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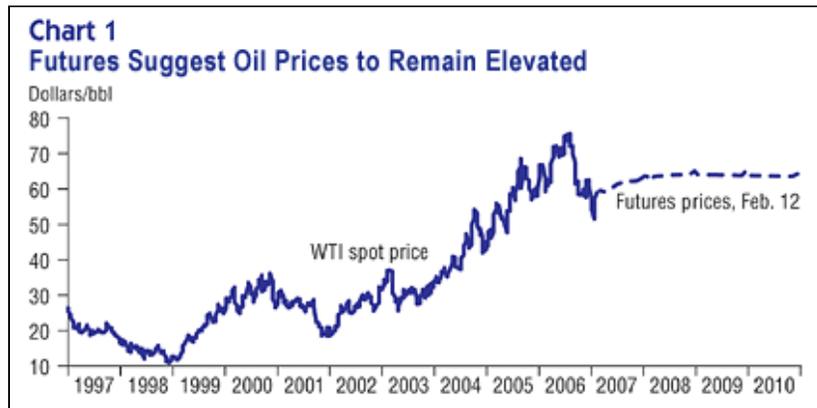
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Quarterly Energy Update

First Quarter 2007

Volatile Oil and Natural Gas Prices

The year is little more than a month old, but oil prices have already taken a roller coaster ride. In the third week of January, prices slipped to a 17-month low of just over \$50 per barrel for West Texas Intermediate crude oil (WTI)—35 percent below the \$77 high posted on July 14 (*Chart 1*). The plunge reflected weak demand and high petroleum product inventories that were the result of mild winter weather in December and January, increased fuel efficiency and fuel switching to natural gas. By early February, however, weather-related demand increases, escalating geopolitical tensions, short-term supply bottlenecks and apparently improved compliance by the Organization of Petroleum Exporting Countries (OPEC), with its self-imposed quotas, pushed oil prices to nearly \$60 per barrel.



The futures market shows oil prices rising gradually over the next few years. The futures market doesn't have a good record of forecasting future oil prices, but it does well to represent current views about future market conditions. In practice, oil prices are likely to be much more volatile.

Short-run market conditions can be assessed by looking at the pressure on OPEC to restrain its production. For 2007, the U.S. Energy Information Administration (EIA) and the International Energy Agency (IEA) see world oil demand growing faster than non-OPEC supply, which would decrease pressure on OPEC to restrain its output and would put upward pressure on the price of oil (*Table 1*). In contrast, OPEC sees world oil demand growing more slowly than non-OPEC supply, which would increase pressure on OPEC to cut production and would put downward pressure on the price of oil.

Table 1
Projected Changes in World Oil Consumption and Production for 2007
 (million barrels per day)

	World Consumption	Non-OPEC Production	Call on OPEC
EIA	1.6	1.0	0.6
IEA	1.6	1.1	0.5
OPEC	1.3	1.8	-0.5



Current Analysis

- Dallas Beige Book
- Economic Updates
- Quarterly Energy Update
- Metro Business-Cycle Indexes
- Regional Economy Slide Show
- Texas Manufacturing Outlook Survey

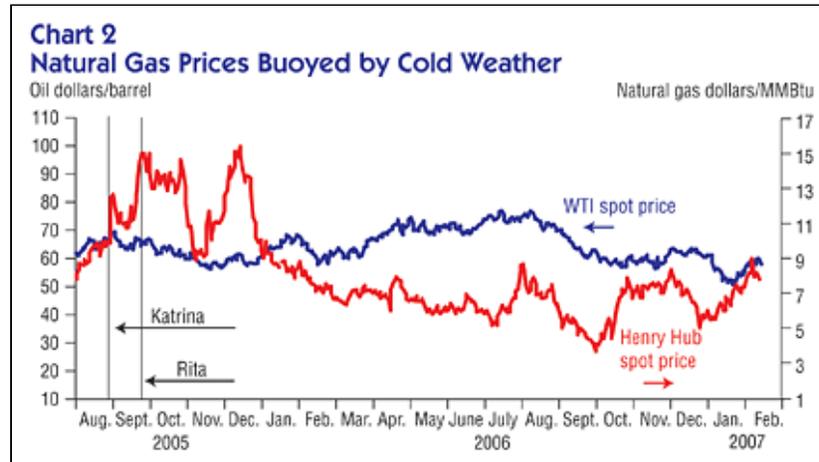
Other Resources

- Fed in Print—an index of Federal Reserve economic research
- Catalog of Public Information Materials

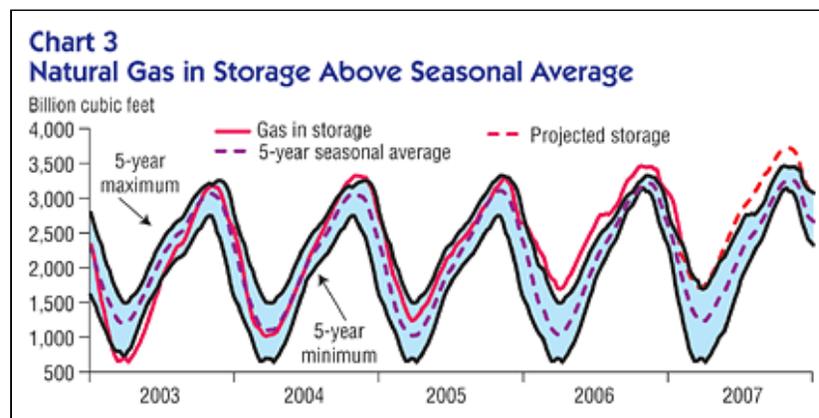
In the long run, oil demand can be expected to grow as globalization drives the world economy forward—even as higher prices induce energy conservation. Whether supply keeps pace largely depends on the rate at which abundant world oil resources are developed. According to Brown and Alm (2006), about 90 percent of the world's conventional oil resources is in the hands of national oil companies or countries with weak market institutions. That suggests relatively slow development of world oil resources and prices that remain relatively high.

Cold Weather Props up Natural Gas Prices

Natural gas prices also slipped considerably in December, reaching a low of \$5.48 per million Btu at Henry Hub in early January (Chart 2). By early February, however, colder-than-normal winter weather pushed the price over \$8 per million Btu.



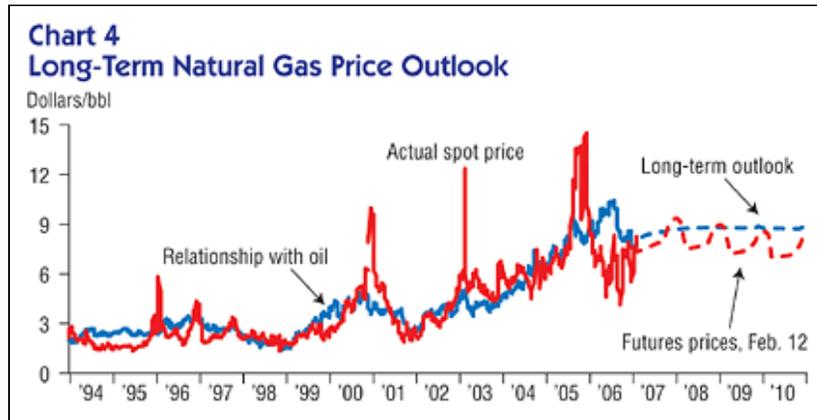
Inventories reflect the changing market conditions for natural gas. As warm weather restrained consumption, the amount by which storage exceeded the normal seasonal average increased from Nov. 10 through Jan. 12. After this storage differential reached a high of 570 billion cubic feet (bcf) on Jan. 12, cold weather (and possibly reduced natural gas production) drove the differential down to 465 bcf on Feb. 8 (Chart 3).



The futures market shows natural gas prices strengthening throughout 2007, but the overhang of inventories suggests that natural gas prices could fall sharply by midsummer if weather resumes its normal seasonal pattern. Reduced natural gas production, as some analysts now expect, and a prolonged spell of colder-than-normal winter weather could further reduce the storage differential and alleviate some of the downward pressure on prices.

Looking longer term, the primary driver of natural gas price is crude oil. Daily market variations are determined by weather, seasonality, storage conditions and disrupted production, but the overall direction is set by crude oil prices. Whenever inventories are restored to normal levels, the current trajectory of

crude oil prices suggests elevated natural gas prices are likely over the next few years (*Chart 4*).



—Stephen P. A. Brown and Raghav Virmani

About the Authors

Brown is director of energy economics and microeconomic analysis and Virmani is an economic analyst in the Research Department at the Federal Reserve Bank of Dallas.

Reference

[“Running on Empty? How Economic Freedom Affects Oil Supplies.”](#) Stephen P.A. Brown and Richard Alm, Federal Reserve Bank of Dallas *Economic Letter*, April 2006.

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