



Gasoline in 1996: A Transient Imbalance

**Statement by
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**before the
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The reason for this hearing is the recent extraordinary increase in US gasoline prices. On a year-to-year basis the current (end April) US gasoline price is up 14.5 ¢/gallon, or 12.5%, a substantial but not shocking increase. What has called national attention to the increase has been its speed: From early February to early May gasoline retail prices rose by 18.5¢ or 16.5%. Not surprisingly this has caused public consternation, and the explanation is not as self-evident as it was during Operation Desert Storm in 1990 or the Iranian revolution in 1979, both of which cut off substantial oil supplies.

Gasoline Prices: Long-Term Trend Down

As you can see from Table I, gasoline prices, excluding tax, have been stable in nominal dollars since the world oil price collapse of 1986. Except for a brief period during the Persian Gulf conflict of 1990/91, the average US retail price ranged between 70-80¢/gallon ex-tax in nominal dollars. Thus, gasoline prices declined in real dollars during this period while demand grew at an annual rate of nearly 1.5% and environmental mandates increased refining and distribution costs. As with most commodities, however, the steady annual averages often mask substantial

	Nominal, cents/gallon			Real, 1995 cents/gallon		
	Pump	Tax	Excl. Tax	Pump	Tax	Excl. Tax
1981	133.2	12.8	120.4	217.1	20.9	196.2
1982	125.9	14.0	111.9	193.1	21.5	171.6
1983	122.1	18.9	103.2	179.7	27.8	151.9
1984	121.0	20.9	100.1	171.4	29.6	141.8
1985	116.4	21.9	94.5	159.6	30.0	129.6
1986	91.7	22.1	69.6	122.4	29.5	92.9
1987	95.4	23.3	72.1	123.5	30.1	93.4
1988	94.5	24.0	70.5	118.0	29.9	88.1
1989	101.4	24.5	76.9	121.6	29.4	92.2
1990	113.5	25.9	87.6	130.4	29.7	100.7
1991	115.3	30.9	84.4	127.4	34.2	93.2
1992	113.0	32.3	80.7	121.6	34.8	86.8
1993	110.9	34.0	76.9	116.3	35.7	80.6
1994	110.6	38.2	72.4	113.4	39.1	74.3
1995	114.1	39.2	74.9	114.1	39.2	74.9
1996 (end-Apr)	124.0	39.3	84.7	121.8	38.6	83.2

Source: Based on *Oil & Gas Journal* Database

volatility during the year. Last year, for instance, gasoline prices rose sharply from March to June and then declined as sharply from July to November. We may see a similar price pattern this year.

The gasoline market itself is not the reason for the price increase. In the first four months or so, demand rose by about 1% according to preliminary Energy Information Administration (EIA) data, well below the 2.2-2.4% increase projected for all of 1996. US refinery output of gasoline was in line with this demand level. Thus, for an explanation of the price increase we have to look primarily at *crude oil* prices, which did register a remarkable increase from early February to mid-April.

The Push Came from Crude Oil

Crude oil is the most important cost factor in gasoline. Last year the average US retail price of gasoline ex-tax was about 75¢/gallon. About 55% of this amount was the cost of crude oil to the refiner. Arithmetically, each \$1.00/bbl change in crude oil prices changes the refiner's cost by 2.4¢/gallon. Thus, the nearly \$6/bbl increase in WTI crude prices between mid-February and mid-April raised the cost of a gallon of gasoline by 14.5¢.

The proper question then is not, why did gasoline prices rise, but why did crude oil prices rise?

The principal reasons start with stocks, explained by supply, demand and weather -- in short rational behavior on the part of companies and consumers.

Why Did Crude Oil Prices Rise?

Inventories of oil are lower than they have been in many decades, the result of two major influences -- a new operating norm across the industry and the fundamentals of the market. As shown below, the generalization is most pronounced for crude oil but gasoline stocks and other products have moved in the same direction. Why?

The New Operating Norm: minimize

Across the economy, business firms have embraced "just-in-time" inventory management for its efficiency, the minimization of capital tied up in stocks. Computer control and communication was one of the developments that made such a policy workable, reducing the risk of running out of a feedstock or a finished good before new supplies could be delivered. The trend started decades ago in the oil industry, and touched all regions and products.

These inventory management policies have improved efficiency. They are one of the factors that allowed gasoline prices in 1995 to be at record lows on an inflation-adjusted basis, even in the face of increased cost.

Coping with a minimalist inventory holding philosophy required that the industry focus on the closest supply: local refineries instead of distant domestic refineries or imported product; the nearest import sources in preference to those at further distance. The oil industry faces long lead times for delivery of some supplies; imports from the Middle East, for instance,

~~the long transit time alone,~~ appropriate transaction and scheduling lead times. Crudes from nearby suppliers -- those from Central and South America, from Europe and West Africa -- have taken precedence over long-haul supplies. Imports from the Persian Gulf, which accounted for almost 25% of oil imports in 1991, accounted for about 18% in 1995.

**The Fundamentals, #1:
Supply and demand
surprises**

As I have discussed, the new operating norm for stocks brought other changes in operations, such as the careful rationalization in supply sources, a process that has been going on for some years. But some unpleasant supply and demand surprises in the fourth quarter of 1995 and the first quarter of 1996 played a dominant role in pulling the stock level down to unexpected lows and thus were the primary factors in the price push.

Looking forward from September, for instance, the International Energy Agency forecast that non-OPEC supply in the fourth quarter 1995 would be about 800,000 barrels per day higher than it turned out to be, and the same thing happened in its December projection: the Agency's forecast of non-OPEC supply for the first quarter was again about one million barrels per day higher than it turned out to be. (Examples of the unforeseen: the loss of 1 million barrels per day in Mexico's October production due to Hurricane Roxanne, slower-than-projected additions of North Sea production.)

The exceptionally cold and very prolonged winter (following an unusually warm winter last year) caused US oil demand to rise by a fast-paced 3% in the first four months of the year,

Figure 1

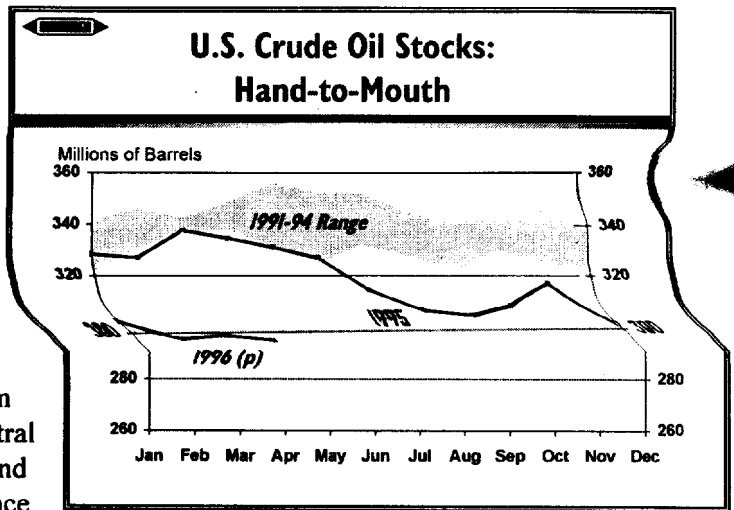
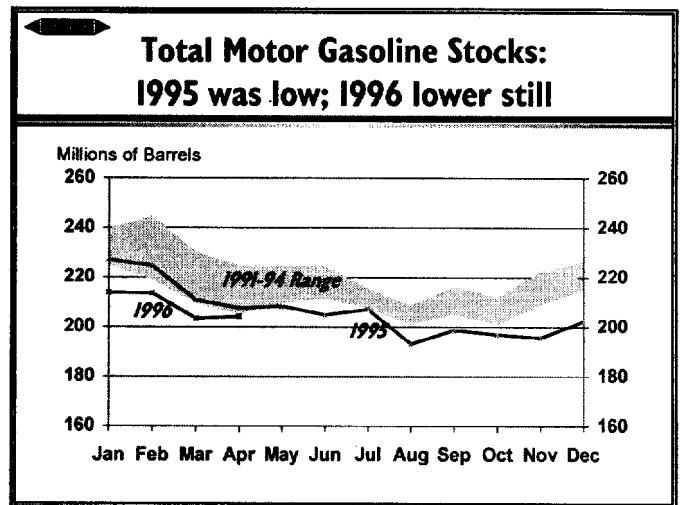


Figure 2



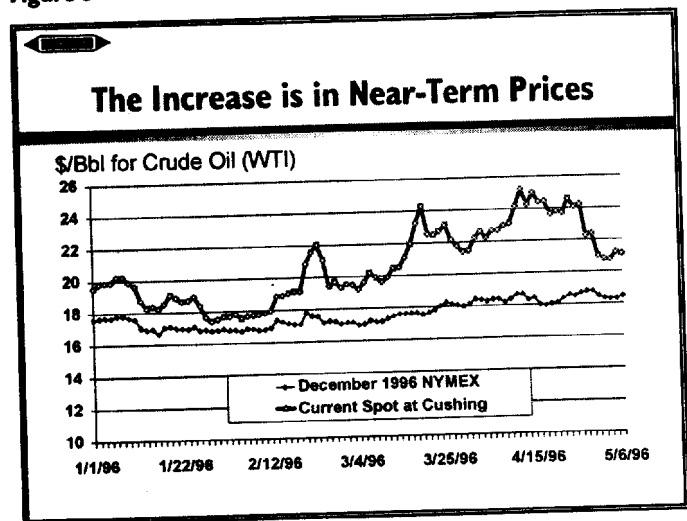
According to preliminary EIA estimates. European weather also turned colder than normal in the first quarter. We now estimate that world oil consumption was 2.3 million B/D higher than in the first quarter of 1995. In the previous two years (1995 and 1994) first quarter increases had amounted to 1.5 million B/D. In the US oil heat regions, much of the colder-than-normal weather was concentrated in the February/March period when normally the industry shifts away from heating fuels.

The Fundamentals, #2: Wait for prices to fall?

In addition to the unexpectedly tight market in the late fourth quarter 1995 and first quarter 1996, the market was predicting lower prices in the future. Thus, purchasers in the oil market, acting rationally, delayed buying as long as possible.

During the last half of 1995, increased production from non-OPEC countries was expected to be a drag on the market. Since January 1996, the possibility of Iraq's re-entry into world markets, albeit on a limited basis to provide humanitarian aid, has been an important factor in reducing future price expectations.

Figure 3



The figure illustrates the differential between current prices and the market's view, since the turn of the year, of December 1996 prices. Clearly, the outlook for December prices remained quite stable while current prices soared from early February to mid-April when they started to decline. What this shows is that the market perceived the current price increases to be temporary, and hence, held off building stocks in the expectation of a narrowing differential between the two prices.

The Market Reacted

Combine these factors and it becomes clear why spot prices rose so rapidly: The only way a refiner could promptly obtain the required additional barrel was by bidding premium prices. It was these premiums that escalated the prompt and short-term crude price to the high we saw in April. Thus, what caused these prices to move up the way they did was raw competition for the marginal prompt barrel of crude.

But a competitive market is inherently self-adjusting. As prices rise to supply the additional barrel, more barrels are offered and the price movement starts to reverse itself. We have already seen this in the crude oil market:

Spot prices of WTI and several other crudes have been declining since mid-April: WTI was \$25.13 on April 15 and is now (May 6) about \$21.00, a remarkable drop in such a brief period. The futures market has shown the same trend.

Gasoline retail prices are still moving up, but the pace has moved to a crawl. On the upward price path gasoline retail prices lagged the increase in crude prices. On the downward movement the same lag can be expected. The latest data in fact show that gasoline prices rose only 0.3 cents between April 29 and May 6, a clear sign that the worst is over if we don't get any new surprises..

A sharp increase in US gasoline imports during April is also likely to have a downward effect on prices. Extraneous events will also play a role in near-term price movements. Thus, a threatened strike of Norwegian oil workers, which could take up to 1.5 million B/D off the market, has already caused a brief reversal in the recent downward price movement. On the other hand, an agreement at the just resumed UN Security Council negotiations on Iraqi oil exports would have an instant downward effect on crude prices. However, any price decline is likely to be limited by the need to rebuild stocks.

A Word on Profits

In closing I would like to make a brief comment about the oil industry's earnings. There has been much talk lately about the high profits as a result of the price increase.

It is of course correct that the higher crude prices are improving the earnings of crude producer, the upstream sector of the industry, worldwide. However, refiners may not have benefited from the gasoline price rise since it was approximately offset by the increase in crude prices.

Viewed more broadly, the US refining industry has had a very poor earnings record by any US industry standard for a number of years. In 1995 its return on invested capital was a dismal 2%. Preliminary figures for the 1st Q of 1996 show about the same rate. In the last five years its rate of return has always been below that of risk-free US Treasury bills.

Excess capacity, rising costs in meeting new environmental regulations on production and products and growing gasoline imports are among the principal factors underlying this depressed earnings record.

Thus, as we begin to hear replays of the old charge of collusion and price fixing it is important to keep in mind that the US oil refining industry is demonstrably very competitive. In the current environment, profit margins have improved. Without an improvement from historical levels on a consistent basis, however, we are likely to see a continuation of the trend of refinery closings and a shift towards products imports.

Conclusion

To sum up, the answer to any investigation of the price spike that started in February is already apparent. The increase was brought on by market forces in a competitive environment and these same forces are now in the process of reversing the spike.