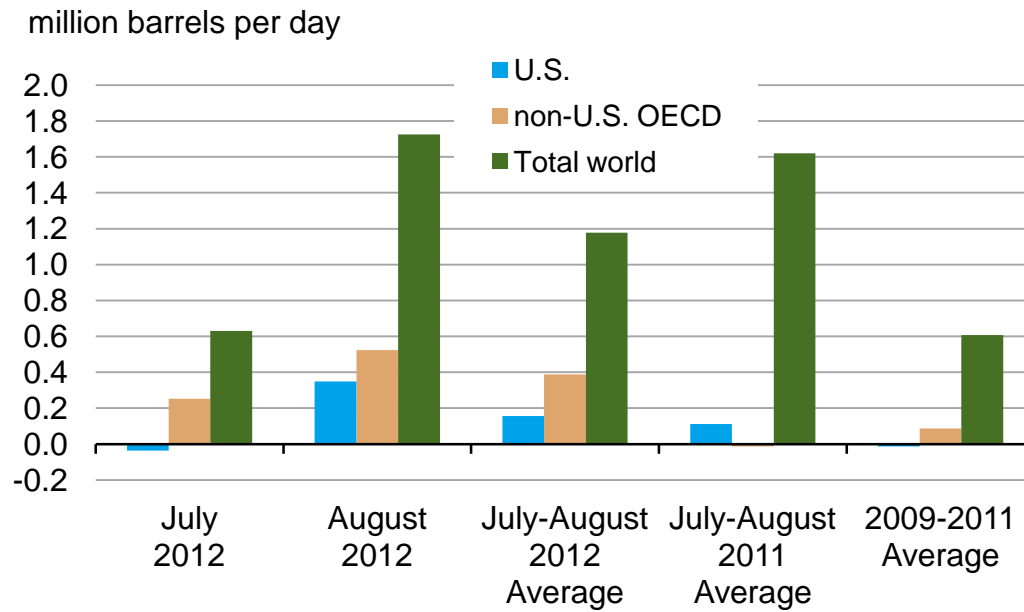
There are a variety of other spreads that also provide important market insights. These include the price spread across different crude streams that can arise due to differences in physical characteristics (for example, American Petroleum Institute [API] gravity and sulfur content) or their location. With respect to location, transportation bottlenecks can result in significant price differences between physically similar crudes in markets with different balances between crude supply and demand.

The price spread between crude oil and refined products, often referred to as a crack spread, provides an indication of the relative tightness in the supply-demand balance for different petroleum products. In recent years, the crack spread for distillate fuels (a category that includes diesel fuel and heating oil) has generally been greater than the crack spread for gasoline. Crack spreads also provide insight into the profitability of refining operations, which is often a reflection of the availability of refinery capacity relative to the demand for refined products.

The value of options on futures contracts is another current indicator of forward-looking market sentiment. Call options provide the holder with the right to buy a commodity at a specified price up to a specified future date, while put options provide the right to sell at a specified price up to a specified future date. Given strike prices and the time to expiration, the value of options contracts can be used to calculate the market's current assessment of the uncertainty range for future prices and/or the market's view that prices for future delivery at specified dates will exceed or fall below any particular level.

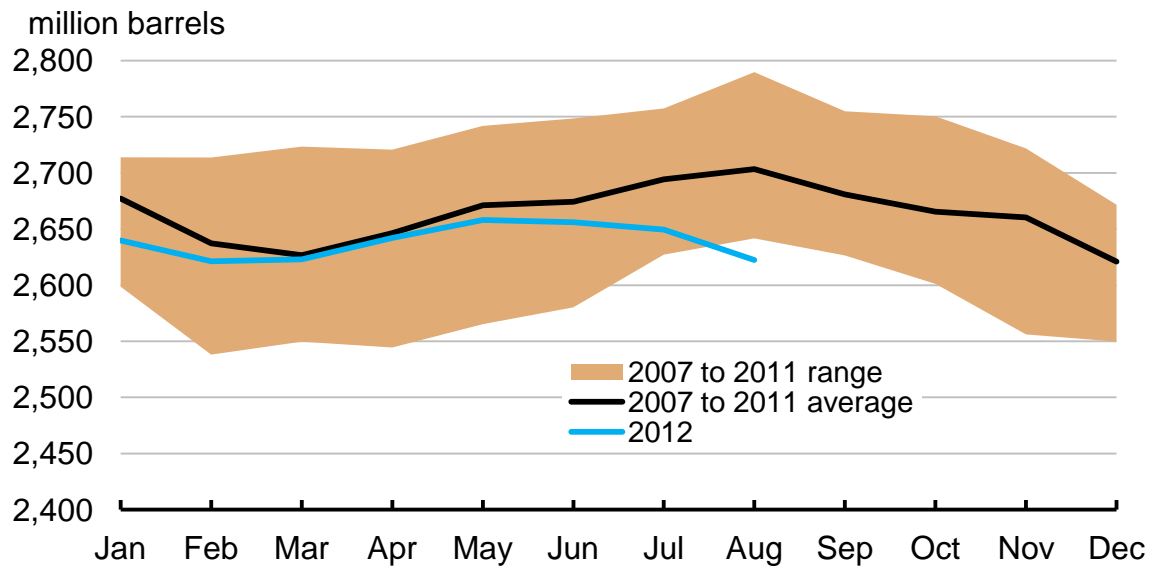
Figures

Figure 5. Global Total Liquids Inventories Net Withdrawals



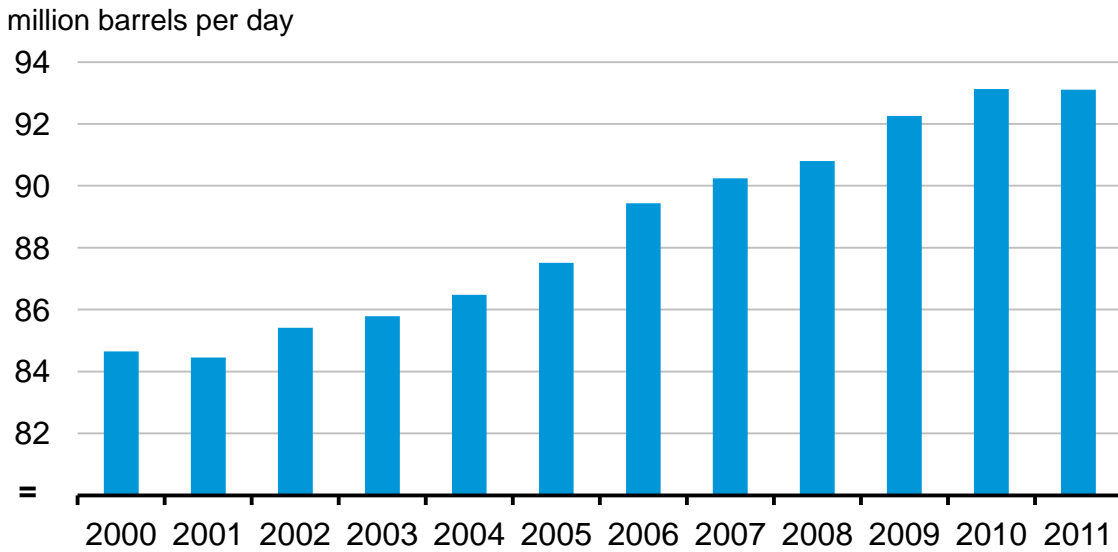
Source: U.S. Energy Information Administration

Figure 6. OECD Total Liquid Fuels Inventories



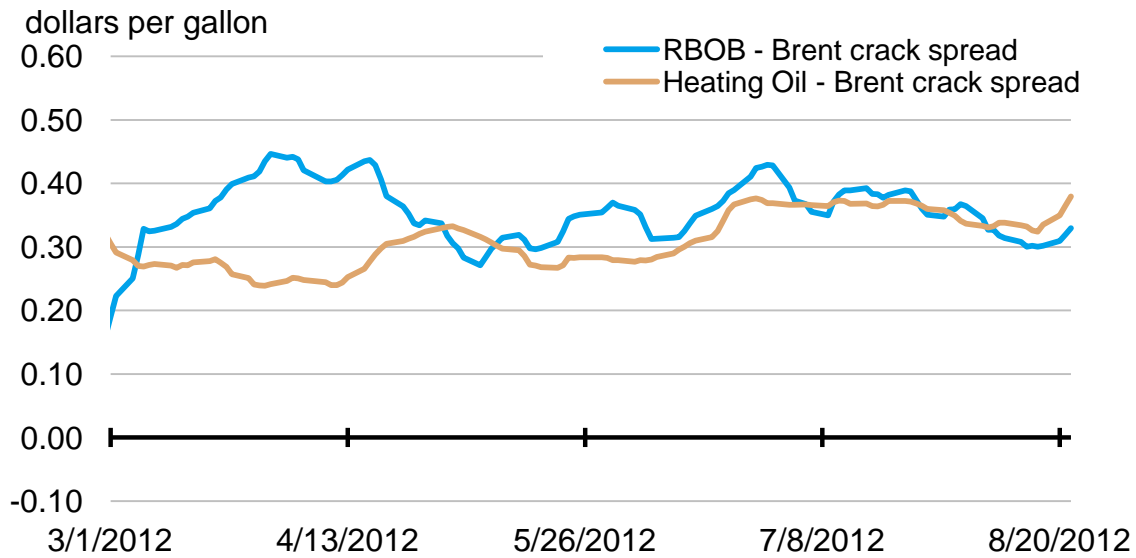
Source: U.S. Energy Information Administration

Figure 7. Global Crude Oil Distillation Capacity



Source: Purvin & Gertz.

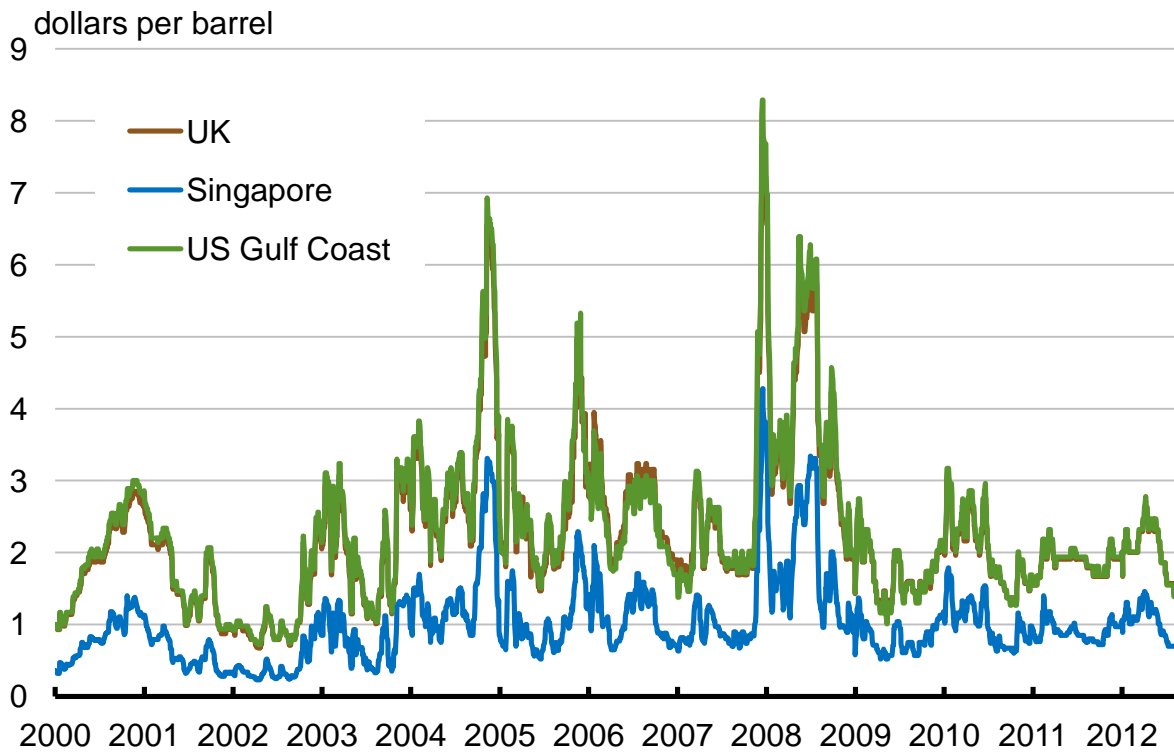
Figure 8. Front Month Futures Crack Spreads



Note: All prices represent rolling 5-day averages.

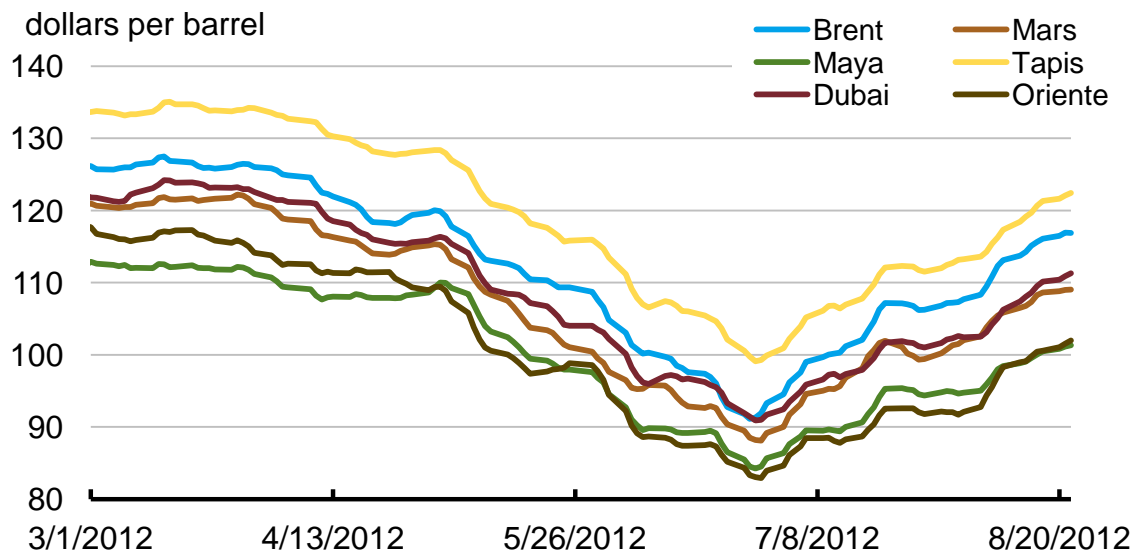
Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME) and Intercontinental Exchange (ICE).

Figure 9. Very Large Crude Carrier Shipping Rates for Delivery from the Persian Gulf



Source: U.S. Energy Information Administration, based on Bloomberg, L.P.

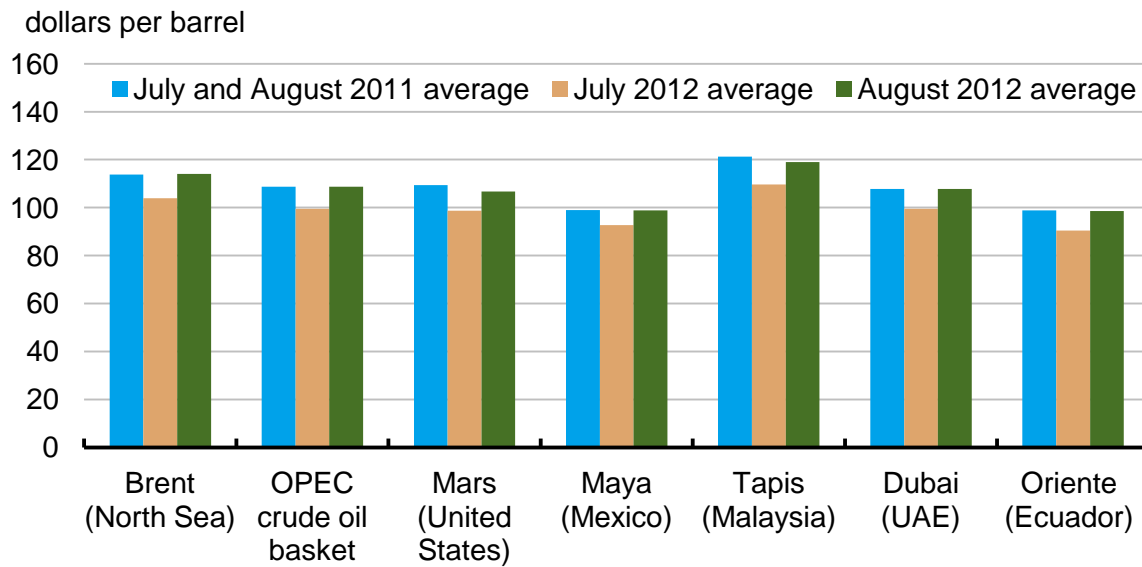
Figure 10. Global Crude Oil Spot Prices



Note: All prices represent rolling 5-day averages.

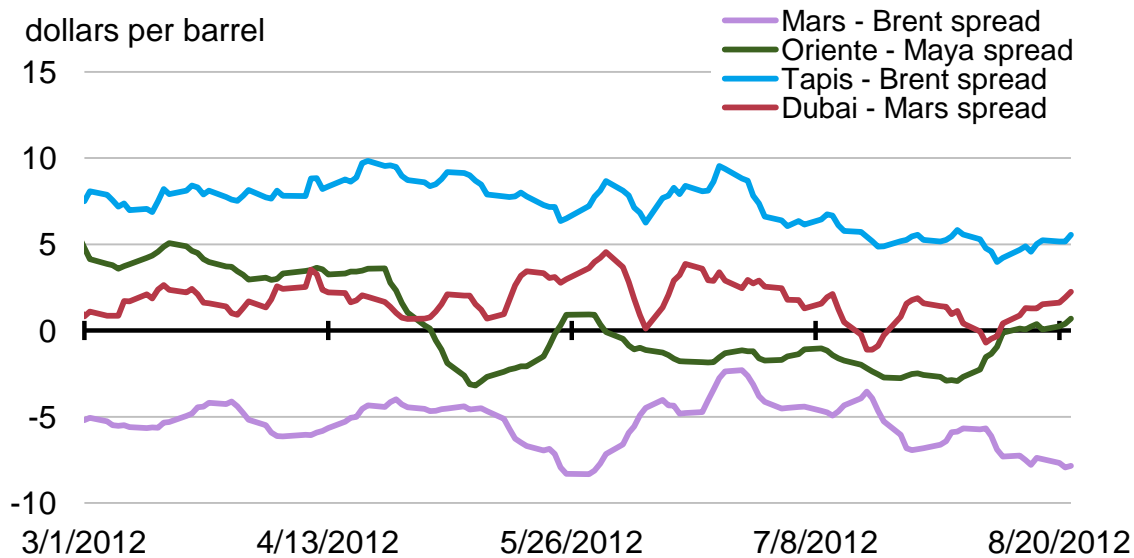
Source: U.S. Energy Information Administration, based on Bloomberg, L.P.

Figure 11. Global Crude Oil Spot Price Averages



Source: U.S. Energy Information Administration, based on Bloomberg, L.P.

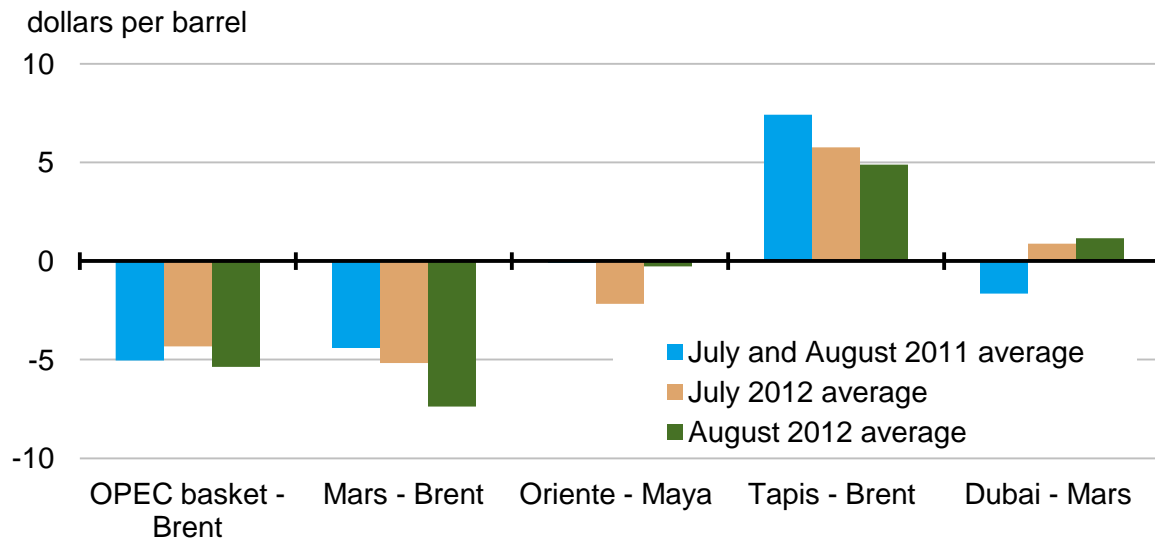
Figure 12. Global Crude Oil Spot Price Differentials



Note: All prices represent rolling 5-day averages.

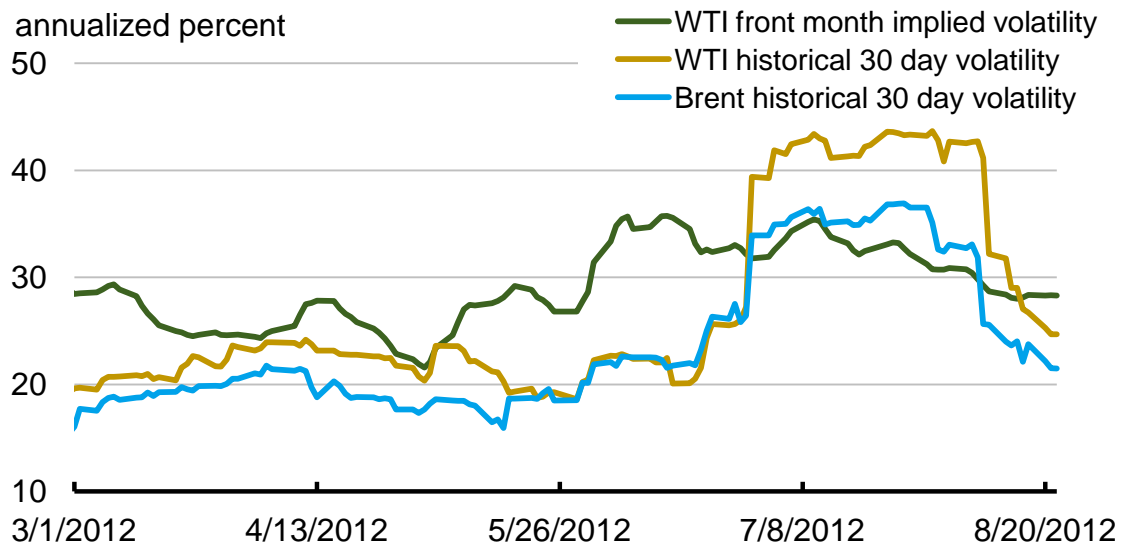
Source: U.S. Energy Information Administration, based on Bloomberg, L.P.

Figure 13. Global Crude Oil Spot Price Differentials Averages



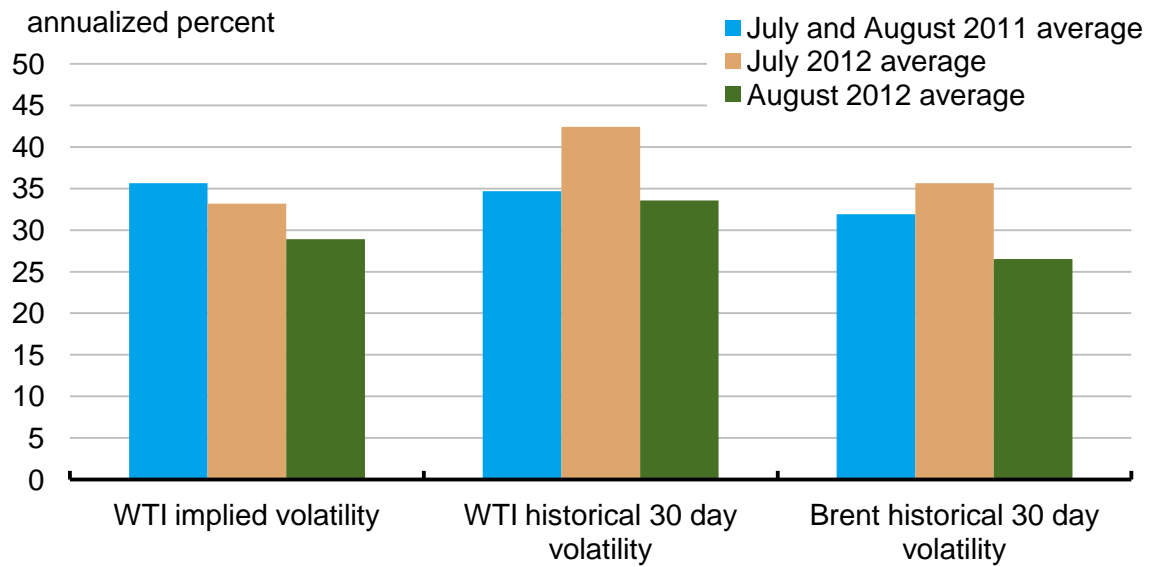
Source: U.S. Energy Information Administration, based on Bloomberg, L.P.

Figure 14. Crude Oil Historical and Implied Volatility



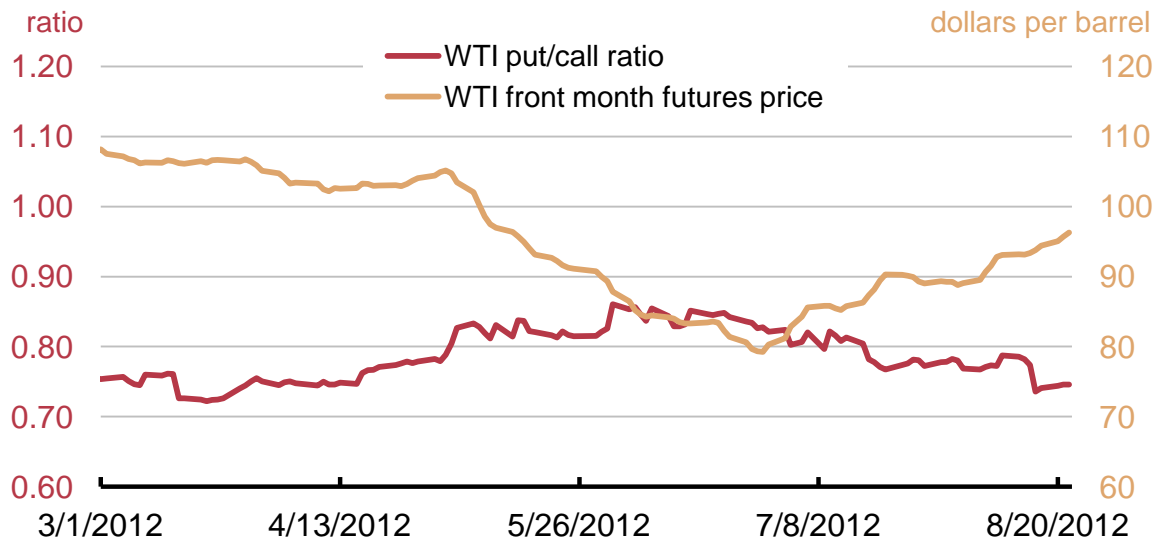
Note: Historical volatility is shown as a 30-day rolling average. Implied volatility is a 5-day rolling average.
 Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME) and Intercontinental Exchange (ICE).

Figure 15. Crude Oil Historical and Implied Volatility Averages



Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME).

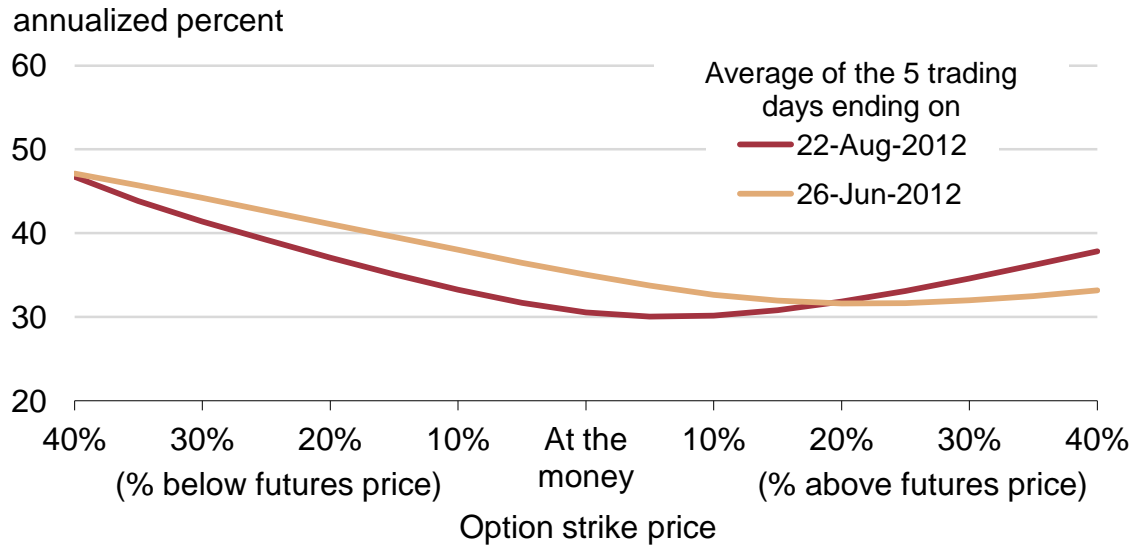
Figure 16. Put/Call Ratio for all Options on WTI Futures Contracts



Note: The futures price is a 5-day rolling average.

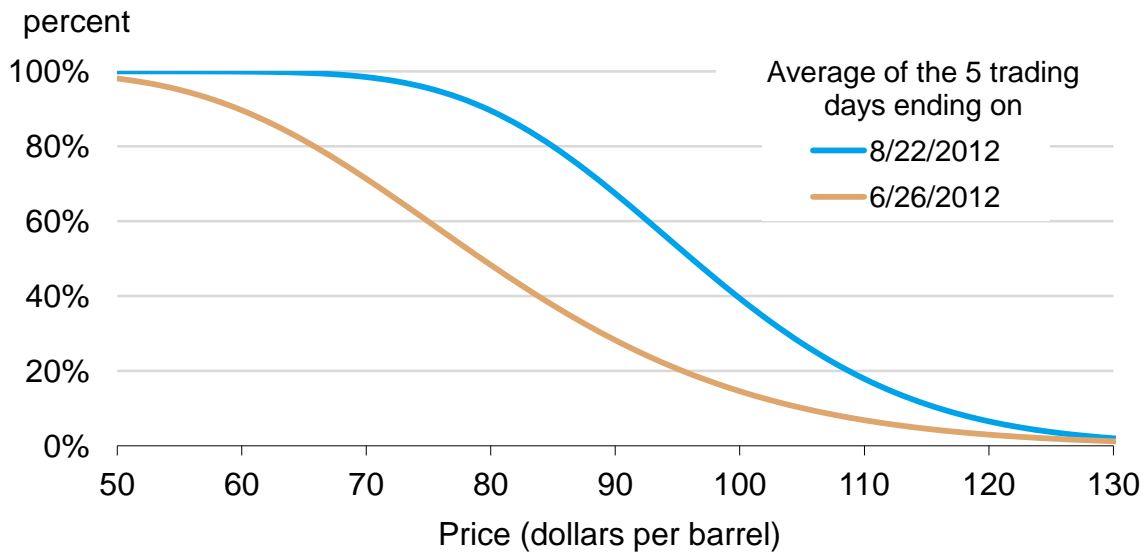
Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME) and Intercontinental Exchange (ICE).

Figure 17. Volatility Skew for the December 2012 WTI Futures Contract



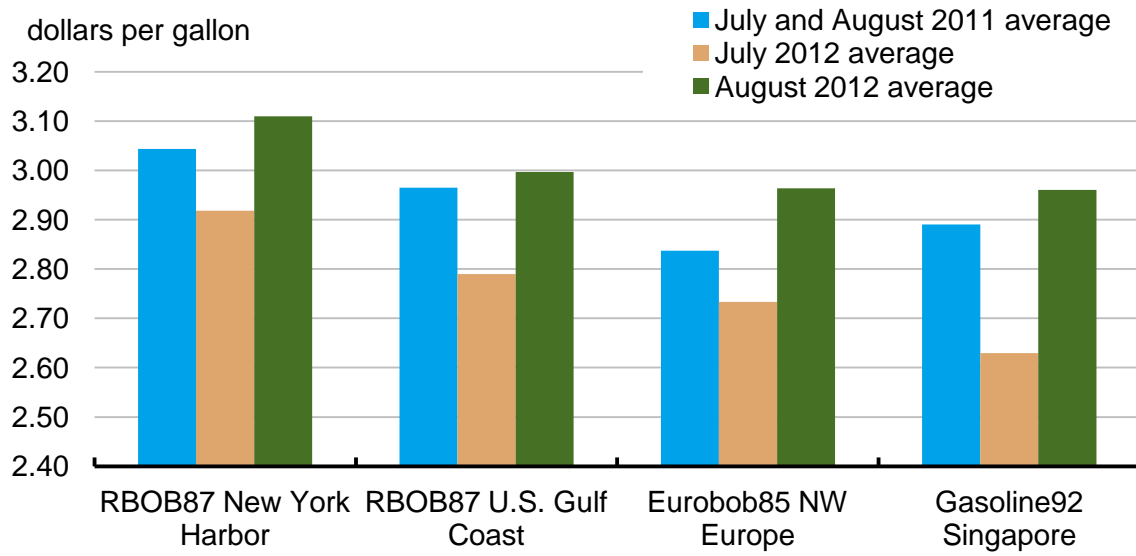
Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME).

Figure 18. Probability of the December 2012 WTI Contract Expiring Above Different Price Levels



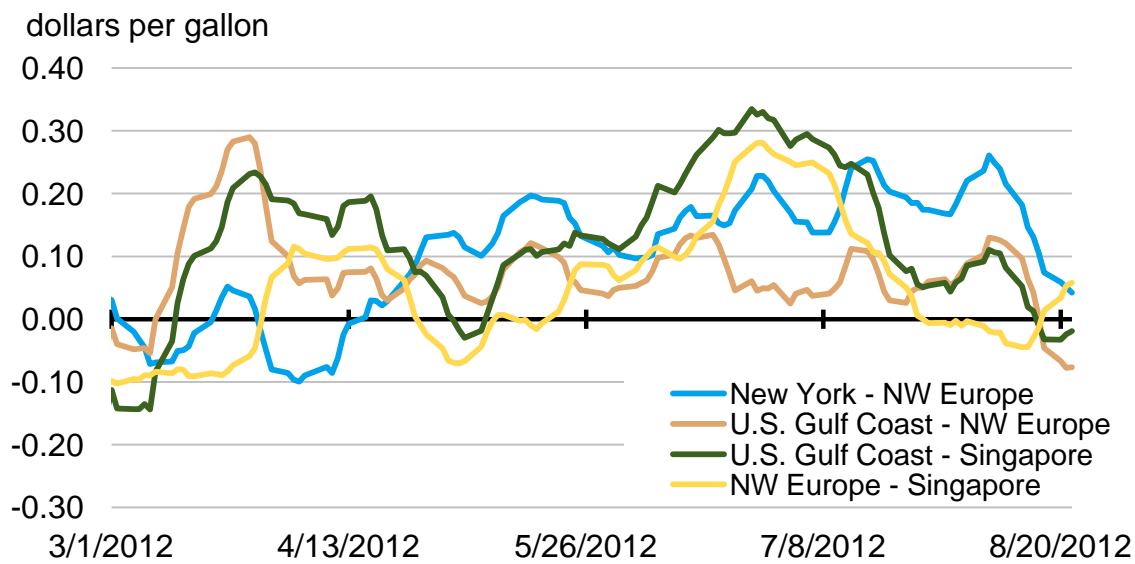
Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME).

Figure 19. Global Gasoline Spot Price Averages



Source: U.S. Energy Information Administration, based on Bloomberg, L.P.

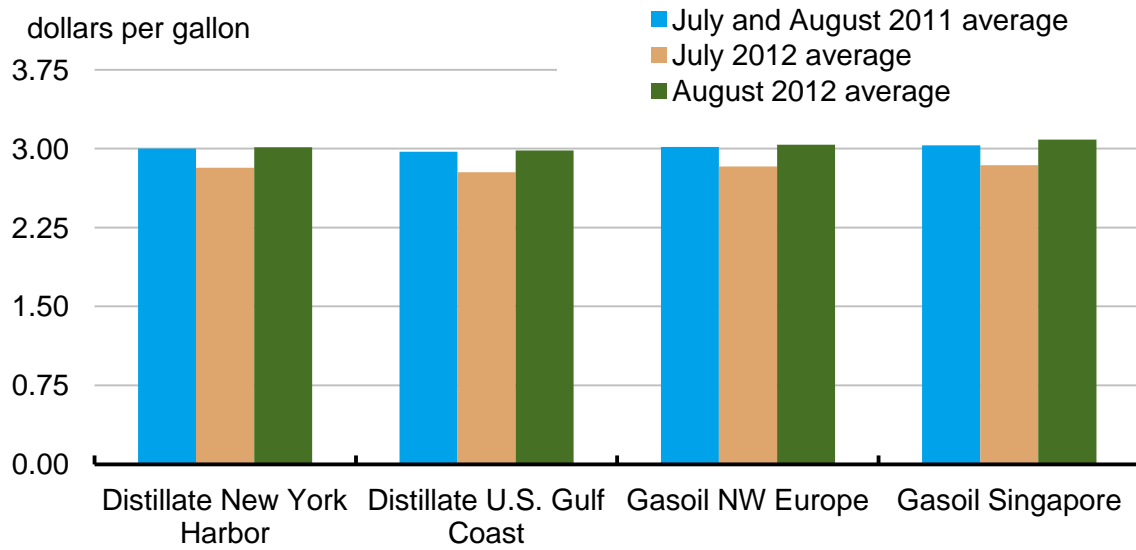
Figure 20. Global Gasoline Spot Price Differentials



Note: All prices represent rolling 5-day averages.

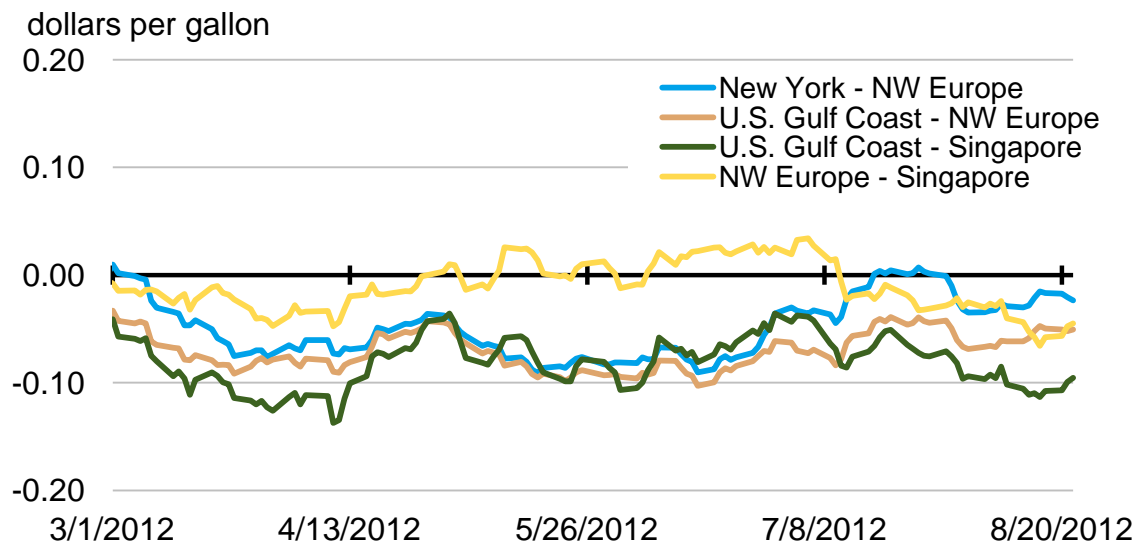
Source: U.S. Energy Information Administration, based on Bloomberg, L.P.

Figure 21. Global Distillate Spot Price Averages



Source: U.S. Energy Information Administration, based on Bloomberg, L.P.

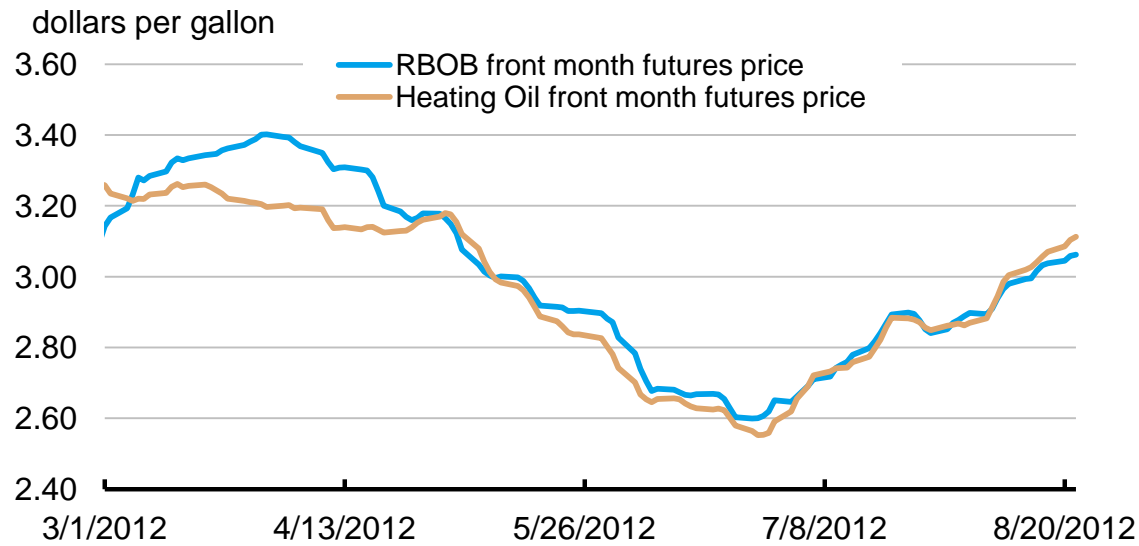
Figure 22. Global Distillate Spot Price Differentials



Note: All prices represent rolling 5-day averages.

Source: U.S. Energy Information Administration, based on Bloomberg, L.P.

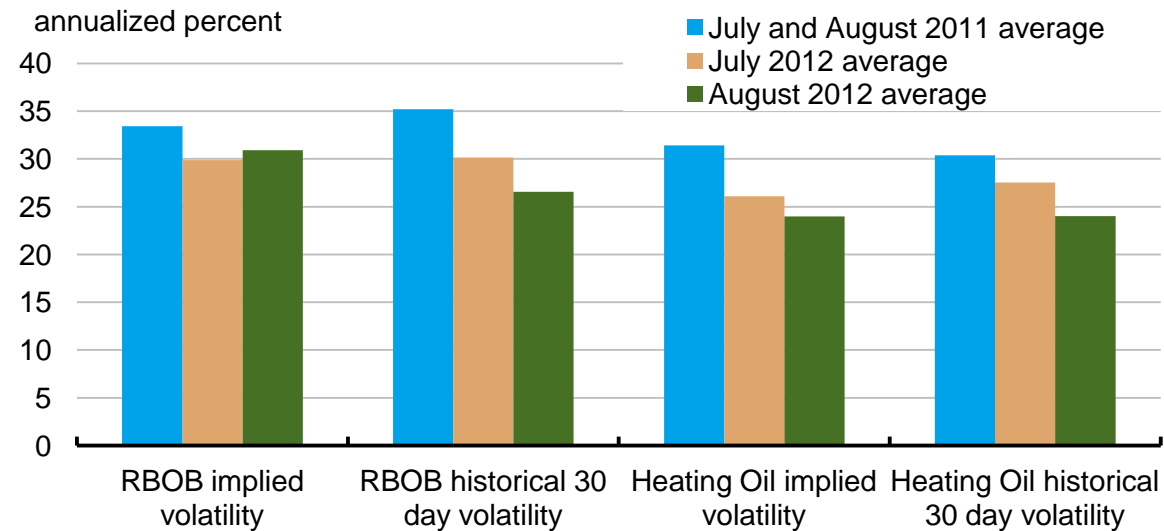
Figure 23. Front Month RBOB Gasoline and Heating Oil Futures Prices



Note: All prices represent rolling 5-day averages.

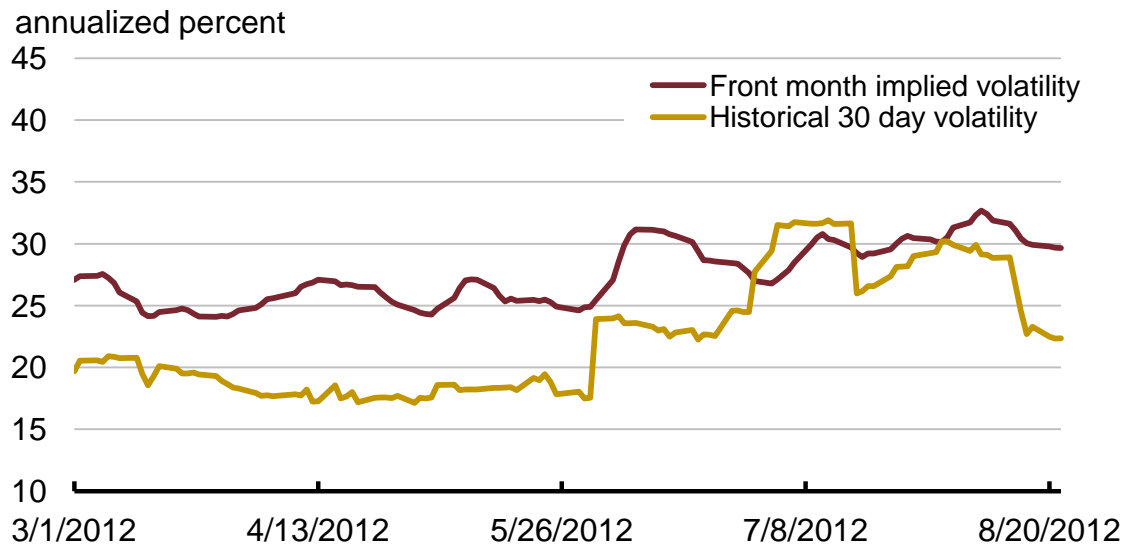
Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME).

Figure 24. Front Month Gasoline and Heating Oil Futures Volatility



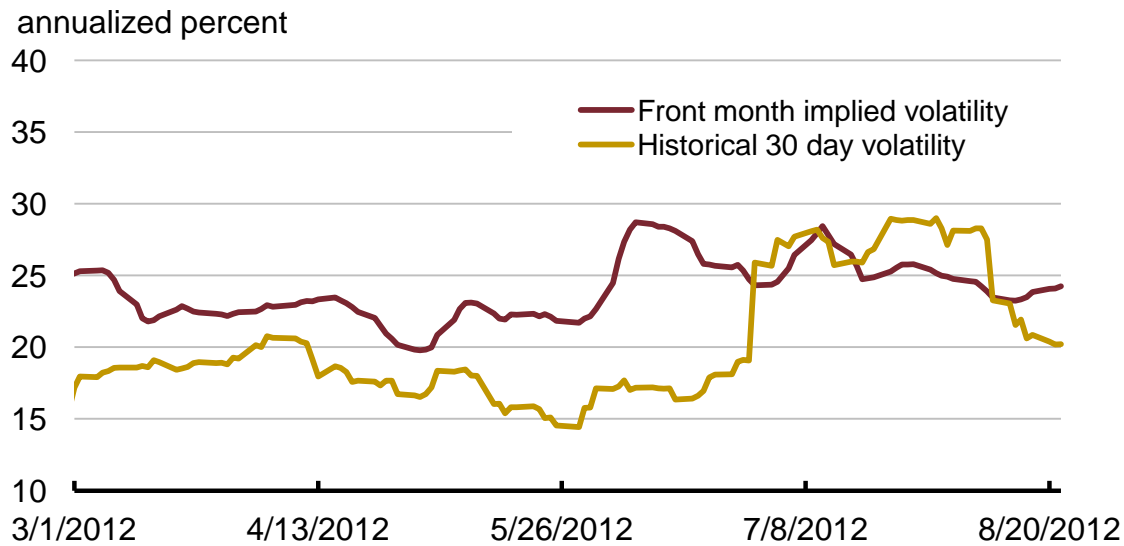
Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME).

Figure 25. RBOB Gasoline Historical and Implied Volatility



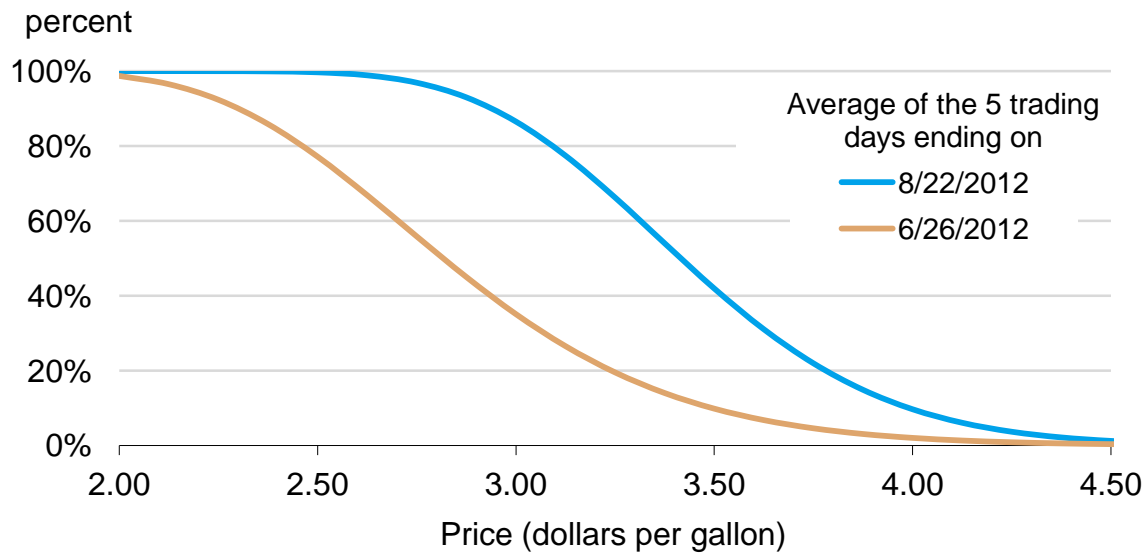
Note: Historical volatility is shown as a 30-day rolling average. Implied volatility is a 5-day rolling average.
 Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME).

Figure 26. Heating Oil Historical and Implied Volatility



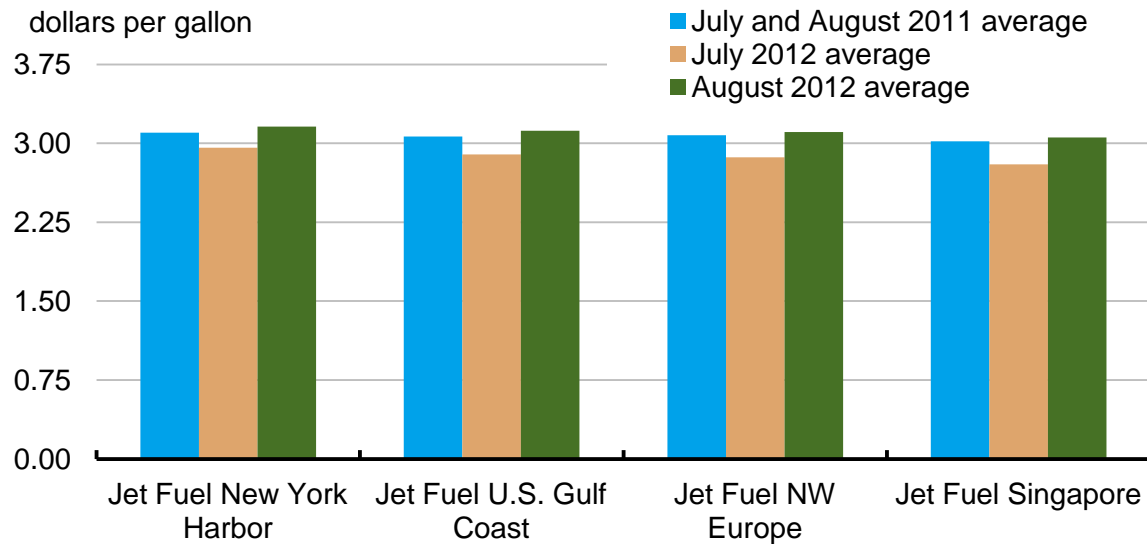
Note: Historical volatility is shown as a 30-day rolling average. Implied volatility is a 5-day rolling average.
 Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME).

Figure 27. Probability of December 2012 Retail Gasoline Exceeding Different Price Levels at Expiration



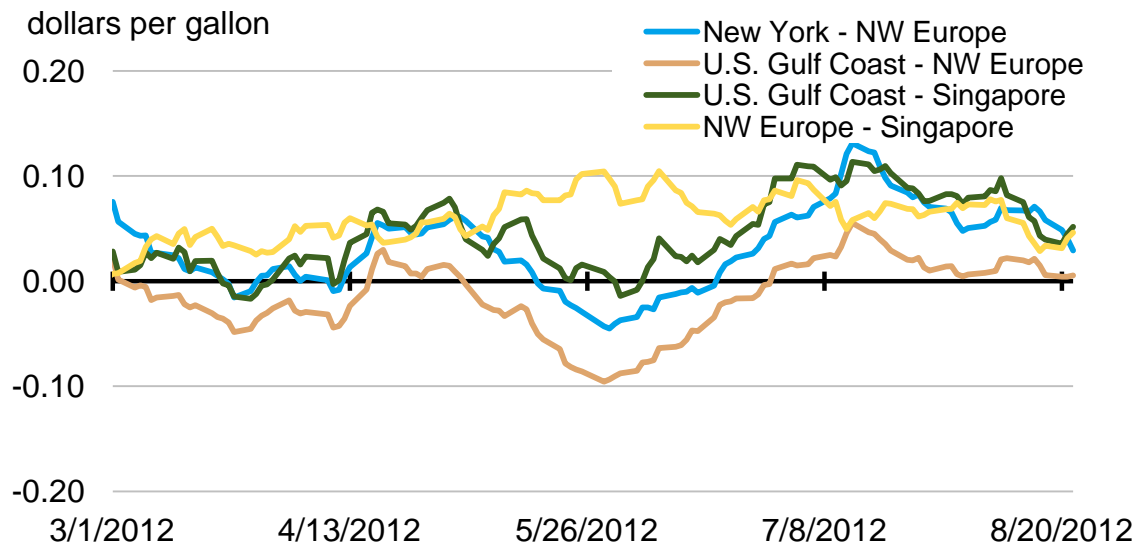
Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME).

Figure 28. Global Jet Fuel Spot Price Averages



Source: U.S. Energy Information Administration, based on Bloomberg, L.P.

Figure 29. Global Jet Fuel Spot Price Differentials



Note: All prices represent rolling 5-day averages.

Source: U.S. Energy Information Administration, based on Bloomberg, L.P.