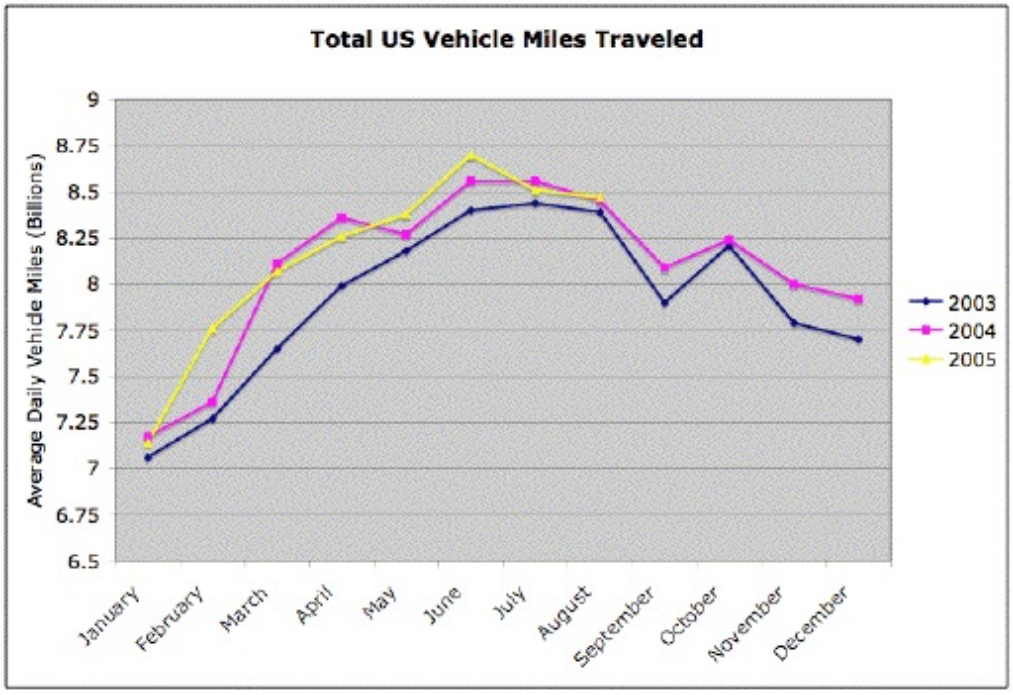
The Oil Drum
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

Miles Data Predicts Big Economic Slowdown

Posted by Stuart Staniford on October 24, 2005 - 8:22pm
Topic: Economics/Finance
Tags: gas prices, highway miles, hubbert peak, oil prices, peak oil, recession [list all tags]

Those wonderful bureaucrats over at the Federal Highway Administration publish monthly data! God bless their souls. Now we have a chance to see what the last few years of run-up in oil prices has wrought. The news is not good unfortunately - looks like the chances of a pretty significant economic slowdown or recession in the near future are quite high.



Source: August 2005 FHWA Traffic Volume Trends

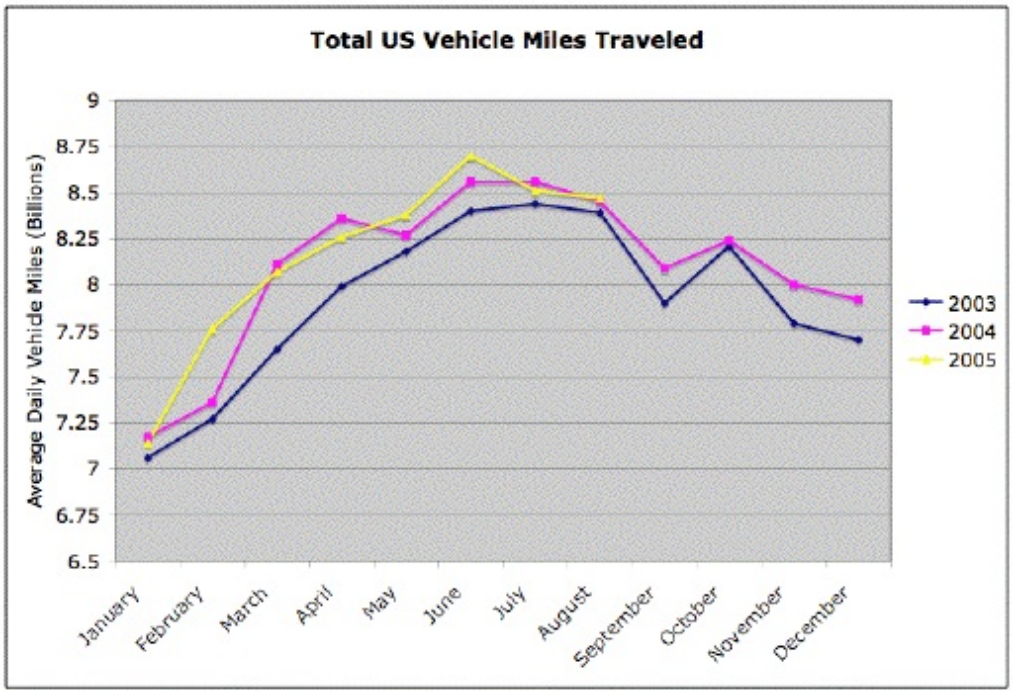
This post is part of a never-ending series on the economic response to oil shocks, which I'm doing to gain a deeper insight into likely post-oil-peak economic occurrences. Prior posts are listed at the bottom.

Let me first say a little bit more about how the Federal Highway Administration data is gathered. I read the executive summary of the FHWA Traffic Monitoring Guide that they put out to advise the states on how to do this. Basically, FHWA is getting data from all the states and compiling it. The data is based on roadway collection devices (the bumps in the road you drive over). A state will have a network of permanently installed data collectors on key highways and traffic points to give constant real-time data on traffic volumes, and then will have a program of mobile traffic collection points that cover all the less important roads. They then do some statistical

interpolation to figure out how the lesser roadways probably varied between measurements, based on what the permanent data collection points show. They try to cover all those lesser roadways with a measurement every few years. Thus even though some roadways are only surveyed occasionally, the fact that there's a permanent infrastructure of collection points should allow them to produce decent approximations to the right answer even on a short time scale.

Overall, it sounds pretty reasonable to me. They've been collecting this stuff since 1936, so they've had a little time to figure out how to do it. Obviously it's quite hard to assess how well all the individual states do. They have an incentive to cheat since some federal highway funds get allocated based on these numbers. I hold the view that corruption of government bureaucrats in OECD countries is exceptional rather than pervasive, so I would tend to trust that the data are by and large ok, despite that. Some of our more conspiratorial-minded commenters might draw a different conclusion. To some extent the proof of the pudding is in the eating; probably the best evidence for the data being accurate is that they show interesting credible responses to oil related events and a high correlation with GDP. It would seem impossible for that to be the outcome of a series of made-up numbers by corrupt state highway agencies.

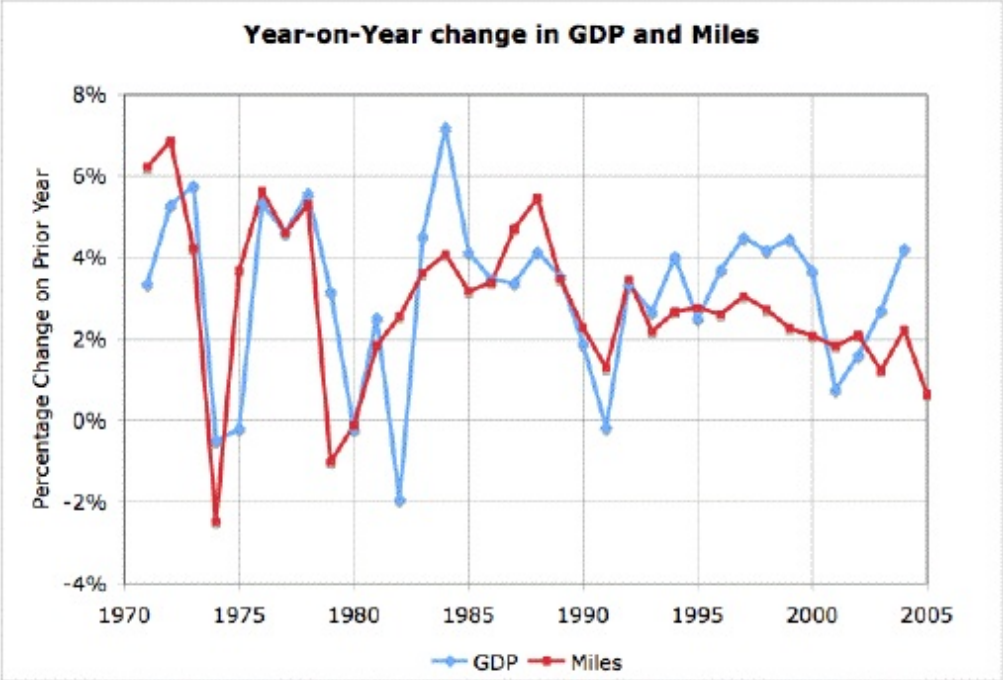
Anyway, after looking at the August 2005 FHWA Traffic Volume Trends (the most recent available), I made this plot of total vehicle miles for the last three years:



The y-axis is daily vehicle miles (in billions) averaged for the month in question on the x-axis (note that the graph is not zero-scaled, which I generally prefer, but here we are more interested in focussing in on the changes than observing the generall flattish trend). Obviously, the most striking thing about the data is that 2005 is struggling to get above 2004 (whereas 2004 is generally comfortably more than 2003).

To investigate that further, I took a look at the implications for the year-on-year percentage change graph of miles and GDP. I could compute total miles for 2004 by adding up the monthly totals (I verified that this procedure for 2003 produced the same answer as the previously known 2003 annual total to within negligible errors for the purposes of this graph). That let me create the 2004 change from 2003. Then I computed the difference between the total for the first eight months of 2005 and the first eight months of 2004 (which should correct for seasonal effects

pretty effectively), and added that change to the graph. We get:



Uh, oh! Look at that drop in growth rate from 2004 to 2005. There's never been a year in the past 35 years when that big a drop in the red line was not followed by a big drop in the blue line the same or the following year. This is particularly so when the blue line is as high above the red line as it is in 2004. Look at 1984-1985 for the closest precedent. So that suggests that the chances we'll drop to GDP growth at or around zero in the near future are excellent.

That's the bad news. I guess the good news is that since at least the spring of this year, gas prices have been having a visible effect in reduction of driving (and thus demand for oil). I speculate that serious efforts in switching of vehicle sales to more efficient vehicles started earlier than we realized too. Maybe that's why the car companies felt the need to put on a fire-sale over the summer.

There's a lot more to get out of this monthly data. There's all kind of interesting wiggles that must mean something (since the statistics are enormous here, even little wiggles should be caused by something or other). There's regional data, and state-by-state data too, so once September comes out we can start having a look at what Katrina and Rita actually did to driving around the country. This data is a goldmine.

Previous Posts in the Series

The earlier posts in the series considered the following subjects:

- A discussion of the stability of the mix of consumer spending
- Considering the productivity and efficiency of transportation
- What the US economy did to become less oil intensive
- Behavioral driving responses to oil shocks
- Whether the GDP/miles driven relationship is the same in Europe.
- Considering in much more detail the connections between US annual GDP and driving data.

Readers with long memories will also realize the significance of these issues to my decline-rate

based model of what might happen to the US economy post peak.