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TECHNICAL UPDATE

Recent and 23-Year Oil and Gas Prices and Comparison to Other Consumer Products

May 2006

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PRICES FOR NATURAL GAS AND HOME HEATING OIL

This report is an update to the fuel price comparisons prepared by OMA in February 2003, June 2004, and March 2005. In recent years, natural gas prices have been higher than home heating oil in the regions of the US where oil heat is common. Figure 1 below summarizes these findings for average state prices for the period from 1983 through 2004 based on data published by the US Department of Energy. The following is a brief summary of key points regarding these fuel price data for a 13-state region.

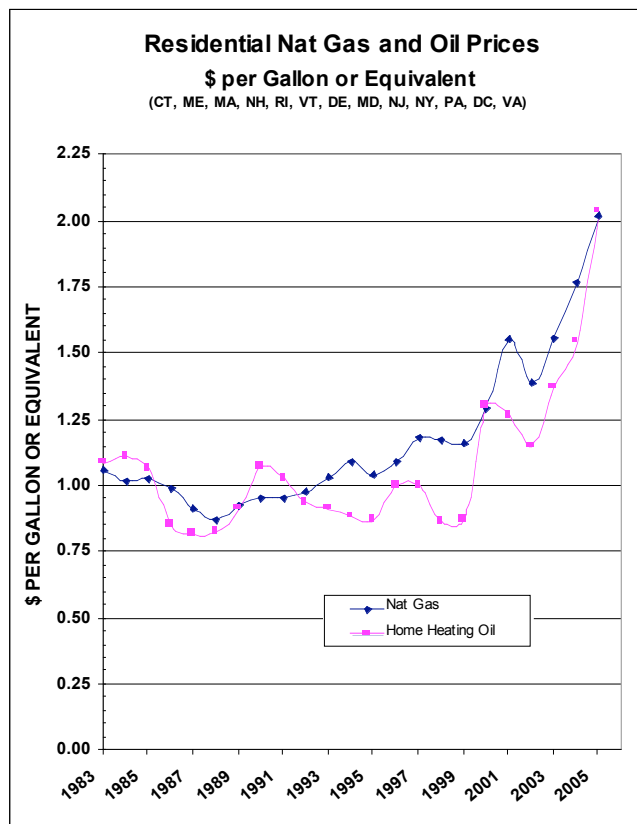


Figure 1. Average Natural Gas and Oil Prices

Figure 1 clearly shows that the average price of natural gas sold to residences has been higher than the price of home heating oil from 1992 through 2004, with one brief exception in the year 2000. In 2005, oil prices were slightly higher than natural gas prices at \$2.04 and \$2.02 per gallon or equivalent, respectively. **Residential oil prices were lower than natural gas prices in the 13-state region examined for 12 out of the past 14 years.** Also noteworthy is the fact that oil prices were *significantly* lower than natural gas prices for 11 of the past 14 years.

Key observations regarding these residential gas and oil price data include the following:

- The average price of natural gas over the **past 23 years** was \$1.14 per gallon equivalent, while home heating oil averaged \$1.07 a gallon – **oil was 6 percent lower.**
- The average price of natural gas over the **past 15 years** was \$1.29 per gallon equivalent, while home heating oil averaged \$1.13 a gallon – **oil was 12 percent lower.**
- The average price of natural gas over the **past 10 years** was \$1.42 per gallon equivalent, while home heating oil averaged \$1.23 a gallon – **oil was 13 percent lower.**
- The average price of natural gas over the **past 5 years** was \$1.66 per gallon equivalent, while home heating oil averaged \$1.47 a gallon – **oil was 11 percent lower.**
- Oil prices were consistently and **substantially lower than** natural gas for the periods from 1992 to 1999 and 2001 to 2004 (See Figure 1).
- In 2001, 2002, 2003, and 2004 average residential oil prices were \$0.28 per gallon, \$0.24 per gallon, \$0.19 per gallon, \$0.22 per gallon lower than natural gas, respectively.

LONG-TERM OIL AND GAS PRICE TRENDS

Both oil and gas prices have been changing over the past two decades as seen in Figure 1. Oil prices have been rising and falling in a cyclical pattern from 1983 to 2003, while natural gas prices have been trending upward without the frequent periodic drops observed for oil. In order to evaluate these trends, linear regression analyses were again performed to track average trends in residential oil and gas prices over the past 23 years. The results are plotted in Figure 2.

Natural gas prices have been increasing in a steady pattern for the past 17 years from 1988 (Year 6) to the present time, with slight decreases for three years. For these years (years 13, 16, and 20), prices dropped slightly within a rising trend line. The US Department of Energy data that are shown in Figure 2 indicate that average natural gas prices have risen from \$0.87 to \$2.02 for the energy equivalent to a gallon of oil over that time period. In contrast, oil prices have not steadily increased, but instead, have periodically risen and fallen over that interval. The last three years appear to be an exception to the historic oil prices trend. Clearly, the average price for oil has been much less than for natural gas over the past two decades. The lower average rate of increase in oil prices compared to gas prices is evident by examining the linear regression trend lines in Figure 2. The slope of the gas price line is higher than the slope of the oil price line.

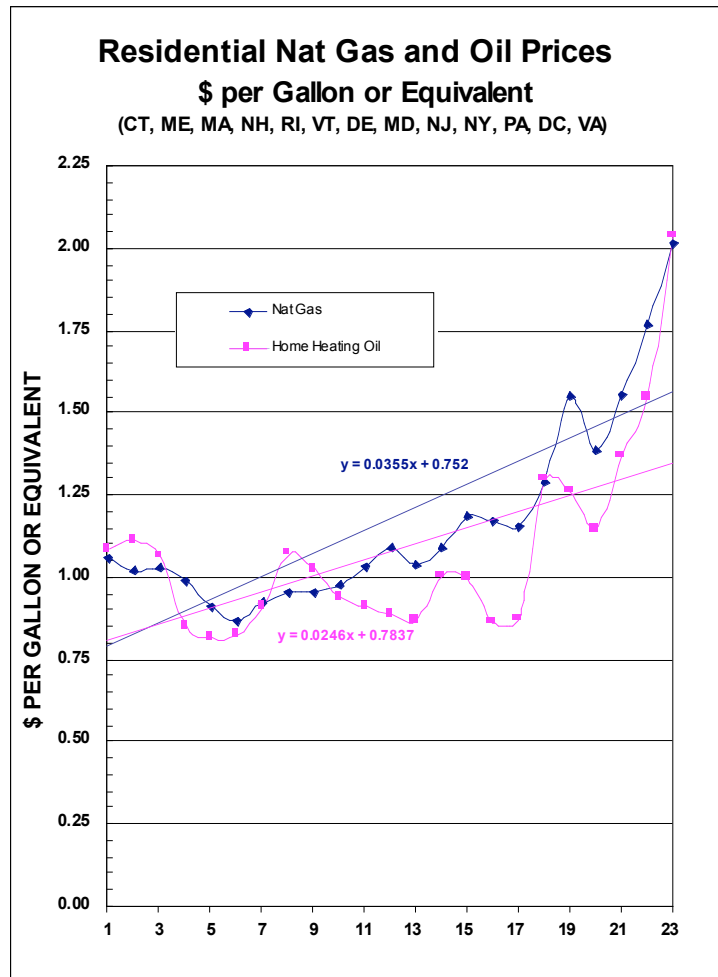


Figure 2. 23- year Trends

The linear regression analyses directly compare the difference in price increases for gas and oil as depicted by the trend lines in Figure 2 over the past 23 years. The slope of the natural gas trend line is 0.0355 dollars per year, compared to oil at 0.0246 dollars per year.

Therefore average natural gas prices have increased at an average rate that is about 40 percent faster than home heating oil. For 1987, the linear regression analysis shows that the 23-year trend lines for oil and natural gas had a value of \$0.91 and \$0.93 per gallon or equivalent, respectively. The US Department of Energy data show that from 1988 to 2005 the average price of natural was \$1.26 per gallon equivalent, while oil prices averaged \$1.10 per gallon for the same period. The average price of natural gas from 1988 to 2005 was \$0.16 per gallon equivalent higher than oil. Therefore, the cost to heat a home with natural gas over the past 17 years has been approximately 16 percent higher than the cost to heat with oil.

The overall conclusion of this trend analysis is that natural gas prices have increased steadily over the past two decades at an average rate of \$0.036 per gallon each year while oil prices have risen and fallen in four cycles over the same time interval.

EXPECTED VERSUS ACTUAL OIL PRICES

Residential oil prices increased at a rate that was much lower than most other consumer products from 1983 to 2003. In 2004 and 2005 the rate at which oil prices rose increased above past levels, but still fell below the expected prices based on the Consumer Price Index (CPI). Figure 3 is a plot of projected residential oil prices based on the CPI and actual prices starting with 1983 as the base year. The CPI price adjustment is based on data from the US Department of Labor, Bureau of Labor Statistics.

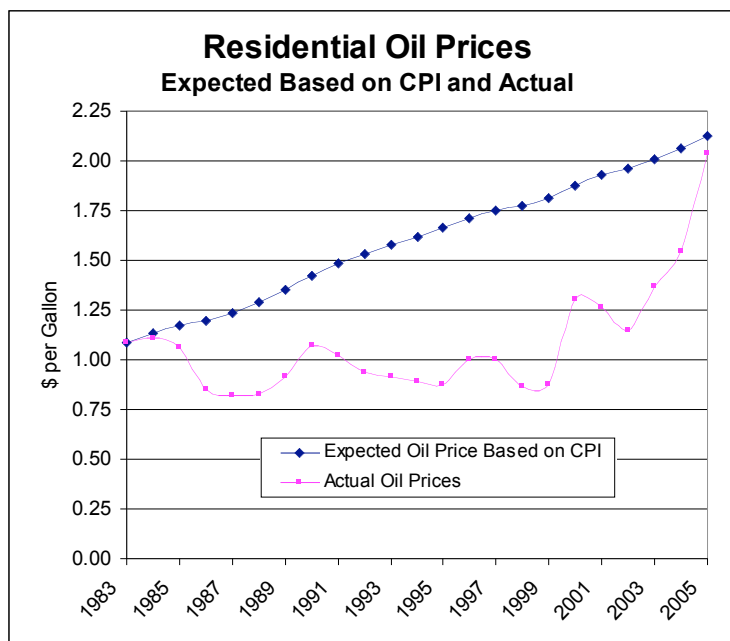


Figure 3. Expected Versus Actual Oil Prices

In 1983 the average residential oil price in the states that were evaluated was \$1.09 per gallon. The upper line in Figure 3 shows the expected price for oil when it is adjusted by the CPI which increases each year reflecting the gradual increase in cost of consumer products. This plot shows that if oil kept pace with other consumer products, oil prices would have increased gradually from 1983 through 2005. Oil prices would have risen from \$1.09 to \$2.13 over that 22 year period. That did not happen.

The lower plot in Figure 3 shows actual oil prices based on US Department of Energy publications. Oil prices actually dropped from 1984 to 1987 and then cycled up and down with an average price that was less than \$1.00 per gallon until the year 2000. Over that same period, consumer prices continued to rise. For example, in 1999 the average oil price was \$0.87 per gallon, while the projected price based on adjustment by the CPI was \$1.82 per gallon. Heating oil consumers benefited from much lower than expected prices and heating costs that were 36 percent lower than expected if oil prices kept pace with the average consumer product.

Oil prices increased to \$1.30 a gallon in 2000, but then decreased again in 2001 and 2002 to \$1.27 and \$1.15 a gallon, respectively. These were still far below the CPI adjusted prices of \$1.88, \$1.93, and \$1.96 per gallon for 2000, 2001 and 2002. Average oil prices rose again in 2003 to 2005. However, even with these recent increases, the average price in 2005 was \$2.02 per gallon which is less than the CPI adjusted value of \$2.12 per gallons using the base year of 1983.

The rise in residential heating oil prices over the past two decades is less than natural gas, and most other consumer products. Figure 3 clearly shows that the home heating oil prices have been much lower than expected based on annual adjustments using the Consumer Price Index. As a result, the average cost to heat homes with oil has been more than 30 percent lower than anticipated if oil prices had increased at the same rate as other consumer products. While oil prices have been increasing over the past three years, oil consumers have enjoyed two decades of relatively low oil prices and heating costs.

The higher fuel prices in recent years can be offset by investing in a range of energy conservation activities. This includes the installation of modern high-efficiency oil heating equipment that can lower fuel use by as much as 50 percent in some cases based on recent studies. Many of these equipment upgrades offer substantial cost savings and are economically attractive with returns on investment of 20 percent to 50 percent in some cases.

If you have any questions about the information presented in this Technical Update, or if you would like information on energy conservation opportunities with oil heat, please give me a call at 203-459-0353, or e-mail me at erc@optonline.net.