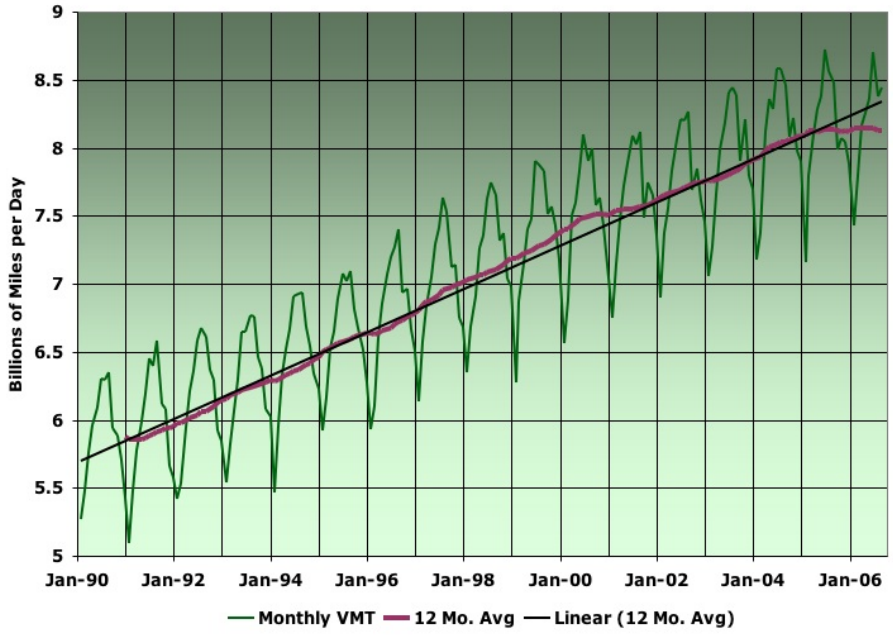
The Oil Drum
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

Update on US adaptation to higher oil prices

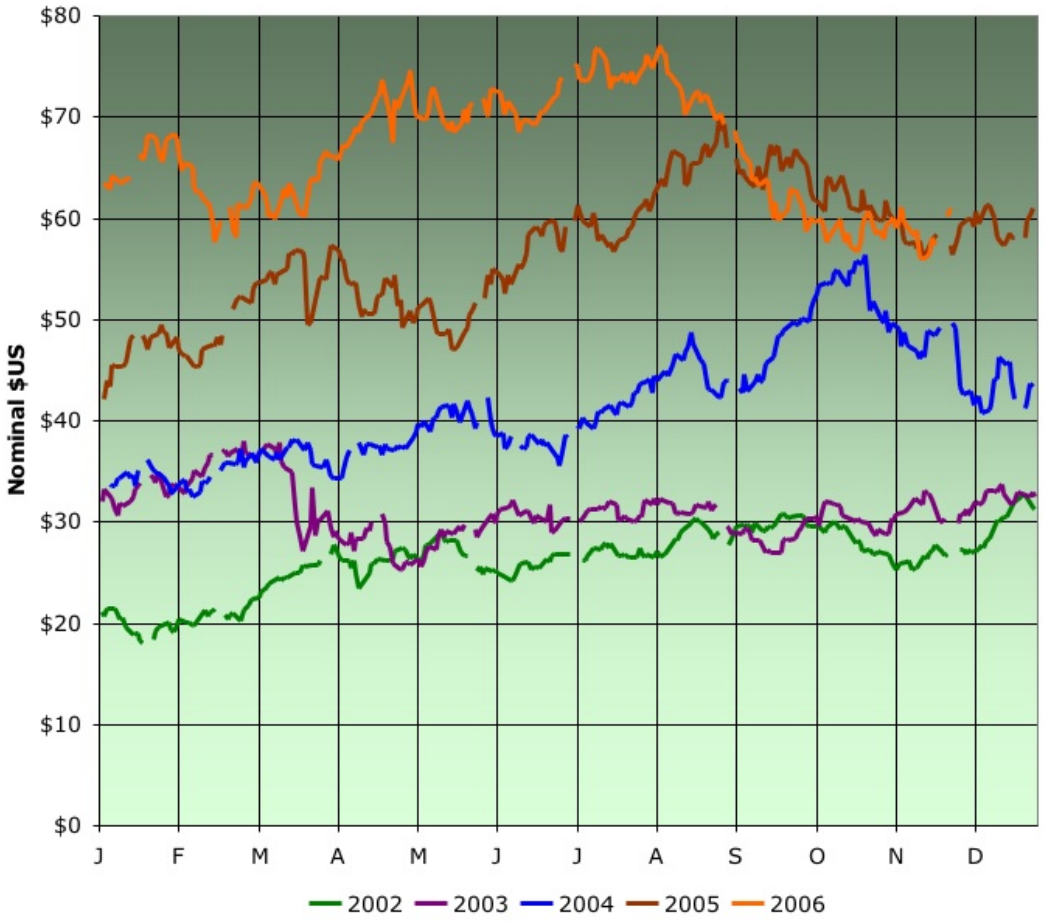
Posted by Stuart Staniford on December 8, 2006 - 12:17pm
Topic: Demand/Consumption
Tags: peak oil, vmt [list all tags]



Monthly vehicle miles traveled in the United States, Jan 1990 - Aug 2006, together with a twelve month trailing average and a linear fit to the average. Graph is not zero scaled to better show changes. Click to enlarge. Source: FHWA Travel Volume Trends.

After my update on the global supply situation the other day, I also wanted to catch up with another of my favorite topics: how US drivers are responding to the flattening of global oil supply (something I last looked at here).

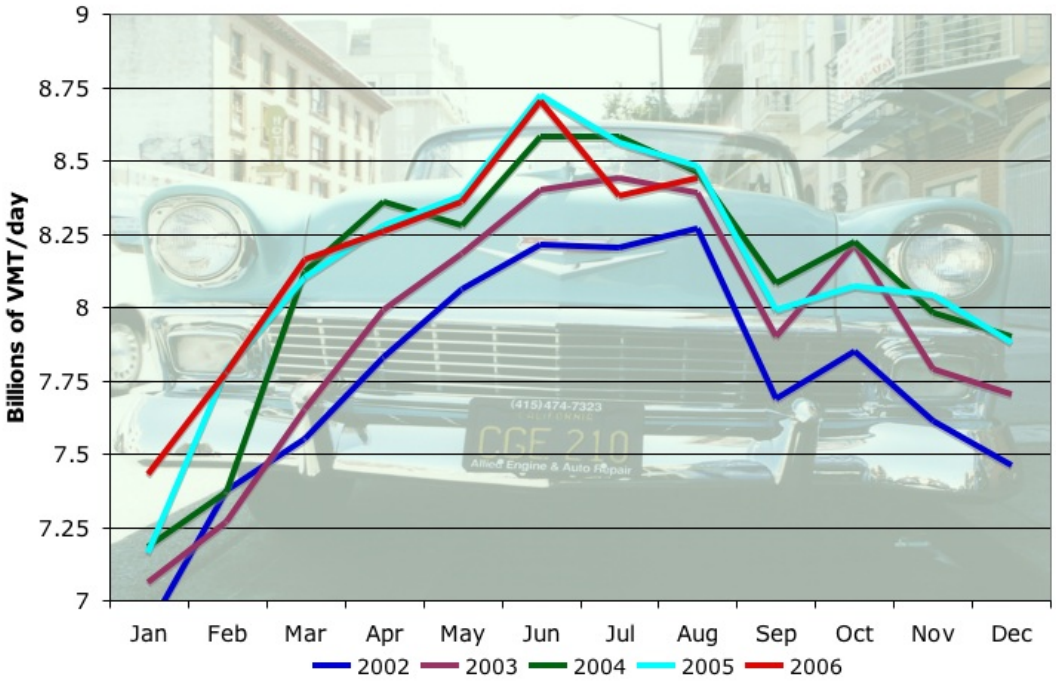
We now have VMT (vehicle miles traveled) data through August, and that allows us to see what happened during the summer when oil (and thus gasoline) prices were very high. For context, here's the price history:



Daily West Texas Intermediate spot prices, Jan 2002-November 2006. Click to enlarge. Source: EIA.

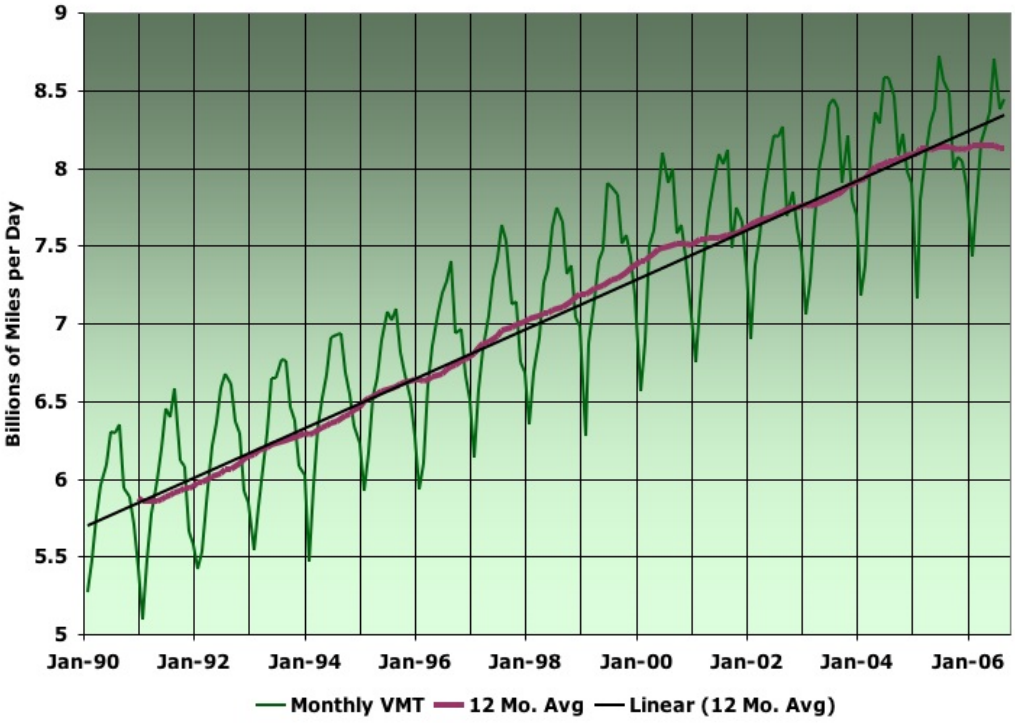
(As an aside, it appears to me that in the last three years, as the market has got tighter and tighter, it has developed an interesting seasonal structure where there is a spring run-up in price, and then a larger summer run-up in price, and then an autumn price drop. However, these features are getting earlier and earlier, and larger and larger, each year. I think the drop in price in September/October fits this narrative, and I expect prices will start to run up again late this year or early next year (though probably not too much higher than they got this year, absent worsened geopolitical problems).

So if we look at what drivers did in response to these prices:



Monthly vehicle miles traveled in the United States, Jan 2002 - Aug 2006. Graph is not zero scaled to better show changes. Click to enlarge. Source: FHWA Travel Volume Trends.

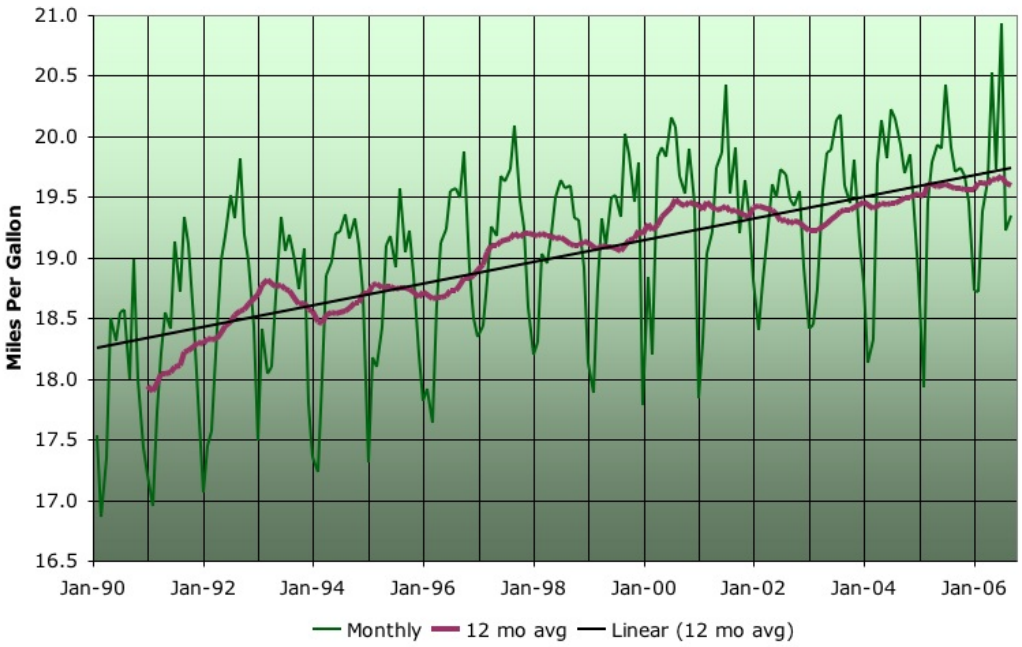
We find that the extra high prices of summer 2006 were enough to cause a slight drop in VMT (against the traditional few percent/year rise and the general flattening of the last couple of years). Looking at the same thing a different way, the following graph shows a longer history of monthly VMT data together with a 12 month trailing average (which erases the seasonal signal), and a linear fit to the latter.



Monthly vehicle miles traveled in the United States, Jan 1990 - Aug 2006, together with a twelve month trailing average and a linear fit to the average. Graph is not zero scaled to better show changes. Click to enlarge. Source: FHWA Travel Volume Trends.

As you can see, US VMT generally rises fairly relentlessly, but the high prices of the last couple of years have been enough to stem the tide, and indeed now cause it to just begin to drop slightly (though it might flutter up again now that prices have eased somewhat).

Last time I discussed this, I developed a method for estimating the fuel economy of the deployed US vehicle fleet (basically by dividing monthly gasoline consumption in the US by monthly VMT with an approximate correction for diesel powered miles). An update on that picture looks as follows:



Estimated deployed gasoline fleet fuel economy by month in the United States, Jan 1990 - Aug 2006, together with a twelve month trailing average and a linear fit to the average. Graph is not zero scaled to better show changes. Click to enlarge. Source: FHWA Travel Volume Trends for VMT, and EIA for motor gasoline supplied.

In general, the recent price rise has not caused anything noticeable to happen to the long-term very slow rise in fuel economy. Transportation adaptation to recent high oil prices appears to have come overwhelmingly from curtailment of VMT growth (so far).