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The Oil Price Really Is A Speculative Bubble

by

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Abstract

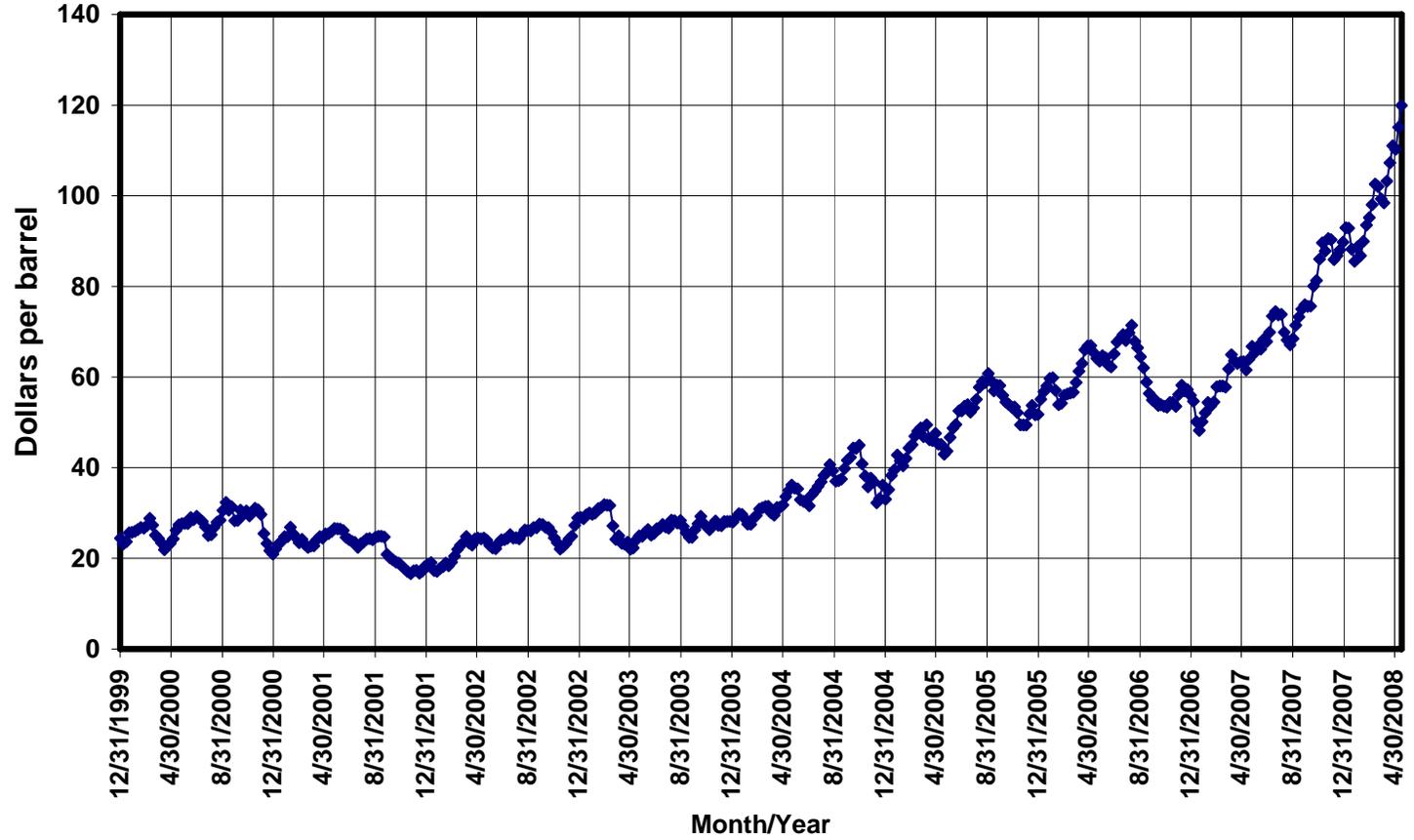
The oil price really is a speculative bubble. Yet only recently has the U.S. Congress, for example, showed recognition that this might even be a possibility. In general there seems to be a preference for the claim that the price increases are the result of basic economic forces: rapid growth in consumption, pushed particularly by the oil appetites of China and India, the depreciation of the U.S. dollar, real supply limitations, current and prospective and the risks of supply disruption, especially in the Middle East. These “explanations” will be taken up one by one, but first a view of what has happened to oil prices over recent years.

I. Tracking the Oil Price

Chart 1 presents an authoritative set of data produced by the U.S. Energy Information Agency (EIA), averaging the current prices of different qualities of oil at different places, each given a specific weight according to its relative export volume. The Chart shows that, after being relatively stable at \$25 or \$30 dollars a barrel for a number of years, the price started to rise in 2004 and continued until after the middle of 2006. After a drop of almost \$20 a barrel in 2006, prices began to climb again and at a much faster rate.

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Chart 1
Petroleum Prices



Source: U.S. Energy Information Agency (EIA)

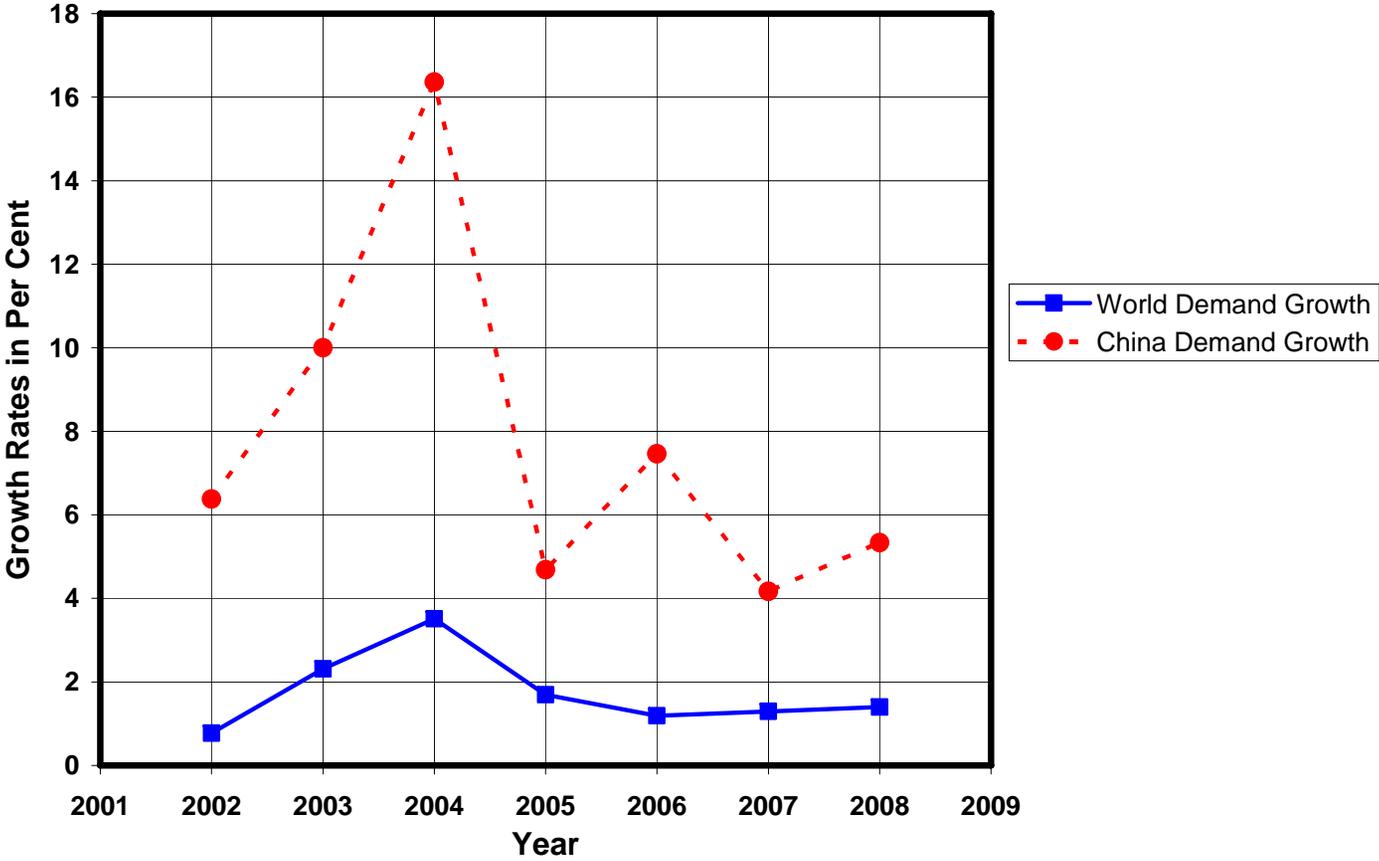
Although the influences behind price movements cannot be determined simply by looking at the price record, that record can be suggestive. Thus, it is tempting to believe that something big happened in 2004 to create a definite upward push to prices and then, again, in 2007. In 2007 and the first six months of 2008, something even bigger was pushing up prices even more rapidly. What could the, “something big” be? A powerful demand push? A major supply constraint? Or, the suspicion must emerge, that the price movements in 2007 and after look suspiciously like other speculative price movements. Think pork bellies.

II. Oil Demand

We cannot pick out the constraining effect of prices on demand without doing a lot of careful statistical analysis, which is beyond the intent of this note. Still it is interesting and informative to look at demand growth. That is shown in Chart 2, based on International Energy Agency data, which records the growth rates of world demand and, separately, those of China, which, it has been argued, are pushing the world oil price.

There was a growth in total demand from 2002 to 2004 pushed by more rapid growth in the Chinese demand during that period. Since 2005, the rates of growth in world demand and Chinese demand have actually fallen substantially. The annual increases in world oil demand have been about 1.5% and the growth in Chinese demand has fallen since its peak in 2004 to about 5.3%. It is possible that the demand pressures in China have been constrained only by the dramatic price increases. Yet the

Chart 2
Growth in Oil Demand - World Wide and China



Source: International Energy Agency

facts refute that. While domestic and foreign oil prices in China have risen along with international oil prices, gasoline prices to consumers have hardly moved, as a result of government subsidies. On the 28th of May of this year, gasoline in China was \$2.49 a gallon, as reported in Forbes. So one cannot give credit to the higher oil prices for holding down growth in Chinese consumption.

III. The Effect of Dollar Depreciation

The depreciation of the U.S. dollar has been used as another explanation for the increase in oil prices in dollars. This is an easy argument to dispose of. The dollar has depreciated by about 9 per cent against the Euro since 2004, when oil prices began their strong upward move. So it would have taken just a 9 per cent move of the oil price in dollars to have preserved the purchasing price in Euros of a barrel of oils. Since that time the price of oil in dollars has, roughly quadrupled.

IV. The Danger of Political and/or Armed Disruptions in Oil Supply

This is a more difficult argument with which to deal as there can be plausible differences in political and strategic assessments. However, if the argument is to hold, there must have been a drastic change in the prevailing assessments in 2004 and a still more dramatic change in 2007, when oil prices began to climb at an even faster rate.

The Middle East, in particular, seems always to be in some kind of turmoil so that excuses can be always be found for pessimism. Yet there have been no new major, recent threats to stability. It might be argued that the tensions between Iran and the U.S. and saber rattling by Israel have increased the worries about the possibility of Iranian supply disruptions. Iran, itself, needs all the dollars and Euros it can earn from its oil to support its economy. And Iran has never seriously threatened an oil embargo. In fact Iran is investing in new oil fields in order to increase its supply and plans to increase oil

production by 1 million barrels per day, an almost 20 per cent increase. It is striking that this has had no effect on prices.

A strong recent signal of potential moderation of Middle East tensions has occurred in the past month. That is the apparent real interest of Israel and Syria in diplomatic discussions of the moderation of the tensions between them by exchanges of land by Israel and commitments by Syria to reduce its support for Hezbollah in Lebanon. This signal has been ignored by the oil price.

Short of a virtually complete shutdown of Middle East oil production, no plausible price elasticity of demand would justify the quadrupling of oil prices. The possible effect of political and military tensions in raising oil prices cannot be proved. Neither can it be disproved, although more evidence could be assembled than could be presented here. Nonetheless, there are enough obvious facts to raise questions as to its relevance.

V. The World is Running Out of Oil, Now or Later?

Could near term supply constraints could be responsible for the price increases. The International Energy Agency publishes data not only on OPEC production but also on its, “spare capacity,” which is the difference between its, “sustainable capacity,” and actual production. In February of 2008 that spare capacity was just slightly less than 10 per cent of its actual production. That was lower than the spare capacity in 2001 and 2002, but higher than that in 2004, 2005 and most of 2006. It is a comfortable cushion.

The final argument that has been made for the increase in oil prices is that the world will run out of oil at some, not too far distant date in the future. The threat is that at some point there will simply be no more oil to be pumped out of the ground or so little that prices must rise substantially to ration what little there is. This argument seems to be

only a matter of common sense: there must be a limit to what oil there is under the ground.

Finding the limit, whatever it is, depends on the investment in exploration and pumping. The U.S. Energy Information Agency estimates that proved oil reserves have been increasing at about 2.5 % per year since 2004, faster than the rate of increase in oil consumption. Second, the oil supply does not depend only on what can be pumped out of the ground. The oil sands of Venezuela and Canada and the oil shales of the U.S. are potentially enormous reserves, larger than the underground oil reserves. The oil sands are expensive and the costs of getting the oil are increasing, but the breakeven barrel cost of a current project, was estimated at just \$14.50 a barrel in the Energy Bulletin, far below the current price of underground oil.

Moreover, ethanol from sugar cane and corn is now a practical oil substitute. It is true that price in the U.S. of ethanol from corn is rising as the value of its food use is increasing. However the ethanol price in the U.S. is politically determined by the quotas and tariffs that the U.S. imposes on Brazilian ethanol from sugar. If those were removed, the price of ethanol and corn would fall.

Suppose that there is a specific limit to oil reserves. What current price would that justify? A common valuation method, known as Hotelling's Rule, says, if there are good markets, the price of the reserves should rise at the rate interest, assuming the cost of raising the oil should remain constant. The reasoning is simple. Oil is an asset like, say U.S. Treasury bonds. Putting aside any risk premiums, holding the oil asset should be equivalent to holding the bonds and, therefore, must yield the same rate of return. Since oil reserves do not pay interest, there must be an annual increase in the oil price that is equal to the rate of interest. Subsequent analysis suggests that his rule overvalues oil

reserves and a more accurate rate of increase in oil reserves would be about one-half the going interest rate.

The rate of increase in oil prices has been much, much higher than either approach would warrant, so it is difficult to justify the rapid increase in oil prices by referring to a judgment that oil may, “run out,” in the future.

VI. The Oil Price is a Speculative Bubble

Since there is no reason based on current and expected supply and demand that justifies the current price of oil, what is left? The oil price is a speculative bubble.

This is an idea that has some backing in financial circles, e.g. George Soros. The spiking price pattern would, itself, suggest it. It is well known that hedge funds are very active in the oil market and their activity, along with other speculators, has raised the volume of oil transactions far above the volume warranted by ordinary commercial transactions.

Have the rapid price increases lasted so long that the impetus cannot be just speculative? Well speculative bubbles can last a long time. Think of the dot com bubble or the bubble in housing prices.

Is a speculative bubble irrational? No, it is rational to ride along and trade in a speculative bubble as long as it is expanding. The moment of truth comes only at the end, when the bubble bursts.

It might be expected that if the prices were a speculative bubble that would lead to an inventory build up, especially as there is spare productive capacity. There are two reasons why that has not occurred. First, inventory capacity is relatively low. Second, the agreement in the OPEC cartel to limit production has been successful and non-cartel members have implicitly consented to go along.

What could bring the bubble to an end? Anything that changes future price expectations... For example, a strong dose of reality. It could come in several ways. If one of the important oil producers should announce an increase in its production, the announcement itself might break the bubble. Suppose a U.S. president announced that the oil prices were creating an emergency economic situation that justified using the Strategic Petroleum Reserve. Then allocations from that reserve were made. That could break the bubble, perhaps even before the actual allocations. It might be enough if the U.S. president just announced that there was really no energy shortage and the oil price increases were just speculation. Analogously, “open mouth” tactics on the part of the president or the chairman of the Federal Reserve are a recognized tool of monetary policy.

There is no doubt that the speculative bubble is having real effects. Just ask a commuter, a trucker or an airline customer and many production and commercial firms... So efforts to break the bubble are warranted.