Decontrol Could Increase Texas' Share of District Gas Production

The natural gas market is heavily regulated at the present time. Prices for nearly all gas are set by formulas established in the Natural Gas Policy Act of 1978 (NGPA). Congress, however, is considering changing the provisions of NGPA, and the Reagan Administration is supporting legislation that would eliminate all price controls for gas prior to 1985. Any such change would be especially important to the states of the Eleventh District: Texas, Oklahoma, New Mexico, and Louisiana supply about 80 percent of total domestically marketed natural gas. Although decontrol is unlikely to affect the District's aggregate share of production very much, the distribution of production among District states would be affected. Texas' share of the District's production is likely to rise, while the shares of Oklahoma and New Mexico can be expected to fall.

Background on the Current Gas Market

NGPA classified each gas well according to the date the gas reservoir was discovered and the difficulty associated with developing and producing the gas. Each category was assigned a different wellhead price formula. In general, producers of gas from newer or from more costly wells are allowed to charge pipeline companies higher prices than owners of older gas.

Analysts usually combine the NGPA categories into three groups: old gas, which is from reservoirs discovered prior to enactment of NGPA; high-cost gas, which is found below 15,000 feet or in formations from which gas is difficult to extract; and new gas, which covers most gas found subsequent to passage of NGPA other than high-cost gas. Price ceilings on old gas are often less than $1 per thousand cubic feet (Mcf), while new gas has ceiling prices closer to $3 per Mcf. High-cost gas,

Well Permits Do Not Yet Indicate A Recovery In Texas Oil Field Activity

Well permit applications in Texas have risen in two of the last three months. Because in Texas a permit must be granted before drilling begins, well permits are considered a leading indicator of Texas drilling activity, and recent increases in well permit applications may foreshadow recovery in Texas oil field activity. However, because the well permit series is volatile, recent upward movements may not reflect a new trend. As a result it proved too early to forecast a strong recovery in Texas drilling activity using movements in well permit applications alone.

Given that the average well in Texas takes about two weeks to drill and that not all well permits issued are used before they expire, the average Texas well permit can be expected to require a 0.3 to 0.6 drilling rig month sometime during the year for which it is valid. As seen in Chart 2 (overleaf), although well permit applications generally move ahead of or with the rig count, the well permit series is much more volatile. The volatility of the well permit series makes visual identification of turning points that lead movement in the rig count series nearly impossible.

However, an econometric technique, known as the Granger test, was used to confirm that well permit applications are a statistically significant leading indicator of the rig count. The statistical significance of the well permit series as a leading indicator of the rig count permits the use of a series of regression equations to calculate expected rig counts and a 90-percent confidence interval for the months of June through December. As shown by these estimates (Chart 2), a strong recovery in Texas drilling activity, as measured by the rig count, is not likely during the next 2 to 3 months. A strong recovery is more likely in September and later months. And at least a mild recovery can be expected by then. However, the width of the 90-percent confidence interval precludes a claim that recovery in the Texas rig count is definitely indicated by recent movements in well permit applications.

—Stephen P. A. Brown
Chart 1
AVERAGE WELLHEAD PRICES FOR NATURAL GAS

UNITED STATES

TEXAS

SOURCES: Texas Comptroller of Public Accounts.
U.S. Department of Energy.

Chart 2
TEXAS WELL PERMIT APPLICATIONS

TEXAS RIG COUNT

NOTES: Dashed Lines shown for dates after May 1983 represent expected values.
Shaded area represents an estimated 90 percent confidence interval about expected values.
SOURCES: Hughes Tool Company.
Texa Railroad Commission.
Federal Reserve Bank of Dallas.

SEISMIC CREW COUNT

WELL PERMIT APPLICATIONS

Federal Reserve Bank of Dallas.

SOURCES: Texas Railroad Commission.
Louisiana Office of Conservation.
Oklahoma Corporation Commission.
Federal Reserve Bank of Dallas.
ENERGY BRIEFS

Stable oil prices appear to have ended the slide in energy industries.

- Restrained production in non-OPEC countries, an end to inventory depletion, and increasing consumption have firmed spot prices around the official OPEC price of $29 per barrel. As a consequence, there does not appear to be any immediate threat or promise of a major oil price change.
- Reflecting the improved outlook for oil prices, seismic activity (widely considered a leading indicator of new drilling) registered its second consecutive monthly gain in May to 455, marking the first two-month increase since the count peaked at 744 in September 1981.
- The rig count, which had slumped to a low of 1,807 in April, has responded slowly to the firming oil price.
- Nevertheless, high inventories of oil field equipment continue to be reflected in declining employment in Texas manufacturing of oil field machinery. Employment in the manufacturing of oil field machinery was 43.9 thousand in May, 50.9 percent below the high of 89.4 thousand reached in February 1982.
- In the Eleventh District, however, the national pattern of increased drilling activity has not been duplicated. The rig count continued to decline in June, down 1.7 percent from May on a seasonally adjusted basis. The relatively poor performance of the District may be caused by a slump in drilling for natural gas created by uncertainty about pending decontrol legislation.
- Increases in demand for oil products were sufficient to cause refining to rebound sharply in March and April. The Texas refining production index for April was 18.2 percent above the February index and 16.9 percent above its value of April a year ago.

ROTARY DRILLING RIGS RUNNING

CRUDE OIL PRODUCTION
AND NATURAL GAS EXTRACTION
(Seasonally Adjusted)

<table>
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1. Louisiana, New Mexico, Oklahoma, and Texas.
SOURCES: Hughes Tool Company.
Federal Reserve Bank of Dallas.

REFINERY PRODUCTION

TENAS ENERGY INDUSTRY EMPLOYMENT

SOURCES: Board of Governors, Federal Reserve System.
Federal Reserve Bank of Dallas.

Federal Reserve Bank of Dallas.
Decontrol (cont.)

which is partially deregulated, has been receiving prices above $5 per Mcf.

Because of differences in the proportions of gas from each of the NGPA categories, average wellhead prices vary across states. As shown in Chart 1, for example, the average wellhead price in Texas has remained below the national average, with the difference becoming larger each year. Although Texas has been developing reserves of high-cost deep gas, this divergence reflects the relatively small share of Texas' production that is drawn from deep wells.

The average wellhead price of gas in New Mexico and Oklahoma, on the other hand, reflects a larger percentage of high-cost gas in those states than in the nation. Average wellhead prices last December, for example, were $2.73 per Mcf in Oklahoma, $2.66 per Mcf in New Mexico, and $2.56 per Mcf in the nation. The average wellhead price in Texas was only $2.25 per Mcf.

Consequences of Price Decontrol

Most studies predict a short-run increase in the average price of gas from the decontrol of all gas prices. As a result, the price to final users can be expected to rise, resulting in a reduction in the quantity of gas demanded.

In addition to affecting the average price, removal of price controls can also be expected to eliminate the current differences between wellhead prices. Prices for old gas should rise, while high-cost gas prices should fall. This convergence in prices would then affect production and exploration for the different categories. Gas with the highest costs of production (which do not include development costs) would be the most likely source of any reduction in output and the least likely candidate for further exploration and development.

Gas in the high-cost NGPA categories is often assumed to be both more expensive to develop and more expensive to produce than gas in the other categories. After decontrol, production of this gas may no longer be profitable, and its production may be "shut-in" until the low cost sources begin to run out.

Deregulation, therefore, would stimulate additional production of old gas, with producers of high-cost gas experiencing a reduction in prices and sales. Texas, whose low average wellhead price indicates a relatively small percentage of high-cost gas, would have a larger increase in prices and a smaller proportionate reduction in marketed production than Oklahoma or New Mexico, which have higher average wellhead prices.

—Ronald H. Schmidt