

2010 in Review

February 3, 2011

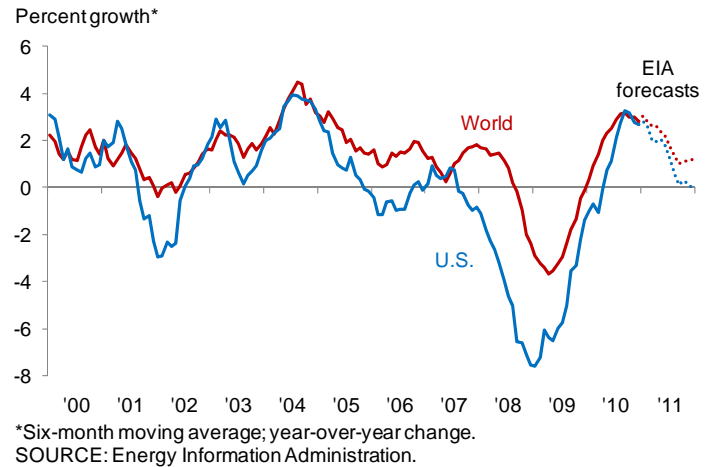
The moderate pace of economic recovery and ample inventories led to relatively stable oil prices in 2010, though a modest upward trend was seen toward the end of the year. Prices averaged \$79 per barrel in 2010, ranging from a low of \$67 in late May to a high of \$92 in December (Table 1). The Energy Information Administration (EIA) estimates oil will average \$93 per barrel in 2011.

Natural gas prices peaked at \$7 per million Btu in the first half of January due to cold winter weather and hit a low of \$3 per million Btu in late October. Though prices were volatile, they averaged \$4.40 per million Btu, about 10 percent higher than in 2009.

Oil Demand

Oil demand resumed its upward trend in 2010 after two consecutive years of decline. According to the International Energy Agency (IEA), Global demand grew approximately 2.7 million barrels per day (b/d) in 2010. A large majority of this growth came from China, up 10.7 percent to 9.3 million b/d. Latin American consumption increased 5 percent, while total consumption in Organization for Economic Cooperation and Development (OECD) nations grew more slowly at 1.5 percent. OECD consumption is expected to fall slightly in the coming years, while non-OECD demand will drive increases in world consumption. Global demand is expected to rise 1.6 percent in 2011.

Chart 1
Oil Demand Exhibits Strong Growth



U.S. oil consumption resumed its growth in 2010 as well. The EIA estimates that U.S. consumption rose 2.6 percent in 2010 even as prices rose moderately from the prior year. Expectations are that demand will grow modestly in 2011 (Chart 1).

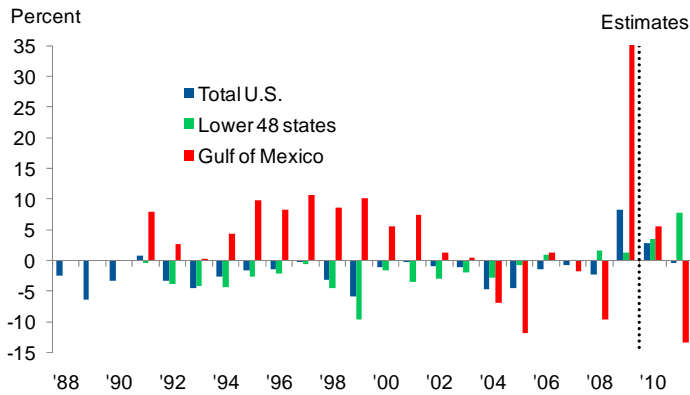
Oil Supply

According to the EIA, world oil supplies grew about 2.5 percent in 2010, slightly less than consumption growth of 2.7 percent. OECD production grew slightly, with increases in North American production offsetting declines in Europe.

	2009 avg.*	2009 high	2009 low	2010 avg.*	2010 high	2010 low	% change 2009–10
Oil, West Texas Intermediate (\$ per barrel)	61.83	81.37	33.98	79.42	92.21	66.88	28.5
Natural gas, Henry Hub (\$ per MMBtu)	3.95	6.10	1.92	4.38	7.38	3.17	10.9
Diesel, New York Harbor (\$ per gallon)	1.66	2.12	1.12	2.16	2.61	1.89	29.7
Gasoline, New York Harbor (\$ per gallon)	1.66	2.10	1.04	2.10	2.48	1.82	26.2

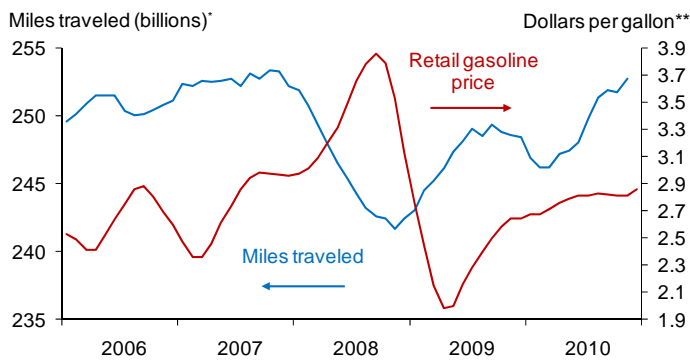
*Average of daily prices.
SOURCES: *Wall Street Journal*; calculations by the Federal Reserve Bank of Dallas.

Chart 2
Gulf of Mexico Production Expected to Decline



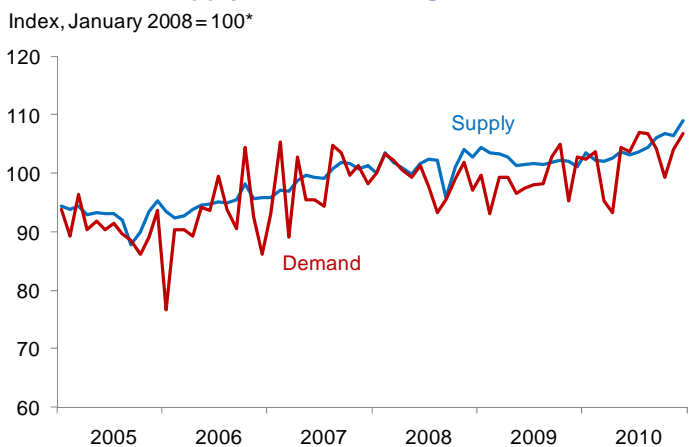
SOURCES: Energy Information Administration; calculations by the Federal Reserve Bank of Dallas.

Chart 3
Miles Traveled Increases as Gasoline Prices Rise



*Seasonally adjusted; six-month moving average.
 **Six-month moving average.
 SOURCES: Energy Information Administration; seasonal and other adjustments by the Federal Reserve Bank of Dallas.

Chart 4
Natural Gas Supply Exceeds Rising Demand



*Seasonally adjusted.
 SOURCE: Bentek Energy.

Non-OECD production rose by 3 percent, with gains primarily attributable to the former Soviet Union, China and Latin America.

Organization of the Petroleum Exporting Countries (OPEC) nations increased crude oil production modestly in 2010, averaging 29.2 million b/d. OPEC excess capacity—excluding Iraq, Nigeria and Venezuela—stood at 4.9 million b/d at the end of December, its lowest level in two years.

U.S. crude oil output grew for the second consecutive year in 2010. Despite a Gulf of Mexico drilling moratorium, gulf production increased 5.5 percent, accounting for most of the 2.8 percent rise in U.S. production. The drilling moratorium is expected to take its toll in 2011, however, with gulf production predicted to decline by 13 percent (*Chart 2*). While the deepwater moratorium officially ended on Oct. 12, the Bureau of Ocean Energy Management has since developed and applied stringent new regulations, resulting in severely delayed new-permit issuance.

Inventory

After rising sharply in 2009, OECD crude oil inventories showed almost no year-over-year growth in 2010. According to the EIA, OECD industry stocks declined to 58.7 days of forward demand in November. Though OECD inventories remain at five-year seasonal highs, both on-shore and floating storage have declined recently, suggesting consumption is strong enough to chip away at elevated inventory levels.

U.S. oil inventories have declined recently. However, supplies at Cushing, Okla., remain high, leading to a wide gap between West Texas Intermediate and Brent prices.

Gasoline Prices

Retail gasoline prices, which take into account taxes and transportation costs, climbed throughout 2010 and ended the year above \$3 per gallon. Despite the rise, gasoline consumption increased 0.5 percent year-over-year and vehicle miles driven gained 0.6 percent through October (*Chart 3*). Gasoline prices in the Gulf Coast region, which includes Texas, were the cheapest of the five districts tracked. They averaged \$2.65 per gallon in 2010, according to EIA data, and remained below \$3 per gallon at the end of 2010.

Distillate Demand

Diesel fuel consumption is tied closely to economic activity because it's the primary source of fuel for transporting goods and powering heavy machinery. As the economy recovered, sales and industrial activity increased, driving

diesel demand up 4.1 percent through November. Continued improvement in industrial activity should improve diesel demand as well.

Natural Gas

The average natural gas price in 2010 was 10 percent higher than in 2009 despite increased production, mostly from unconventional resources such as shale. Greater industrial demand drove a 3.5 percent increase in total natural gas consumption in 2010. Even so, production from unconventional resources has kept total supply above demand (*Chart 4*). Consumption has yet to put a significant dent in inventories, which remain near five-year seasonal highs. The EIA expects natural gas prices to average to \$4.33 in 2011.

Electricity Consumption

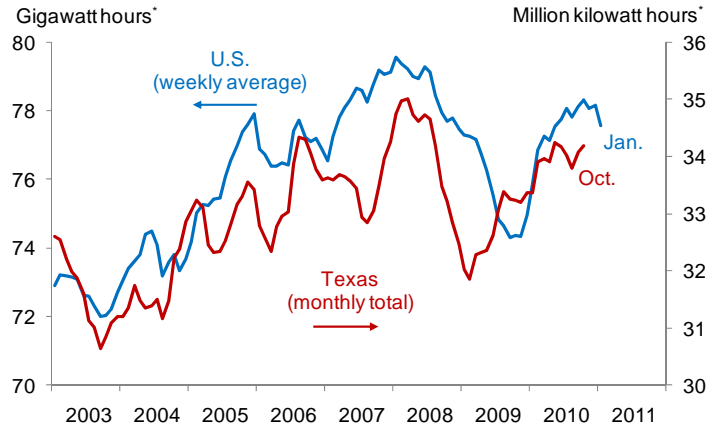
Electricity generation rebounded in 2010, driven by higher demand from across the spectrum of residential, commercial and industrial end users (*Chart 5*). If consensus forecasts prove accurate and the economy picks up in 2011, electricity demand is likely to rise further.

—Jackson Thies and Mine Yücel

About the Authors

Thies is a senior research analyst and Yücel is a vice president and senior economist in the Research Department at the Federal Reserve Bank of Dallas.

**Chart 5
Electricity Generation Rebounds in 2010**



*Seasonally adjusted; six-month moving average.
SOURCES: Edison Electric Institute; Energy Information Administration; seasonal and other adjustments by the Federal Reserve Bank of Dallas.