The Oil Drum: Europe
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

Countdown to $200 oil: $140 oil and speculation

Posted by Jerome a Paris on June 30, 2008 - 9:55am in The Oil Drum: Europe
Topic: Economics/Finance
Tags: $100 oil, $200 oil, original, speculation [list all tags]

As you may have heard, oil prices have reached a new high above $140. I can already hear the outcry against speculators and their out-of-control games to enrich themselves at our expense.

Never mind that speculators have been caught shortselling oil (ie betting on a fall in prices) more than a few times in recent months. Never mind that spot oil prices, which require actual physical deliveries of oil at the end of each month, have behaved the same way as paper futures. Never mind that oil storage seems to not be increasing.

Nope, it is just too convenient, too irresistible and, let's say it, too comfortable an excuse that speculators are to blame. It's not our fault, we have our scapegoat. Our price increases are temporary, we'll soon be back to "normal" lower prices, as soon as (take your pick) speculators have been punished/oil companies are taxed for their profiteering/"fundamentals" are left to set prices.

This is just denial.

There are A LOT of good reasons why oil prices are going up. Let me show you just a few.

A Countdown to $200 oil diary

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1) **The George W. Bush War Risk Premium**

One you've probably heard by now is the "risk premium", linked to the prospect of a war with Iran. Let me explain how that works.

Say that the market price for oil, if there were no prospect of war with Iran whatsoever, were $100 per barrel.
Say that the market price for oil, should there be an attack on Iran, is estimated at $400/bl (because of production disruption in Iran itself, possibly a blockade of the Straits of Hormuz, etc...)
Say that the probability of such an attack is estimated, by markets, at 10% this year.
In that case, the price for oil will be 90%x100+10%x400 = 130$

A 10% probability of war with Iran which would tentatively quadruple oil prices increases the market price by 30%. Now you may quibble with the estimates I've provided here - but the point is, the market will sum up all the various hypotheses made by all players in that game into a single price, which will reflect the combination of war premium, and war probability that the market, as a whole, includes in the price.

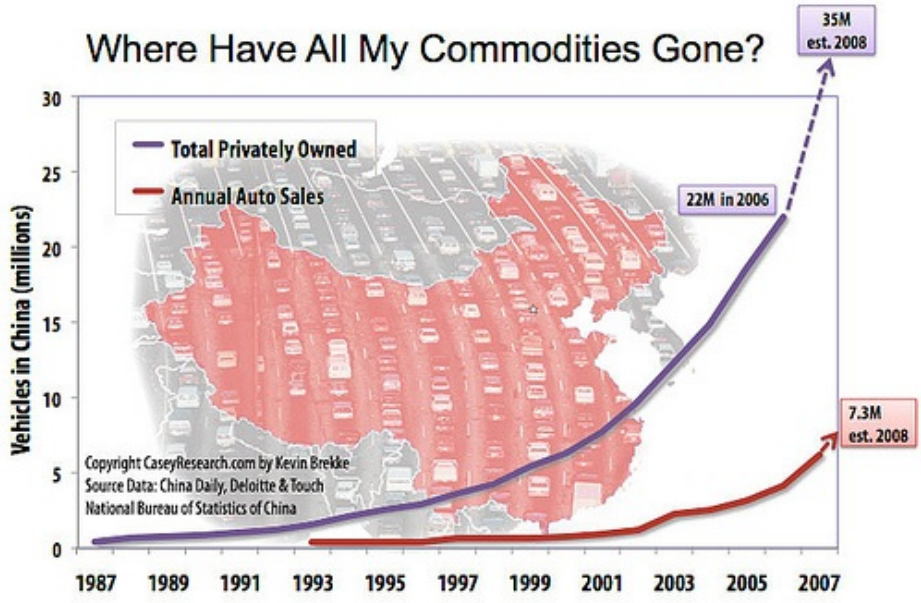
So it is very much possible that 20-40$ in the current price are linked to worries about war. But

speculators, here, are actually providing a valuable service: by betting on oil prices (in both directions), they allow all players to hedge that risk of war. Those that think war is more likely will be happy to buy oil futures at prices they think are very low; those that think that war is unlikely and that there is too much of a premium will be happy to sell futures into that market.

While this may create an increase in prices, it would only reflect the reality that a war with Iran would have consequences, and that it's not completely unlikely yet. However, I'd note that futures do not seem to change much in 2009 compared to 2008: so either the markets don't actually think that Obama will be elected, or they don't seem to think that it will have a material impact on the probability for war. Or there is no war premium now, and we're back to square one.

2) **Chinese growth**

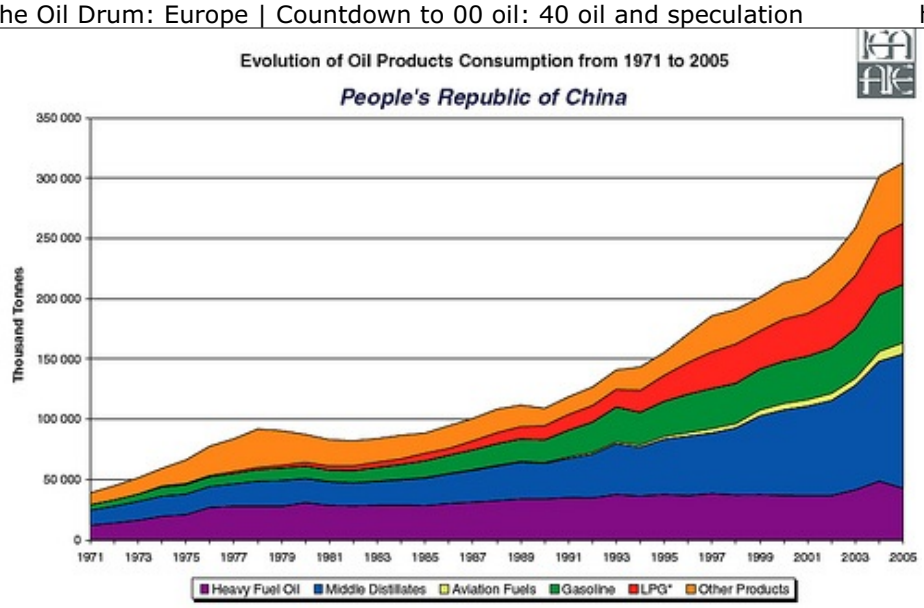
This one has also been widely discussed, so I presume most of you are familiar with it. Still, a few graphs are worth showing here:



As discussed on Casey Research, China is enjoying staggering growth rates for car ownership.

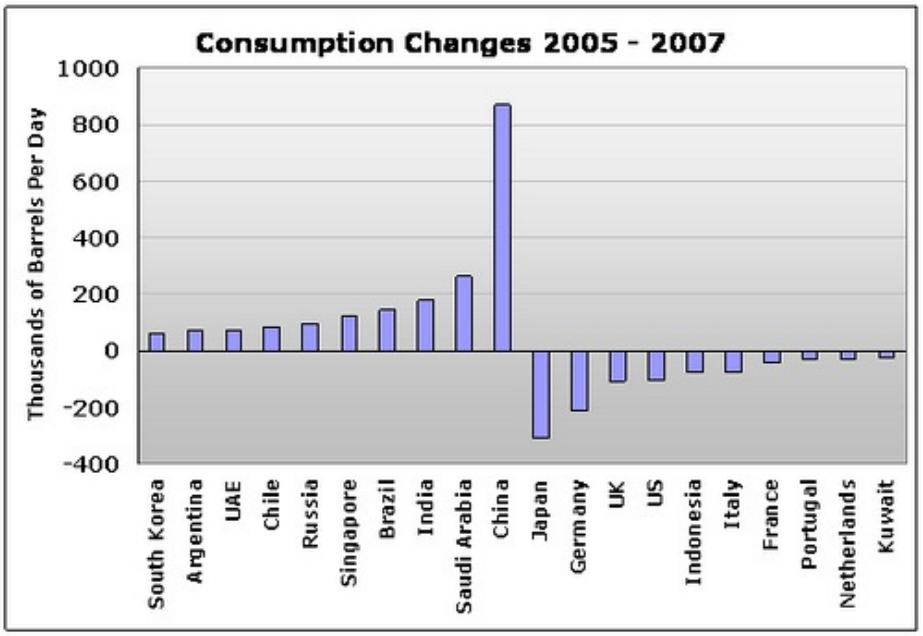
> Assuming that the 7.3 million new car owners in 2008 each drive 5,000 miles a year, and they achieve 40 miles per gallon, the result would be an additional 45.6 million barrels of crude demand, equivalent to 125,000 bbl/day. In other words, **new** Chinese drivers will devour 25-30% of the recently promised Saudi production increase in a single year.

Looking at this over a few years (from the International Energy Agency (pdf):



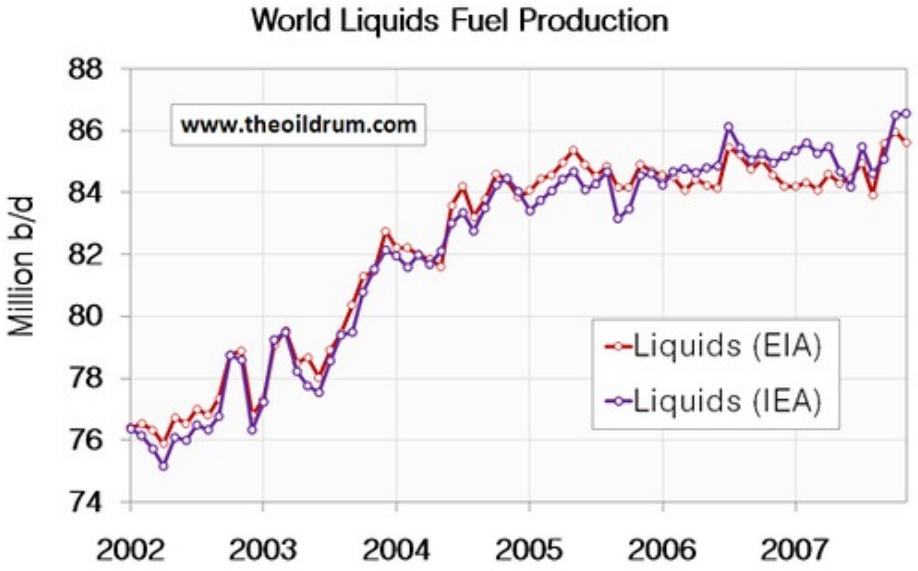
The lighter blue bit is mostly diesel. Note that 2007 consumption was 347 million tons, ie 7mb/d.

To put this in another perspective again (from Net Oil Exports):

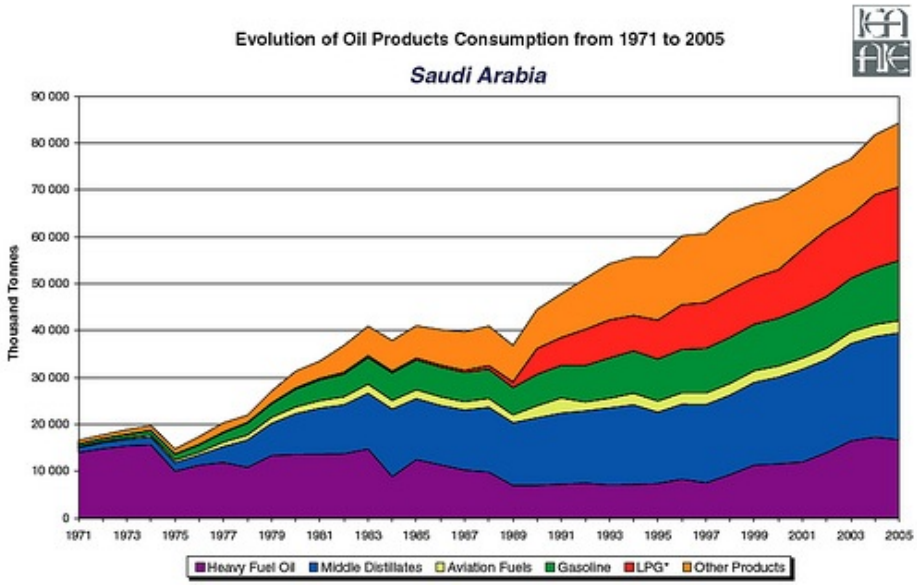


Chinese growth in consumption dwarfs by far the declines noted in rich world countries like Japan, Germany and, yes, the USA (note that the decline in the US is still a lot smaller in absolute terms than those in much smaller economies in Europe or Japan).

So: Chinese demand growth is very real, it's very large, it's highly likely to continue for a number of years (when people finally reach the car affordability stage, they're not going to be stopped by the cost of fuel - not for a while anyway. The difference between no car and a car is so massive that the price of gas is a minor consideration - especially when gas prices are still subsidized...). and it certainly has an impact on oil prices by its sheer size, given the current stagnation of oil production.

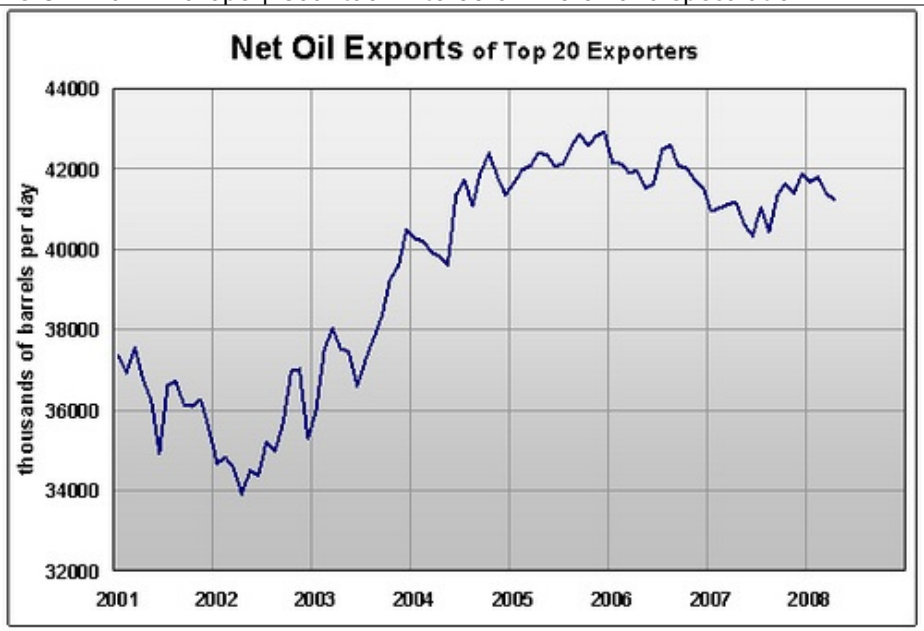


3) **Saudi numbers**



The previous two graphs, and this one above (from the IEA again (pdf), provide interesting information regarding oil producers: not only is their production stagnant, but their consumption is going up massively. And it's no wonder: they're flush with money, gas is heavily subsidized at home, so people drive more and more. Thus, the biggest increases in oil demand, beyond the "usual suspects" of China and India are almost all big oil producers: Saudi Arabia, Brazil, Russia, UAE. If you look over a slightly longer period, you'll also find Iran and Canada in there.

Which means that *volumes available for export, and thus volumes available on the global oil market, are shrinking* (from Net Oil Exports again):



The numbers don't lie (from ~~westexas~~ [**ed**: the table was actually provided by datamunger]):

NET OIL EXPORTERS (EIA)

Rank '07	Name	2005	2006	2007	+/-
1	Saudi Arabia	9095.6	8525.3	7923	-
2	Russia	6756.0	6865.8	7018	+
3	United Arab Emirates	2472.8	2564.1	2548	-
4	Norway	2756.5	2542.4	2321	-
5	Iran	2666.1	2462.4	2298	-
6	Kuwait	2335.9	2340.3	2268	-
7	Nigeria	2330.2	2130.6	2040	-
8	Venezuela	2265.3	2182.6	2024	-
9	Algeria	1840.1	1842.0	1862	+
10	Angola	1210.5	1379.3	1707	+
11	Libya	1455.0	1530.0	1552	+
12	Iraq	1341.8	1437.6	1484	+
13	Mexico	1738.9	1710.5	1456	-
14	Kazakhstan	1103.9	1144.9	1193	+
15	Qatar	1015.7	1032.0	1011	-
16	Canada	794.9	1024.0	1010	-
17	Azerbeijan	326.0	521.1	723	+
18	Oman	714.1	674.4	642	-
19	Equatorial Guinea	395.1	385.0	400	+
20	Sudan	280.3	300.7	386	+
21	Ecuador	377.7	376.0	345	-
22	Argentina	321.7	323.9	300	-
23	Columbia	275.0	278.7	276	-
24	Congo (Brazzaville)	228.9	239.6	241	+
25	Gabon	253.0	223.8	231	+
26	Yemen	274.0	241.3	217	-
27	Malaysia	250.8	228.3	202	-
28	Syria	219.0	187.9	184	-
29	Brunei	200.6	208.7	167	-
30	Chad	175.3	156.6	143	-
31	Trinidad and Tobago	152.9	161.5	136	-
32	Denmark	195.9	153.8	120	-
33	East Timor	94.4	100.9	78	-
34	Ivory Coast	30.7	64.5	77	+
35	Turkmenistan	98.7	69.9	63	-
36	Cameroon	58.5	62.3	58	-
37	Vietnam	137.0	88.5	57	-
38	Papua New Guinea	14.3	17.8	15	-
39	Bahrain	16.6	15.8	14	-
40	Congo (Kinshasa)	8.7	9.5	12	+
41	Egypt	53.1	14.5	11	-
42	Bolivia	10.7	8.1	8	-
43	Tunisia	-13.1	-12.8	6	+
44	Mauritania	-20.0	11.3	5	-
	Total (exporters only)	46342.2	45838.2	44832.5	
	Change (year over year)		-1.10%	-2.24%	

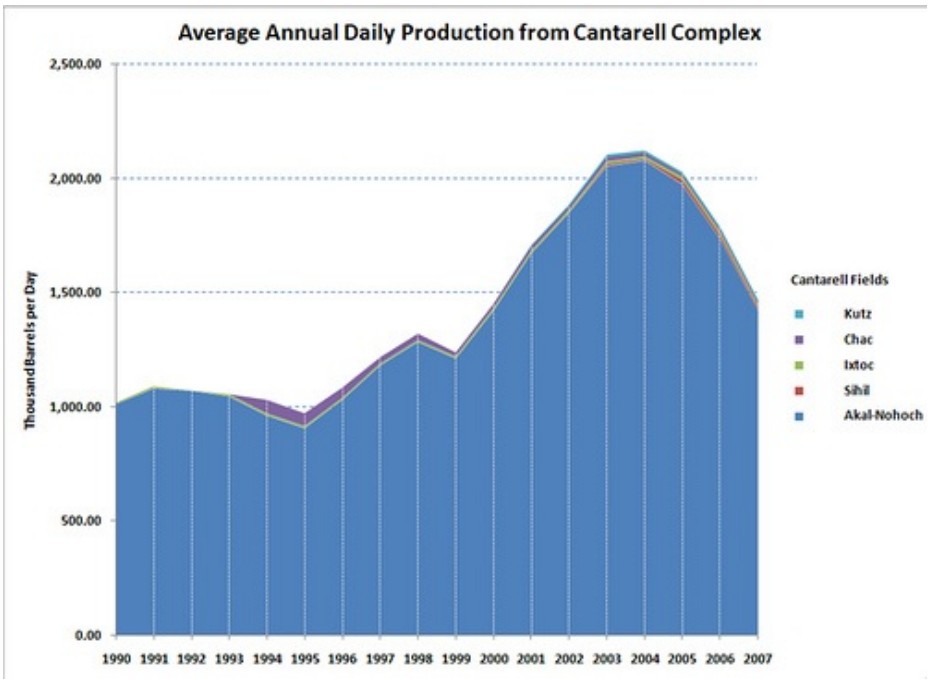
The only major producers which have increased exports lately are Angola and Russia, and Russian production is now declining (while consumption is booming). The conclusion is simple: there is less and less oil on the market for us.

4) **Production declines**

Beyond Russia, it is striking to note how many regions we have been relying on are experiencing

absolute production declines. All mature fields have a natural decline rate, and whole provinces are seeing absolute declines in their production.

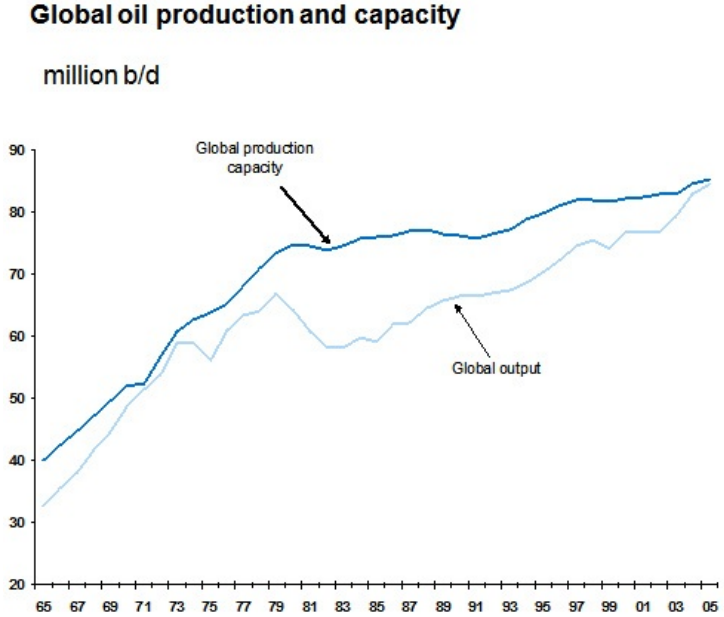
This is nowhere as spectacular - and worrisome - as in Mexico, where the supergiant Cantarell field has lost close to half its production capacity in the very recent past, thus threatening exports to the US from a (relatively) friendly neighbor: (from here)



Just like the decline of the North Sea seems to have caught the UK government unaware, and is leading to quasi-panicky behavior by the UK government (which one day blames the Russians, one day wants to go all nuclear, one day wants to go all-wind, and generally blames "uncompetitive" continental Europe for its plight rather than its own policies, or lack thereof), the brutal decline of the Cantarell field, and of overall Mexian production is likely to have brutal consequences, as the country loses its main source of exports and the Mexican government its main source of tax income. Social unrest, and massive migration toward the North could be one outcome...

5) **Lack of spare capacity**

But let's come back to the oil market for a second: you have a combination of still strong demand growth (in particular in oil producing countries) and stagnant production combining into shrinking export capacity and, more importantly, into a quasi-permanent lack of spare capacity (from this comment by **SamuM** in a recent thread):



The significance of such tightness of supply cannot be overstated. In normal times, when demand varies, market equilibrium is reached by adjusting production to such demand, which is a relatively easy and cheap process. But when supply is constrained, as it is now, any brutal change in the market (whether on the demand side, for instance through a cold spell in winter requiring more heating, or a hot spell in summer requiring more AC, or on the supply side, for instance guerilla attacks in Nigeria, a refinery strike in Scotland, or a pipeline accident anywhere) will require market equilibrium to be reached by demand destruction, which is a lot harder and triggers much more substantial price movements: prices need to move high enough for some users of oil to renounce such use and "take their demand out of the market", whether by not doing what they wanted to, or by finding a substitute. In the US, people travelling less for vacations, or carpooling, have barely managed a couple percent demand destruction. Imagine that the Saudis and Venezualeans, with their subsidized prices, are immune fro msuch pressure, and that several percent need to be cut off demand abruptly: it will require much higher price hikes than have been experimented yet.

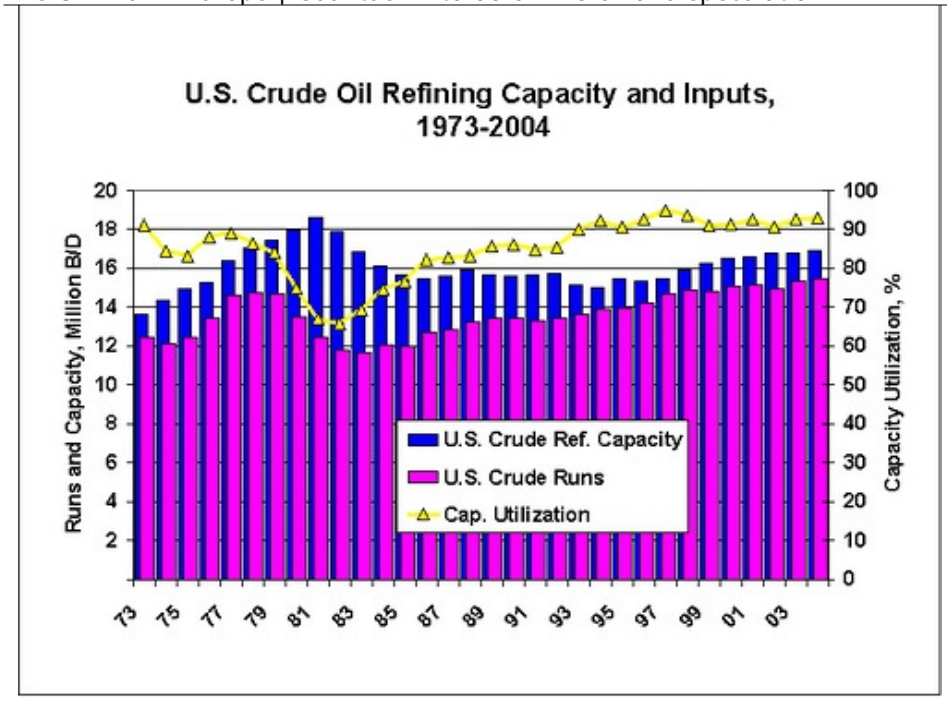
It's simple really: price will go **high enough for the pain to translate into lower oil use** in price-sensitive countries, the list of which is topped by the US, where consumption is high, oil price variations are not dampened by massive taxes (prices going from $3.50 to $4 is more painful than prices going from $8.50 to $9).

The lack of spare capacity certainly explains why very small variations in output or demand can have disproportionate impacts on prices: when you are right on the edge of the knife, any movement can make you fall off.

6) **Refining issues**

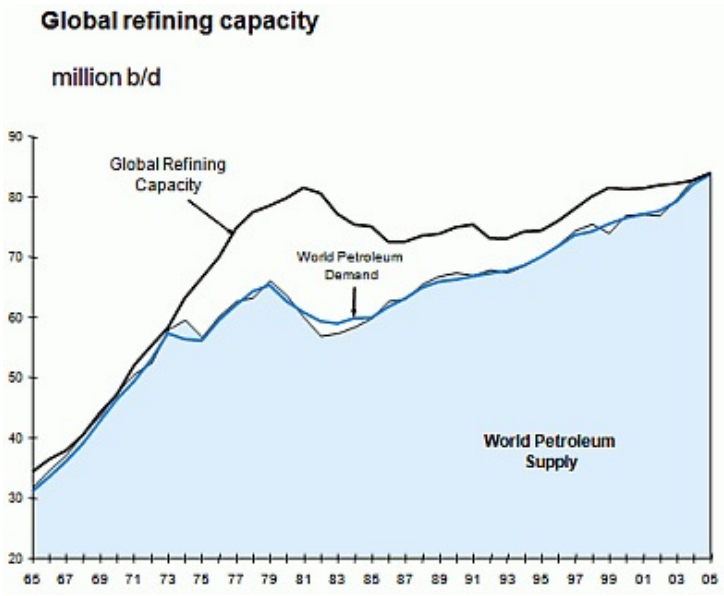
I thought I'd add just a few words on refining capacity in the US, as it is often blamed for gas prices as well.

Energy information Agency data shows that refining capacity has gone up in recent years even though no refineries were built, with refinery capacity use very stable at high levels. This has not changed much in the past 2 years, even as Katrina took its toll for a while.



Source: *International Energy Annual*, Table 3.6, and Petroleum Supply Annual

And as the tables that are provided on a monthly basis by Californian authorities show (see 2008 numbers and 2007 numbers), refining margins are actually a lot lower this year than last (roughly down from a dollar per gallon to half a dollar per gallon) and have helped lower the impact of oil price increases in the past few months. So you certainly can't blame refiners this year, even though global capacity is tightening:



Altogether, it appears that they are a number of factors explain oil price increases perfectly well, with no need to go into conspiracy theories or market manipulations.