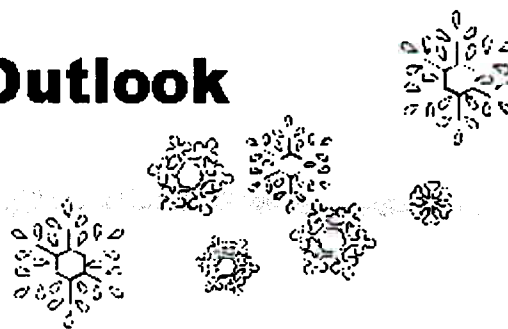


Winter Distillate and Natural Gas Outlook



John Cook
Director, Petroleum Division
Energy Information Administration

Coalition of Northeastern Governors
July 26, 2000

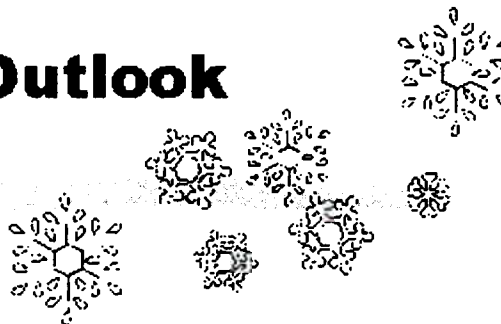


Slide 1 of 25

Notes:

-
- Throughout the summer, gasoline prices have drawn most of the public's attention, but EIA has been concerned over winter heating fuels as well.
 - Distillate inventories are likely to begin the winter heating season at low levels, which increases the chances of price volatility such as that seen last winter.
 - Natural gas does not look much better.

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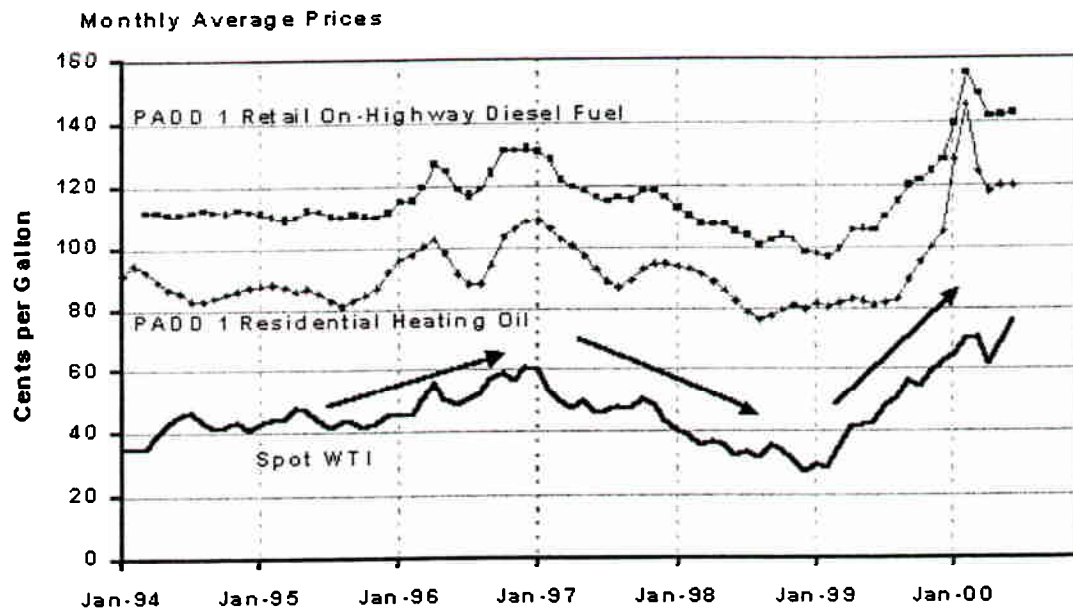


Slide 1 of 25

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 - Distillate inventories are likely to begin the winter heating season at low levels, which increases the chances of price volatility such as that seen last winter.
 - Natural gas does not look much better.

Distillate Prices Increasing With Crude Oil



Source: Spot Prices, DRI Platt's; Retail, EIA



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Notes:

- Residential heating oil prices on the East Coast (PADD 1) were 39 cents per gallon higher this June than last year (120 v 81 cents per gallon). As many of you already know, the increase is due mainly to increased crude oil prices.
- Diesel fuel prices behaved similarly, though with less of a spike last winter. The average East Coast diesel price in June was \$1.43, 37 cents higher than a year ago.
- This slide shows the strong influence crude oil prices have on retail distillate prices.
- Distillate tracks the crude price increases seen in 1996 and the subsequent fall in 1997 and 1998. Distillate prices have also followed crude oil prices up since the beginning of 1999.

Distillate Outlook

Crude Markets: Prices and impact on stocks

Distillate stocks

Factors Impacting Stocks

Demand and demand outlook

Supply and supply outlook

Stock Forecast

Distillate Price Forecast



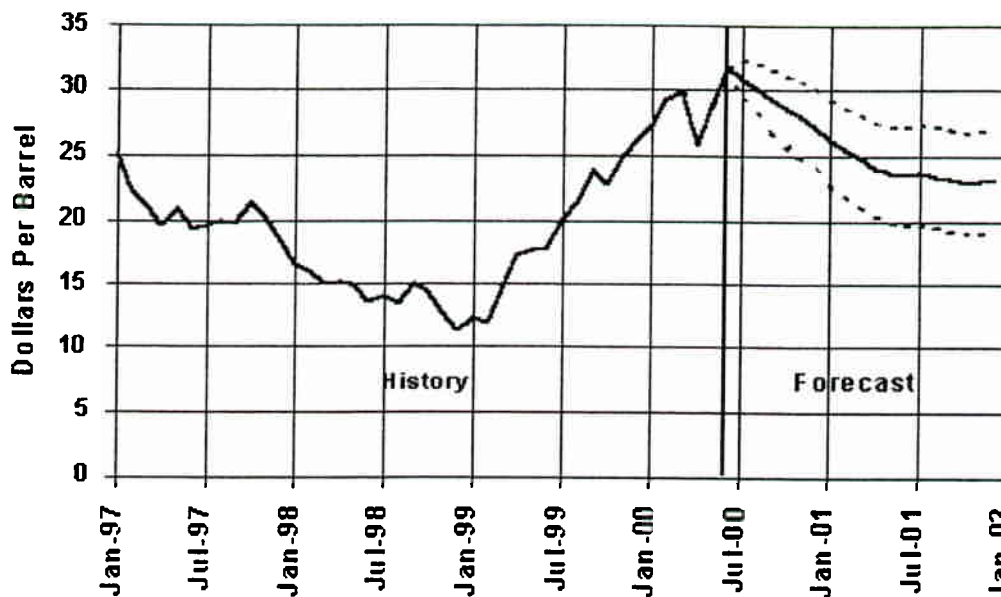
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Notes:

- The remainder of the presentation on distillates will cover how crude markets have changed to impact crude oil prices and thus distillate prices, and how this market led to the low stock environment we are currently experiencing.
- After seeing where distillate stocks now stand, we will explore the factors that impact stocks for the upcoming winter.
- Demand and supply will both be reviewed, followed by the outlook for each of these factors.
- Finally the outlook for inventories and prices will be presented.

When Will Crude Oil Prices Fall?

West Texas Intermediate Monthly Average Prices



Forecast: Energy Information Administration July Short Term Energy Outlook

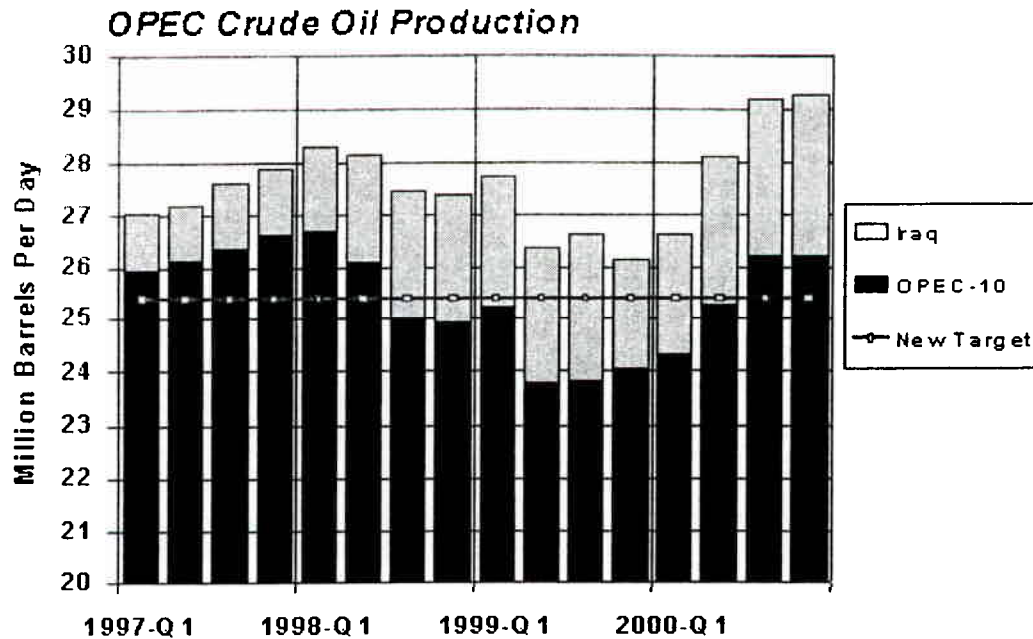


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Notes:

- World oil prices have tripled from their low point in December 1998 to June this year, pulling product prices up as well. But crude prices are expected to show a gradual decline as increased oil production from OPEC and others enters the world oil market, although the actual path may not be as smooth as that shown on the graph.
 - The average price of WTI was almost \$30 per barrel in March, but dropped to \$26 in April as the market responded to the additional OPEC production.
 - However, prices strengthened again, averaging almost \$32 in June, as growing gasoline production needs pulled on the crude market in the face of low crude oil and gasoline stocks.
 - With the recent OPEC and Saudi Arabian announcements of planned production increases, EIA expects adequate OPEC supplies to be introduced into the market throughout the rest of the year, which should bring WTI crude oil price down somewhat by year end. The OPEC Basket price on July 24 was \$25.70, just above the Saudi target.
- These crude oil price projections reflect:
 - Fairly low world demand growth during 2000 of 1.6 percent, or 1.2 million barrels per day.
 - Non OPEC production growth during 2000 of over 1.0 million barrels per day.
 - Growth in Iraqi production of 700 thousand barrels per day from Q1 to Q4 2000. Iraqi production is estimated at more than 3.0 million barrels per day in the fourth quarter 2000.
 - Growing OPEC leakage over the current OPEC target.

OPEC Production Changes Impacted World Crude Oil Prices



Sources: History: EIA; Projections: Short-Term Energy Outlook, July 2000.



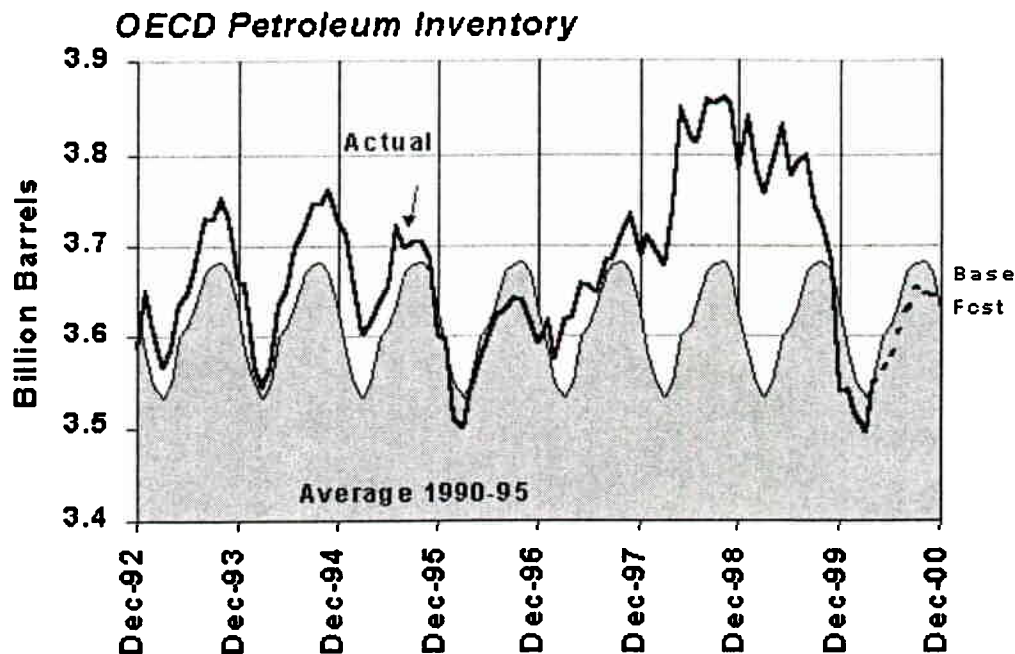
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Notes:

- OPEC has been a major factor behind the recent swing in crude oil prices.
- As prices fell in 1997 and 1998, OPEC gradually removed supply from the market. In total, OPEC targeted cutbacks of 4.3 million barrels per day representing about 6% of world supply.
- With the last cutback in March 1999, prices reversed and climbed rapidly. As they exceeded \$30 per barrel in 2000, OPEC began returning supply to the market.
 - This year, following OPEC's announcement in late March 2000 that production quotas would increase, prices fell in April. However, prices rebounded when the actual increase in OPEC oil production was insufficient to meet demand and rebuild inventories to normal levels.
 - This prompted OPEC into another quota increase which was announced in late June. But, when prices still did not fall, Saudi Arabia, on July 3, announced its intention to increase production even further.
- Production levels for all of OPEC (including Iraq) are assumed to rise about 2.6 million barrels per day from the first quarter to the fourth quarter this year.
 - The EIA base case assumes OPEC-10 production (excluding Iraq) will increase about 1.9 million barrels per day from first to fourth quarter, putting them over 0.8 million barrels per day above their new quota by the end of 2000.

- This additional OPEC supply combined with non-OPEC production increases should put downward pressure on prices.

High Crude Prices Go With Low Inventories

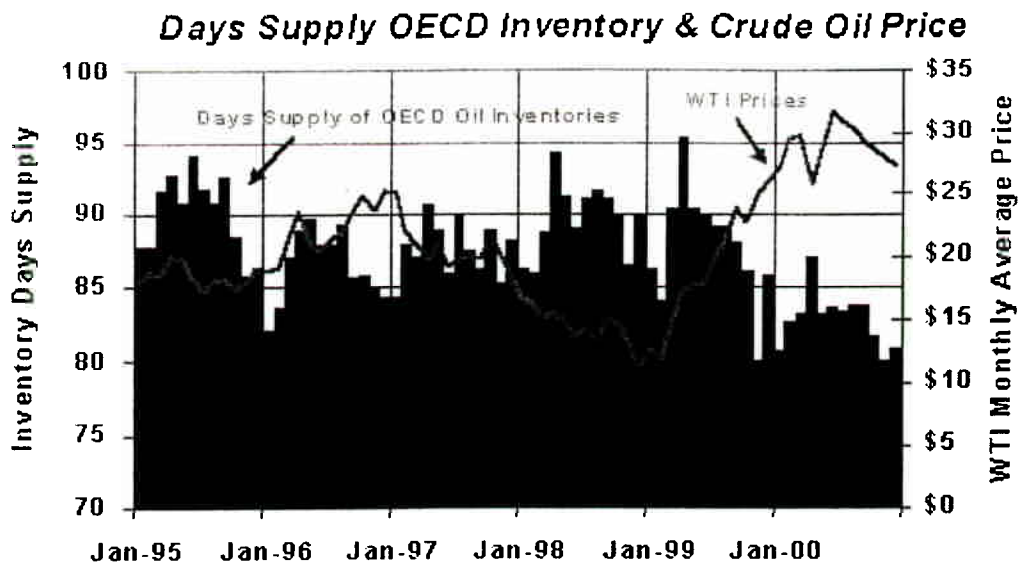


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Notes:

- As global production changed relative to demand, the world moved from a period of “over supply” in 1998 to one of “under supply” in 1999 and 2000. Inventories are a good means of seeing the imbalance between petroleum production and demand. For example, when production exceeds demand, inventories rise. A large oversupply will put downward pressure on prices, while undersupply will cause prices to rise.
- OECD inventories illustrate the changes in the world balance. OECD inventories rose to very high levels during 1997 and 1998 when production exceeded demand and prices plummeted to almost \$10 in December 1998. However, when inventories fell to the low levels seen above during 1999 and early 2000 as demand exceeded production, prices rose to \$34 per barrel. .
- EIA’s base case shows OECD inventories recovering and approaching seasonal levels seen in the first half of the 1990’s as a result of increases in OPEC production. But because demand has grown since the first half of the last decade, this volume of inventories leaves less cushion in terms of days of supply than we had 5 years ago.

December 2000 Relatively High Prices Reflect Low Stock Coverage

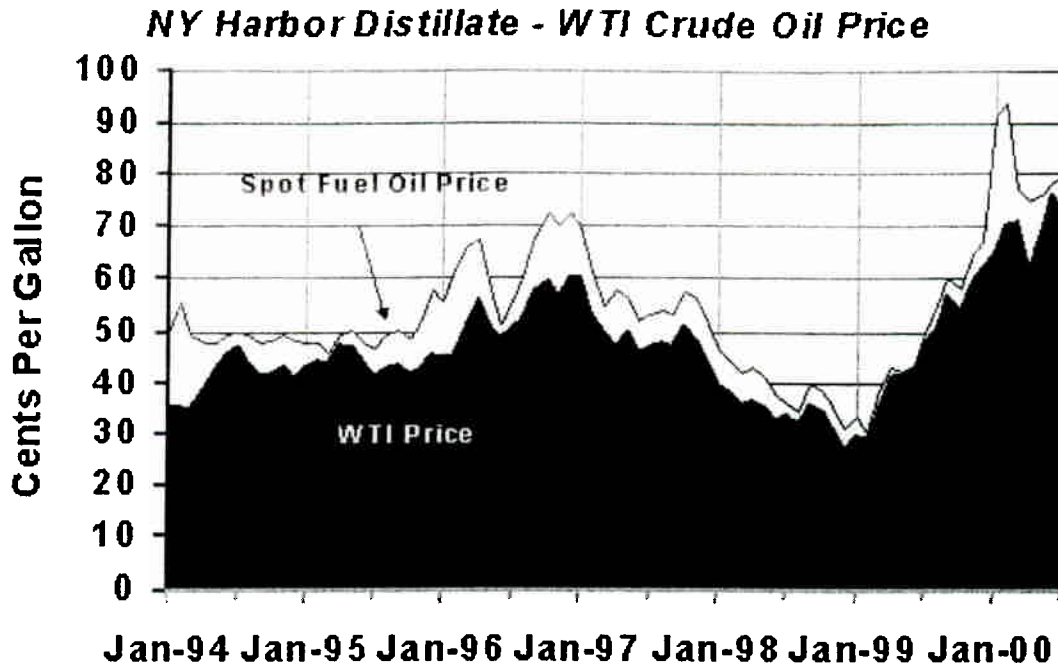


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Notes:

- This chart illustrates how low stocks are on a forward-cover or days supply basis.
- At year-end 2000, stock coverage on a days supply basis is expected to remain low, despite absolute volumes returning to levels seen during the first half of the 1990's. This is why EIA does not expect prices to drop below \$25 before year end, under the circumstances just described.

Distillate Supply/Demand Balance Reflected in Spreads



Source: DRI Platt's Spot Prices

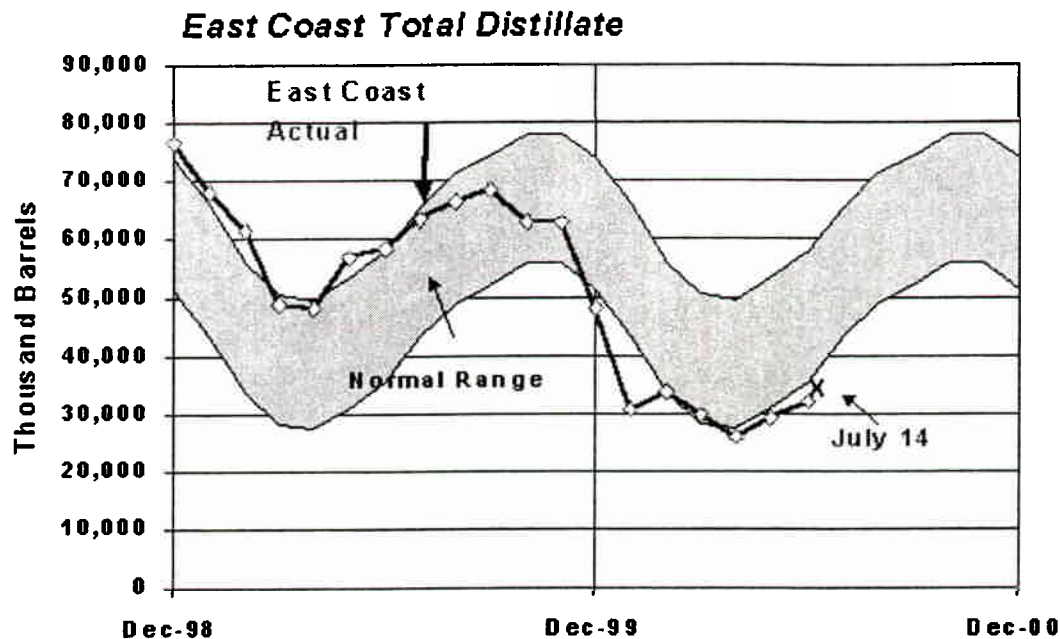


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Notes:

- While crude oil prices will be a major factor impacting distillate prices this winter if no supply disruptions occur, another important factor is the U.S. distillate supply/demand balance, as measured by distillate stocks.
- The distillate supply/demand balance influences the spread between spot distillate and spot crude oil prices. For example, with higher than normal stocks, the spread will be lower than usual. This spread is the price incentive that encourages or discourages changes in supply.
- While high stocks in the distillate market are good news for consumers, an excess is bad news for refiners.
- Distillate spreads during the winter of 1998-99 and throughout most of 1999 were well below average. From time to time, distillate prices on the Gulf Coast dropped below WTI prices. Distillate stocks happened to be very high on top of warm weather keeping demand down.
- Last winter (1999-00) began with high stocks and low distillate margins (4 cents below average in September). Margins stayed fairly weak until the price spike in January.
- In June of this year, distillate margins were weak at 2.5 cents per gallon as a result of crude oil prices increasing, but by July they had strengthened to 6.5 cents per gallon, which implies stocks are not high.

While Gasoline Has the Limelight, Distillate Is Being Watched

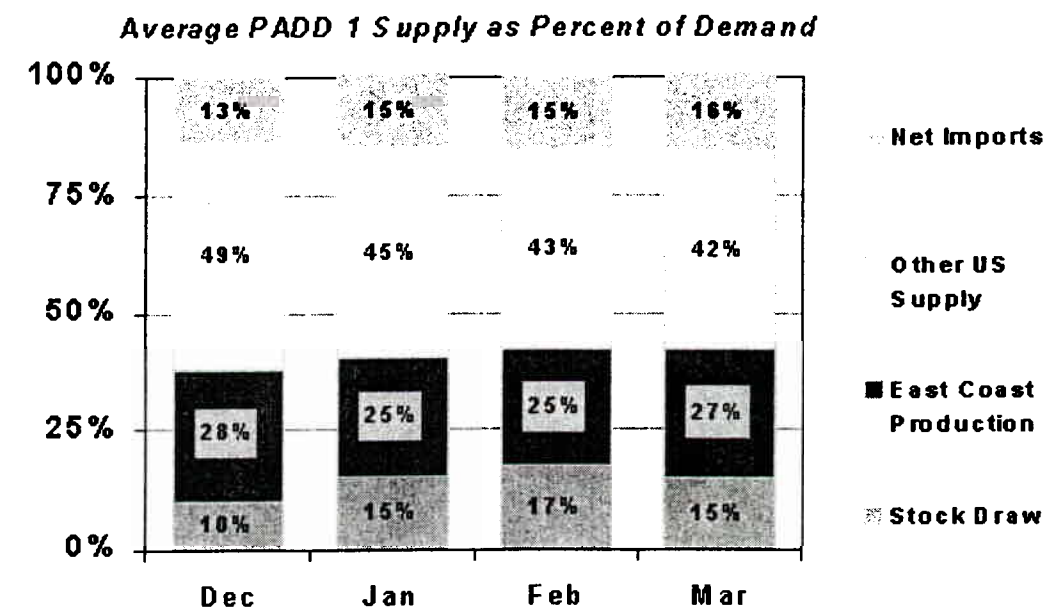


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Notes:

- As you might have deduced from the discussion on generally low petroleum stocks, distillate stocks are low.
- Stocks had been dropping since August 1999 as world petroleum inventories were declining. Still, at the end of November they were well within the normal band. But in December, stocks dropped below the normal band and have not fully recovered.
- As the normal stock band shows, we typically build distillate stocks during the summer for use during the winter.
- Refiners are now focusing on gasoline production, and with relatively low gasoline inventories, it is unlikely refinery yields will be tilted to distillate fuel oil versus the normal pattern during the summer gasoline season. If stocks follow their normal build pattern, we would begin the winter with below average stock levels.
- As was just evidenced in the gasoline market, below average stock levels translate to increased potential for price volatility.

Distillate Stocks Are Important Part of Northeast Winter Supply



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Notes:

- Why do stocks matter in the Northeast? They are the nearest source of supply when anything unexpected occurs, and they supply a significant portion of demand during the peak heating season.
- Stocks are normally an important part of PADD 1 winter distillate supply. Over the last 10 years, they provided about 15% of supply during the peak winter months of January and February. One of the biggest stock draws we have seen was in January 1994, when a prolonged severe cold spell required 666 MB/D of stocks, covering almost 36% of demand for that month.
 - On average, stocks supply the East Coast with about 260 MB/D on average in January and 280 MB/D in February. Those supplies represent draws of about 8 million barrels in one month.
- PADD 1 refineries meet about 25% of demand during January and February, and other PADDs -- mostly PADD 3 -- supply 40-50% of the region's needs.
- Imports generally supply about as much as stocks during the peak months, with most of the product coming from Canada, the Virgin Islands and Venezuela. During the peak months, product from more distant sources also helps to supply the region.
- Thus, about 60% of the East Coast's supply comes from distant sources, which adds time to

resupply.

Weather Affects Winter Heating Oil Demand (Oct - Mar)

Winter	Pct Difference from Average		PADD 1 Heating Oil Demand (Thous Bbl/D)	Demand as Pct of 96-97
	New England	Mid Atlantic		
95-96	2.6% Colder	4.9% Colder	836	+11%
96-97	3.4% Warmer	4.2% Warmer	751	0%
97-98	7.8% Warmer	11.3% Warmer	683	-9%
98-99	8.3% Warmer	8.4% Warmer	673	-10%
99-00	8.5% Warmer	9.6% Warmer	652	-13%

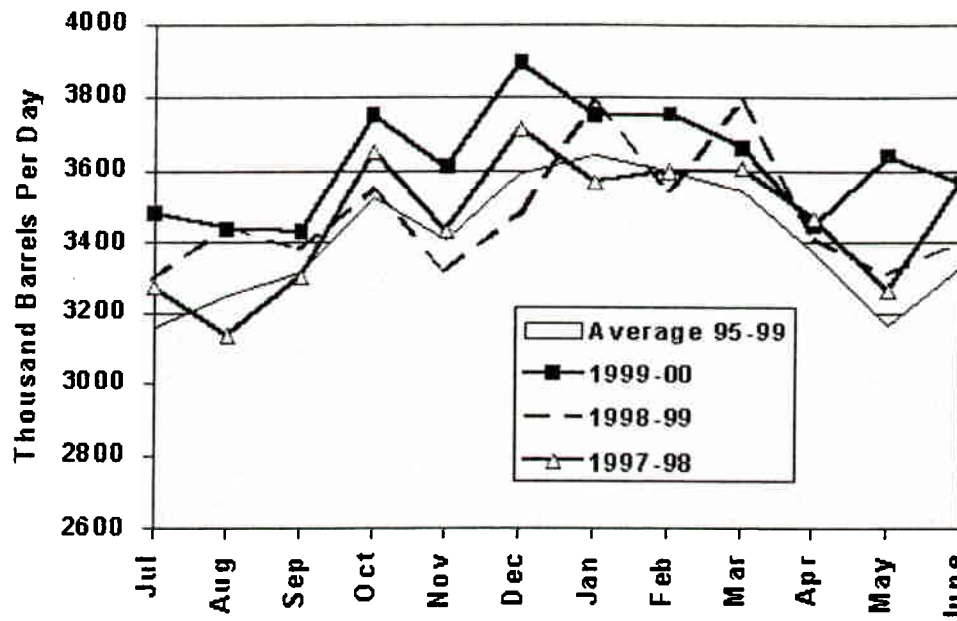


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Notes:

- To understand where stocks might go in the future, we must understand the demand and supply factors that affect stock levels.
- First consider demand. While demand for diesel fuel is influenced by the economy in the short run, demand for heating oil is strongly influenced by weather. Demand for heating oil averages about 20% of total distillate fuel demand. But in the winter it can represent well over 30%.
- This table shows winter weather and heating oil demand in the Northeast, which represented almost 60% of U.S. heating oil demand in 1999. During the winter months, the Northeast can top 70% of US heating oil demand.
- We have experienced four warm winters in a row in the Northeast. This has depressed demand over the winter months of October through March compared to "normal" or average winter weather.
- The winter of 1996-97 was closer to an average winter than the others, and EIA's prime supplier data indicates that PADD 1 demand for No. 2 fuel oil was 9-13% less during the last three warm winters compared to winter 1996-97.
- Clearly demand for this coming winter will be higher if the weather is closer to normal.

Distillate Demand Strong in December 1999

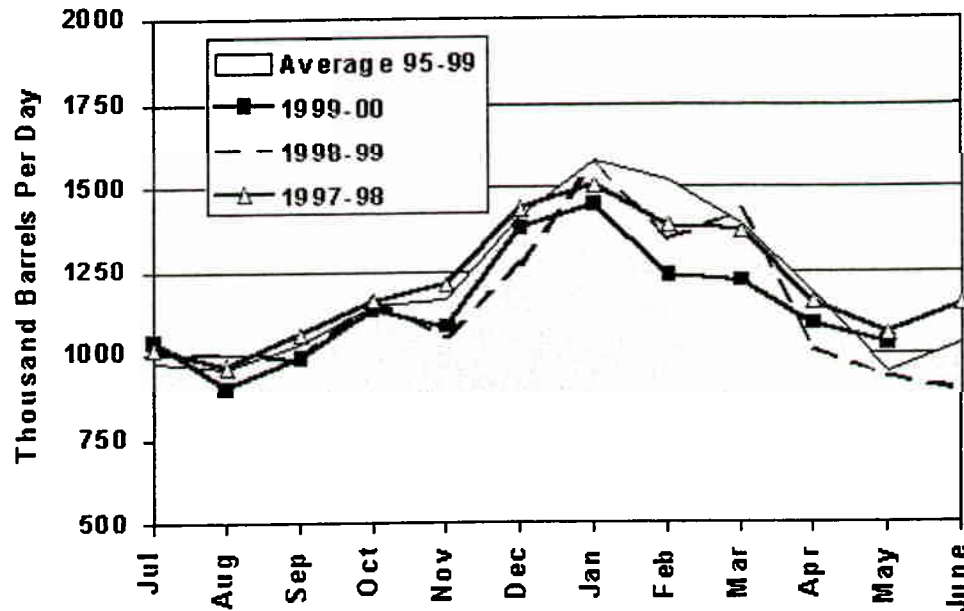


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Notes:

- Total distillate demand includes both diesel and heating oil. These are similar products. Physically, diesel can be used in the heating oil market, but low sulfur requirements keep heating oil from being used in the on-road transportation sector.
- Looking at demand in some detail, we can see demand last year grew over prior years. U.S. distillate demand during the last winter (1999-00) was more than 4% higher than in the prior year, due mainly to diesel demand growth, since warm weather kept heating oil demand from growing.
- Total distillate demand peaks in the winter due to heating oil demand increases. While the average peak is in January, this past winter and two years ago, the peak was in December.
- Last December, when stocks dropped below the normal band, demand was almost 12% stronger than the prior year, although U.S. temperatures were only 6% colder. The Northeast, however, was 11% colder, and this region would affect heating oil demand more strongly than U.S. temperatures.
- Still, December demand seemed stronger than the weather would have indicated. Some of this strength may have come from Y2K activities. For example, anecdotal evidence indicates some utilities removed themselves from the natural gas system and used distillate during the year turnover to assure uninterrupted electricity supply.

U.S. High Sulfur Distillate Demand

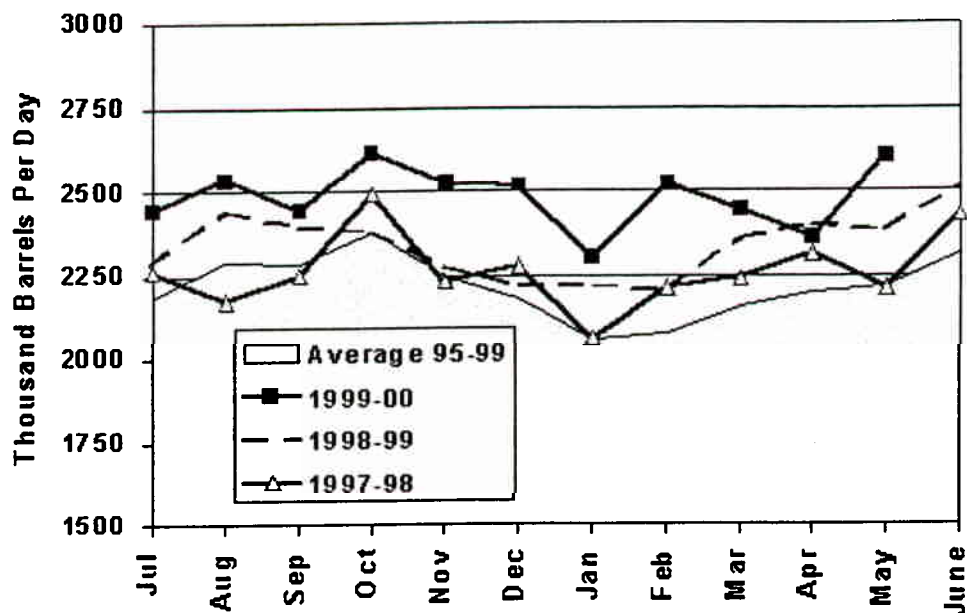


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Notes:

- High sulfur distillate demand is used for heating oil, as well as electric peaking unit fuel and in some applications in industrial and commercial facilities. It reflects the strong seasonal pattern of heating oil -- increasing about 50% during the winter over the summer.
- The chart also illustrates the lack of growth in this fuel over the past few warm winters.

U.S. Low Sulfur Distillate Demand

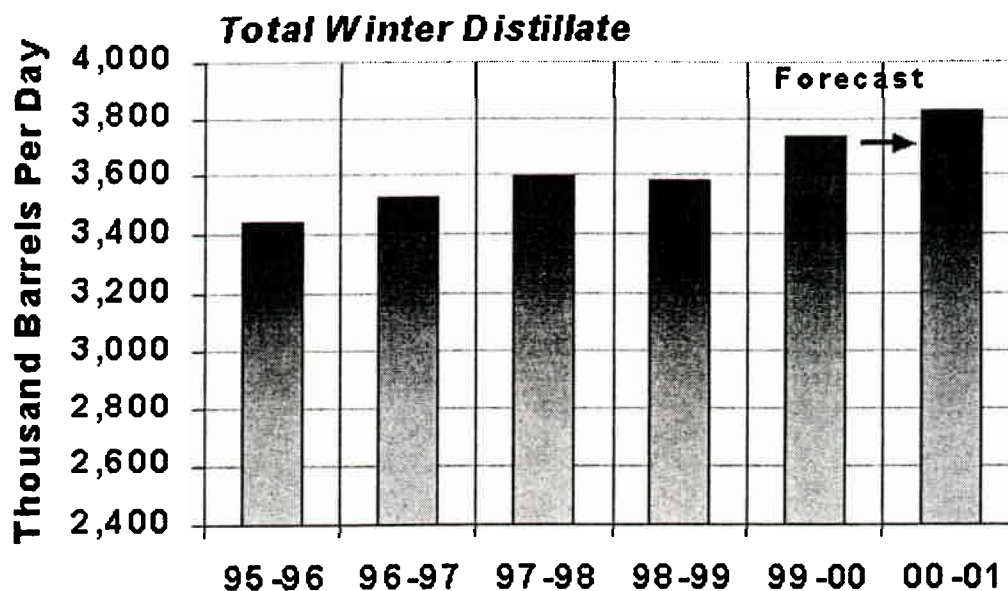


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Notes:

- Low sulfur distillate can be used in any distillate application. It includes diesel used in transportation.
- Low sulfur distillate does not exhibit the strong seasonal pattern of the high distillate market, and shows the strong growth in diesel fuel use over the past couple of years.

U.S. Winter Distillate Demand Expected to Increase

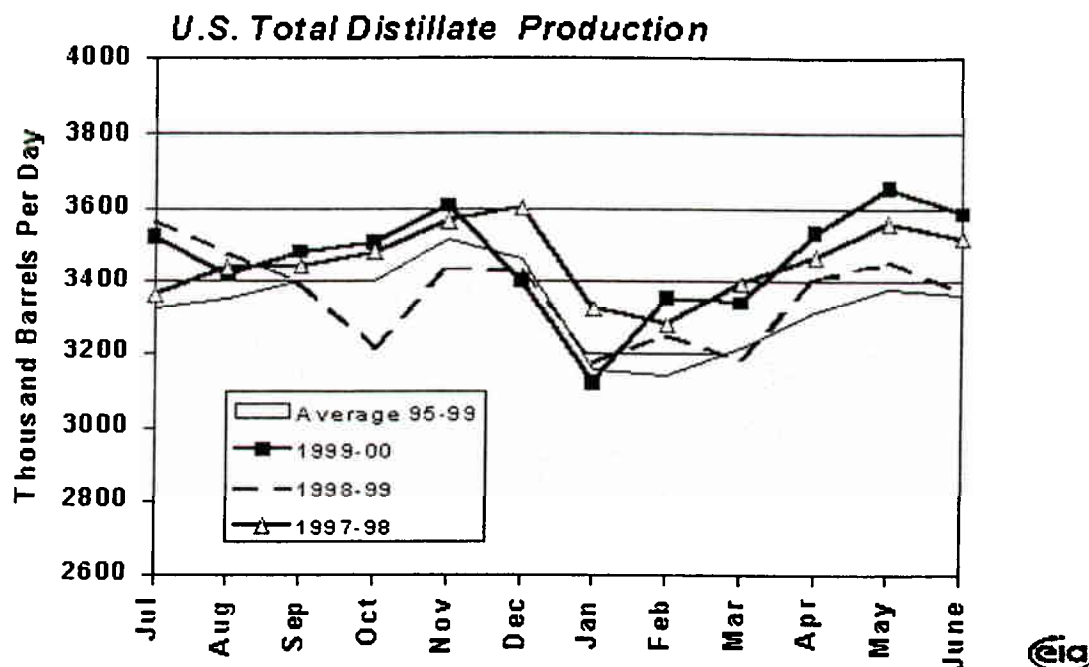


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Notes:

- Demand is expected to increase 2% this winter over last. The forecast assumes normal winter weather, which would be 11% colder than we experienced last winter. However the Northeast would only be 7% colder than last winter. Demand growth is expected to be held in check in spite of the colder weather as a result of the economy slowing and higher prices dampening diesel and some other demand.
- This forecast is highly uncertain. It depends on weather, the economy, and the natural gas market. Both heating oil and diesel demand could be stronger than currently shown due to factors such as:
 - high natural gas prices causing more large customers to switch to distillate fuel;
 - a stronger economy and stronger diesel demand than expected, as well as
 - weather uncertainties. Should we have a fourth warmer-than-normal winter, the weather would moderate both natural gas switching into distillate as well as heating oil demand.

Dec 1999 & Jan 2000 Production Fell, But Rebounded with Price

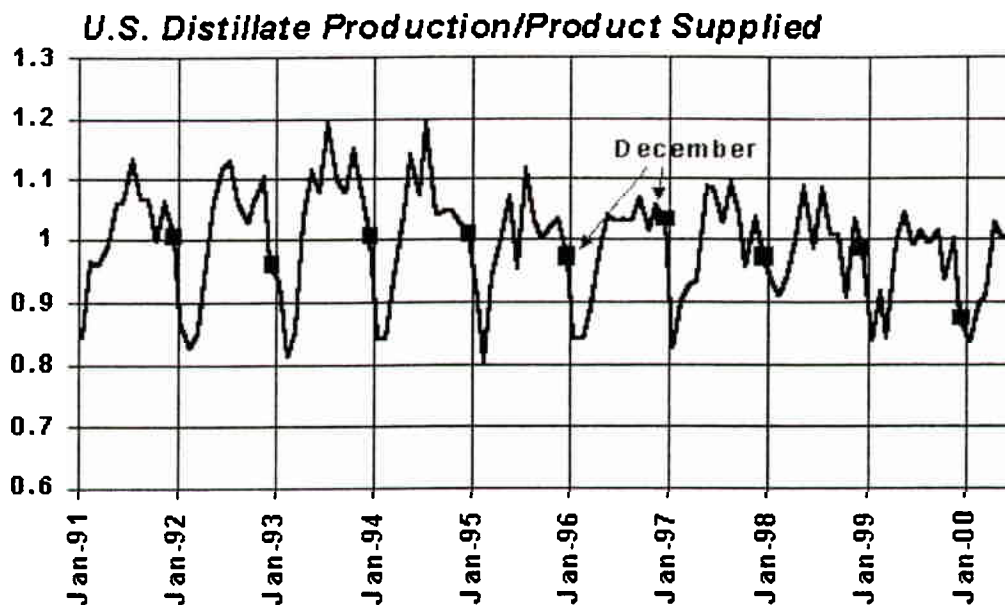


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Notes:

- Production will also impact stocks this winter.
- Last winter, production was cut back in December, which, when combined with the strong increase in demand, resulted in the large strong stock draw. But this did not diminish the typical production decline that occurred in January, leaving stocks precariously low.
 - As December began, margins were low, and November weather had been 16% warmer than the prior year.
 - Stocks were in the normal range, and companies were still smarting from the extremely low margins of the prior winter.
 - Refiners reduced production to the prior year's levels as a result.
- When the cold spell hit the Northeast and caused prices to spike at the end of January, production rebounded in response. However, increased imports were the main source in supply increases following the price spike.

Production/Demand Ratio Low In December 1999

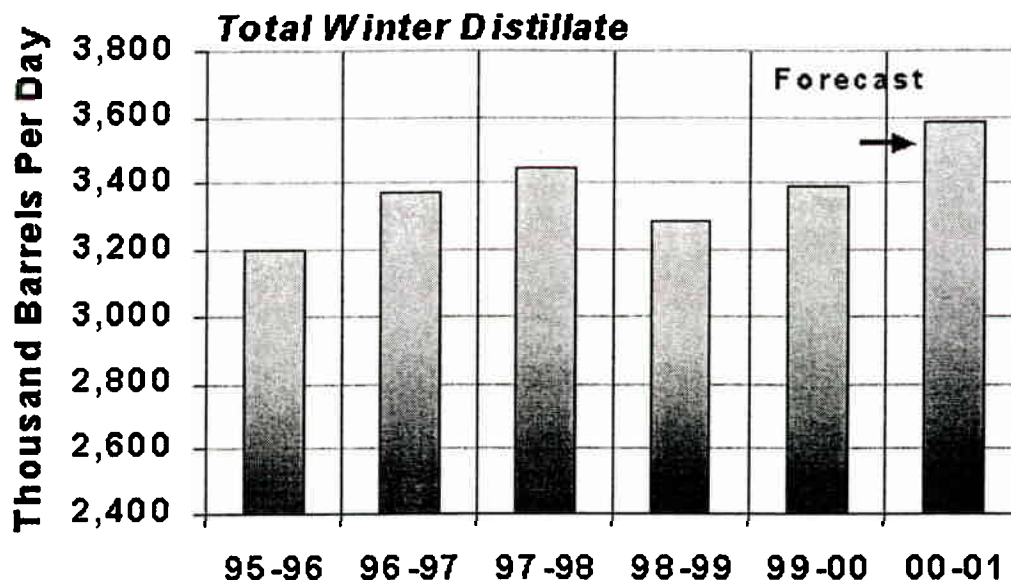


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Notes:

- Recall that stocks fell below the normal band in December last year. Both a strong increase in demand and a production decline contributed to the draw.
- This chart provides a way of combining the two factors to show their impact relative to history. The ratio of production to demand indicates roughly when we are seeing stock builds versus stock draws. (Net imports will also impact stock changes.) For example, when the ratio is less than 1, stocks would probably be falling.
- The ratio was very low last December.

U.S. Winter Distillate Production Expected to Increase

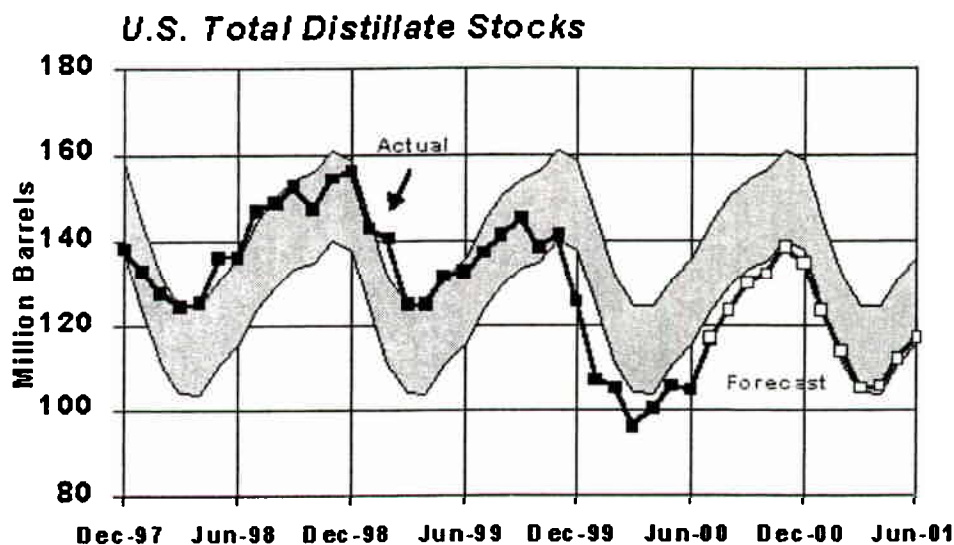


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Notes:

- Production is projected to increase 194 MB/D or 6% this winter.
- Distillate production can be increased by increasing crude oil inputs to refineries -- which increases all product production -- or by increasing distillate yields, which results in a switch in volumes between products. A higher distillate yield means higher distillate production but lower gasoline and/or jet fuel production.
- The forecast production is increasing mainly as the result of increased crude oil throughputs of about 740 MB/D with yields holding at about last winter's levels.
- Crude inputs as a percent of operable capacity during the fall distillate build September through November are forecast to be high, at about the same levels seen in 1997. Thus, any further increases in distillate production would likely come from increases in yields.
- Net imports are forecast to be similar to last winter's levels.

Distillate Stocks Expected to Remain Low



Sources: History: EIA; Projections: Short-Term Energy Outlook, July 2000.



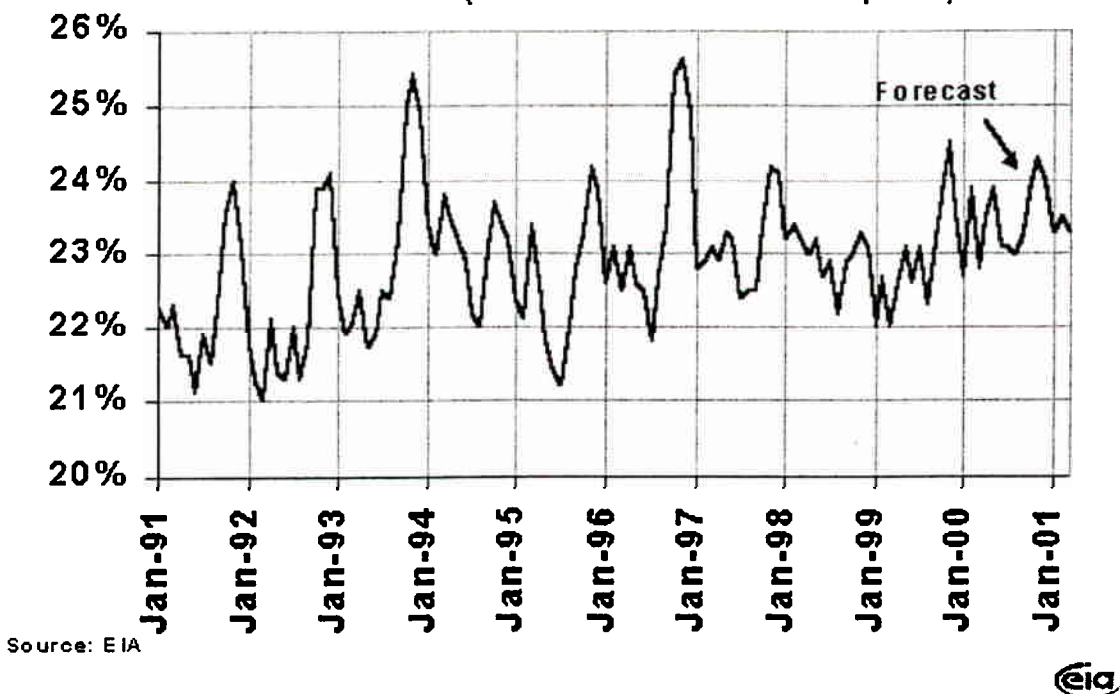
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Notes:

- When EIA's demand forecast is combined with its outlook for production and net imports, distillate stocks are projected to remain low for the rest of the year.
 - The June 30 distillate fuel stock level is nearly 22% less than last year and the lowest end-June level since the late 1980s/early 1990s.
- It is unlikely refinery yields will be tilted to distillate fuel oil versus the normal pattern before the gasoline season is finished.
- Over the last 10 years, the average stock build from the end of June through end of November has been about 25 million barrels. We are forecasting about a 34 million barrel build, but even that does not get us into the normal band. The good news is that the ending December stock levels are projected to be higher than last December's inventory levels.
- Still, as was just evidenced in the gasoline market, below average stock levels translate to increased potential for price volatility.

More Supply Possible This Fall than Forecast

Distillate Yields (Production/Crude Inputs)

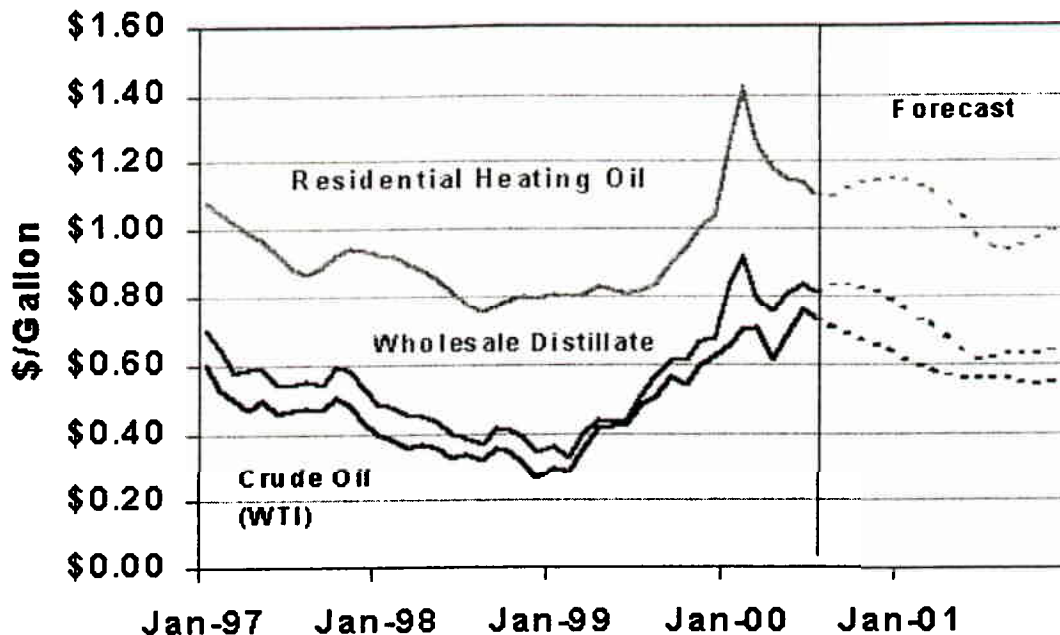


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Notes:

- Yet, if economic incentives evolve for refiners to produce more distillate during the fall than shown, the capability exists to respond through increased yields.
- This graph shows the distillate yield pattern over the 1990's. Generally yields rise in the fall to build stocks for winter distillate use. On average, the yield increase during the fourth quarter is about 2% higher than the yield average of the lowest yield months of June, July and August. (Recognize that a 1% change in yield is about a 150 MB/D change in distillate production.)
- During the fall of 1996, the winter season began with very low stocks, but refiners pushed yields to very high levels to regain some of the lost ground.
- During the winter of 1998-99, we saw a production decline of about 160 MB/D, as refiners began the season with very high stocks and they did not want to build them further. The production reduction was due mainly to yield reduction.
- As shown on this chart, yields are projected to remain at about the same levels as seen last fall during the stock building cycle. Thus, if more production is needed, increases in yields can produce yet more distillate.

Winter Crude Oil and Distillate Price Outlook



Source: History EIA, Forecast July 2000 EIA Short Term Energy Outlook



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Notes:

- The low stock forecast adds some extra pressure to wholesale margins, but crude price is the major factor holding prices up this winter.
- The current EIA forecast shows residential prices peaking at \$1.15 and averaging \$1.14 this winter. The average retail price is about the same as last winter, but last winter included the price spike in January and February. In the Northeast, some consumers paid over \$2.00 per gallon during the spike.
- Underlying crude oil prices are not expected to change much from this year to last. WTI averaged about \$26.70 last winter, and is currently forecast to be roughly the same price this winter.
- While a brief cold snap was a factor behind last year's price spike, the winter as a whole was almost 9% warmer than normal in the Northeast. If we have a normal winter this year, consumers will be buying more heating oil than last year.
- What is not shown is, if stocks remain low throughout the winter, supply disruptions or unexpected demand surges from cold weather could trigger another price spike similar to that seen last winter.

Natural Gas Outlook

- **Natural Gas Inventories**
- **Natural Gas Prices**

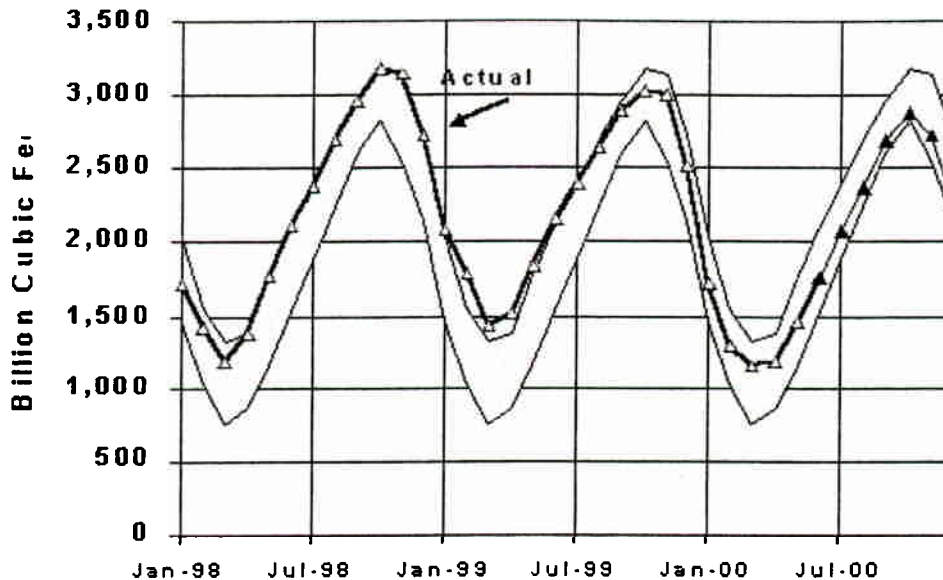


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Notes:

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- The next slides give a quick overview of the natural gas outlook.

Natural Gas Stocks Expected to Remain Low



NOTE: Colored Bands are Normal Stock Ranges

Sources: History: EIA; Projections: Short-Term Energy Outlook, July 2000.

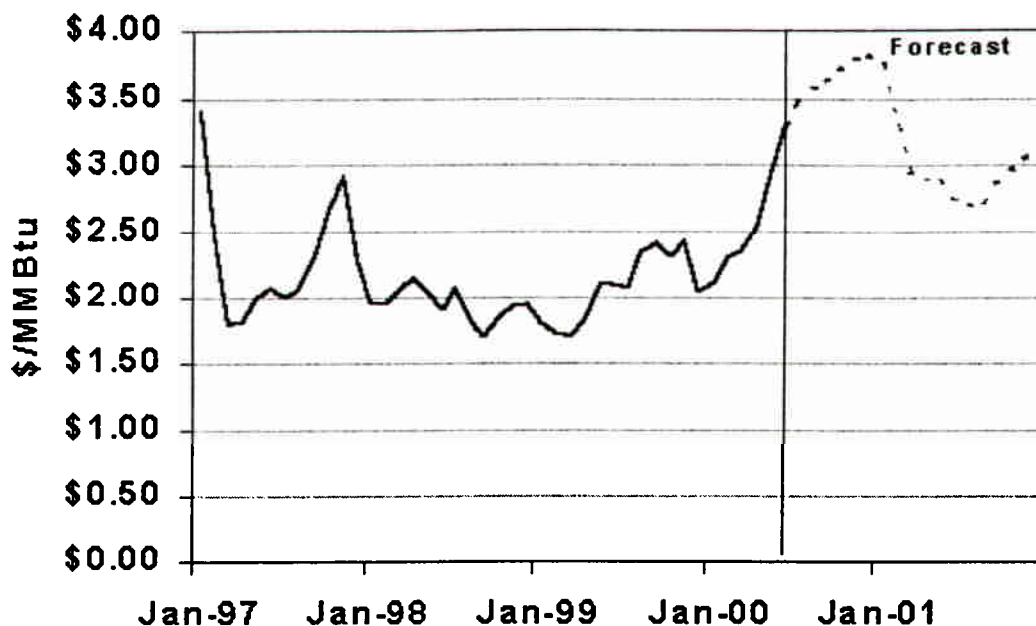


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Notes:

- Natural gas also is not heading for a good supply situation at the start of winter.
- **Natural gas working storage levels are lower than in recent years. Low injection rates in the first 3 months of the refill season, which begins in March, were low and resulted in a stock level 8 percent below the 5-year average. However, net injections in the first 2 weeks of July were 24 percent above average, as moderate weather slowed demand.**
- Natural gas inventories are expected to remain at the bottom of the normal range for the remainder of the year, unless we have unusually moderate weather through the rest of the build cycle.
- Stock growth has been slow because adjustments in domestic production seem to be lagging behind a recent rise in demand.
- Expanding gas consumption potential may have been obscured in recent years by warm weather, record electricity output from hydro and nuclear facilities, and low petroleum prices. Last year, consumption only rose by 0.5 percent.
- Gas production hit a relative peak of 18.9 TCF in 1997, and has declined slightly to 18.7 by 1999. Production to date in 2000 is about the same as last year. Aggregate production from the major producing states of TX, LA, OK, NM, KS, and AL has declined slightly in recent years, and has not been fully offset by increases from other regions.

Natural Gas Wellhead Prices



Source: History EIA, Forecast July 2000 EIA Short Term Energy Outlook



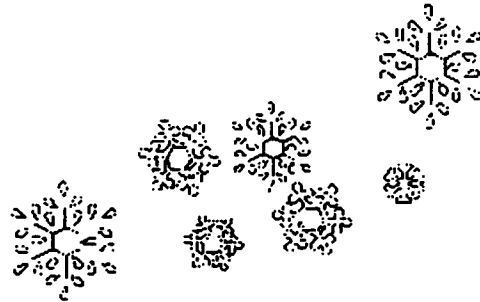
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Notes:

- Natural gas prices surged as summer began. While increasing crude oil prices may have helped to move natural gas prices higher through March and April, the latest May surge seems to have come from a confluence of factors raising concerns over the ability of supply to meet the peak summer demand days this year. The concerns center on:
 - A hot summer being expected this year;
 - A larger share of power generation using natural gas -- especially with the addition of some new merchant power plants expected to be in service this June;
 - A possible interruption to supply from the hurricane season;
 - Overall demand growth eating into excess deliverability;
 - Natural gas inventories lower than last year, and, while not at record absolute lows, providing less coverage as measured in days of supply.
- Ironically, an important alternative fuel for the electric generating companies is distillate fuel oil. If natural gas prices remain high, utilities could use more distillate this summer, hindering a buildup of heating oil stocks for the winter. Furthermore, with strong prices this winter, fuel switching from natural gas to distillate could become attractive in some regions, putting more pressure on distillate prices.
- EIA currently expects natural gas prices to remain high through the winter. Residential prices could average \$8.00 per MCF versus \$6.71 last winter. With colder weather, consumers will be using more fuel as well as higher priced fuel.

Conclusion

- **Distillate stocks may be low going into winter**
- **Prices likely to average as high as last winter even without volatility**
- **Natural gas in storage could be low this winter – which also impacts distillate**
- **Natural gas prices likely to be much higher this winter on average**



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Notes:

-
- In conclusion – The U.S. may be starting winter with low stocks in all the heating fuel sectors.
 - Low stocks translate to an increased potential for price volatility.