

## Economics Group

### Special Commentary

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# Petroleum Markets: Comparing Two Crises

## Comparing the Emerging Market Crises of 1997-1999 with the Great Recession

When the world economy stood at the edge of the abyss after the Lehman Brothers collapse in September 2008 and then went through the ensuing freezing of the financial markets, oil prices plummeted from nearly \$150 per barrel for West Texas Intermediate (WTI) by mid-July 2008 to less than \$35 per barrel by February 2009. Since then, oil prices have steadily trended upward to roughly \$80 per barrel at present. Thus, it is clear that even though the world economy almost went into a tailspin during the crisis, it seems unlikely that petroleum prices will go back to \$10s or \$20s per barrel as many analysts had expected. Even the severity of the recent Great Recession was unable to bring oil prices below \$30 per barrel. We argue that, even if we assume another slowdown in the U.S. economy, petroleum prices will not go back down to the \$10s, or even \$20s, per barrel that existed during the late 1990s and early 2000s. However, if there is a major crisis that involves the United States, emerging markets and the rest of the world's economies, this alternative may come to fruition.

*Even the severity of the recent Great Recession was not able to bring oil prices down below the trough of \$39.16 dollars per barrel during this cycle.*

### The Petroleum Industry Before 1999: The Supply Side

In this report, we compare the effects that the world economic environment had during the period before the East Asian, Russian and Brazilian crises of 1997 (i.e., Emerging Market Crises [EMC]) and the Great Recession of 2008 had over the price of petroleum. At first glance, it is clear that the EMC had a much larger effect on oil prices for the petroleum industry as a whole than the Great Recession. That is, oil prices dropped to about \$11 per barrel in December 1998, at the height of the EMC, while "only" dropping to roughly \$35 in February 2009, at the height of the Great Recession.

Perhaps the biggest reason for this difference was that commodity prices had been depressed for many years before the EMC events and thus were already low coming into the crises. Thus, when the crises hit, the percentage drop in oil prices was not as high as it was during the Great Recession. However, the effects over the industry were very different.

That is, the percentage drop during the Great Recession, 75 percent from the peak, was larger than the 55 percent drop that occurred during the EMC. However, from the petroleum industry standpoint, the drop to the teen levels during the EMC had a much greater impact on the world petroleum industry, both upstream and downstream, than that of the Great Recession so far.<sup>1</sup> The reason for this is that petroleum prices remained well over \$30 per barrel during the Great Recession, a price that is enough to keep many oil producers in business without causing massive structural changes to the industry or to their production strategies while preventing dire economic consequences as was the case during the aftermaths of the EMC.

Before the EMC, conditions in the petroleum industry mirrored those of other industries that have been plagued by overcapacity and severe inefficiencies. For example, the automobile industry's overcapacity during the 1980s and 1990s made it difficult for auto companies to raise

<sup>1</sup> Upstream means exploration and production while downstream refers to the refining and marketing of petroleum products.

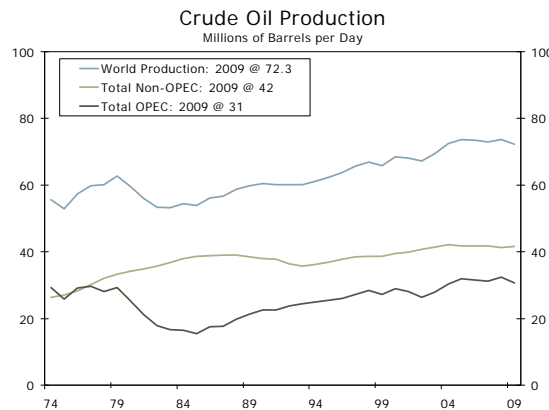


prices, putting pressure on the industry's ability to compete and survive, given the less expensive imported cars flooding the market. Another example can be seen in the U.S. airline industry before 9/11. Excess capacity conditions in the airline industry before 9/11 made it difficult for the industry to have pricing power. This is a lesson that seems to have been learned by the airline industry since that time as you can hardly see an empty seat today.

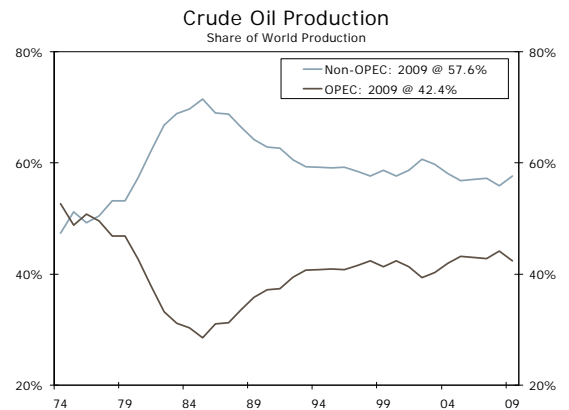
***When prices dropped to \$11 per barrel, the industry got its act together.***

Thus, when prices dropped to \$11 per barrel, the petroleum industry got its act together, basically adjusting quickly to the new petroleum price reality. The industry decommissioned old and inefficient ships, decommissioned and closed down old and obsolete refineries across the world, shut down highly inefficient wells and adjusted itself to what some believed was going to be a long-term petroleum price scenario.<sup>2</sup> This structural change within the industry was probably the first step in the right direction, as petroleum prices quickly began to increase during the first years of the new century due to increased demand. However, the forecasts at some of the most important petroleum companies in 1998 had petroleum prices averaging \$18 per year for the following 25 years. Thus, very few were able to see what was going on in the world petroleum market at that time and could foresee how different the petroleum industry would look 3–4 years later. In fact, early in the new millennium OPEC cartel members were very conscious that the world petroleum industry had gotten fitter and that a small cut in production by OPEC cartel members would increase the price of petroleum by a large percentage.<sup>3</sup> This can clearly be appreciated by looking at petroleum production and petroleum prices in the figures below.

**Figure 1**



**Figure 2**



**Source: U.S. Energy Information Administration and Wells Fargo Securities, LLC**

Meanwhile, world petroleum production dropped about one percent during 1999 as a consequence of the EMC even though oil prices were at their lowest level in decades. This was the largest drop in production since the early 1980s when the emerging markets triggered the 1980s' debt crisis. However, the production drop during that crisis occurred under different circumstances, because petroleum prices were at their highest levels rather than at some of their lowest levels.

***The petroleum industry has changed considerably since the mid-1970s.***

Furthermore, the petroleum industry has changed considerably since the mid-1970s—from being an industry where the OPEC cartel was a dominant influence on the price of petroleum to one where that power has been limited by increased production coming from non-OPEC countries to the resurgence of the cartel powers today. As an example, it is interesting to look at the structure of petroleum production between OPEC and non-OPEC countries over the years. Before the first

<sup>2</sup>The author worked in the petroleum industry during the EMC period and this is his own recollection of events.

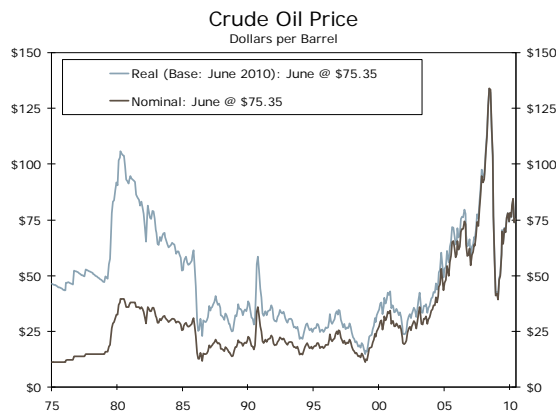
<sup>3</sup> Impressions gathered by the author during a meeting with representatives of one of the most important petroleum companies within the OPEC cartel.

oil crisis in the mid-1970s, the world share of oil produced by OPEC's members was more than 50 percent. This dropped to less than 30 percent of total production by 1986. This was the period when the OPEC cartel held its greatest power, as it cut its own production and sent world production tumbling while oil prices skyrocketed. Since then, however, the OPEC cartel's petroleum output has again increased to represent more than 40 percent of total oil production in 2009, while the power of the cartel has also increased as many speculate that non-OPEC production of petroleum has peaked.<sup>4</sup> This recent speculation on whether non-OPEC member countries have seen their "peak" point in terms of petroleum production should be taken into context.<sup>5</sup> While it is true that the OPEC cartel influence in the production side of the equation has increased, we should not rule out the potential for higher output levels from non-OPEC countries if the price is right. If production levels at non-OPEC countries have actually peaked, then the OPEC cartel's power over the price of petroleum in the near future will continue to increase.

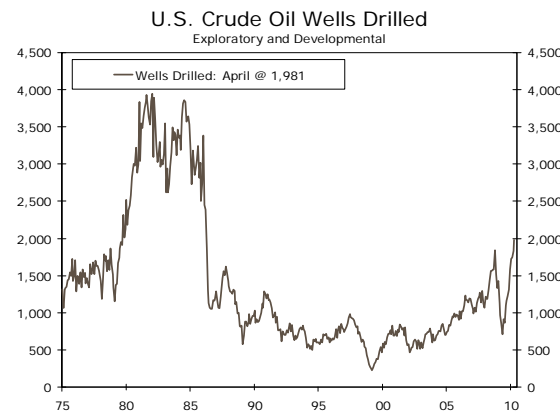
But let's look at the evolution of the price of petroleum over the last several years. Since the early 2000s, the nominal as well as the real price of petroleum has skyrocketed (Figure 3).<sup>6</sup> However, looking at the U.S. petroleum sector, the number of exploratory and developmental wells drilled has not increased as it did during the 1970s and 1980s (Figure 4). For example, the number of exploratory and developmental wells drilled in the United States during the 1970s and 1980s peak oil price period increased to almost 4,000, whereas the number of wells during the peak oil price period recorded in 2008 was "only" 1800. Also, while the number of wells in the United States increased to almost 2,000 early in 2010, we do not expect this number to go much higher than current levels given our expectations regarding the price of petroleum. Furthermore, in real terms, oil prices only went to \$106 per barrel during the 1970s-1980s while they reached almost \$134 per barrel during the 2008 peak oil price period. The real price of petroleum today is close to \$80 dollars per barrel, but the number of active oil wells in the United States is almost half of what it was in the 1970s and 1980s.

***The nominal as well as the real price of petroleum has skyrocketed.***

**Figure 3**



**Figure 4**



**Source: EIA, Federal Reserve Bank of St. Louis and Wells Fargo Securities, LLC**

<sup>4</sup> Reports from the International Energy Agency in 2008, Merrill Lynch in 2009, and other analyses support this view of peak oil production from non-OPEC countries.

<sup>5</sup> Any argument that refers to "peak" oil production is highly relative and is related to the actual price of petroleum. If the price is high enough, new technologies will probably be introduced that will allow petroleum to be extracted from places and in ways that were not previously feasible. This means that production may be able to expand rather than contract if the price is right.

<sup>6</sup> The real price of petroleum is the nominal price of petroleum less the effects in the price level over the years. In this case we used the consumer price index in order to deflate the nominal price of petroleum. If inflation is positive, as is normally the case, taking out the effects of inflation allows analysts to compare the price of petroleum across the years.

Thus, while current petroleum prices have produced an important expansion in the number of wells active in the United States, the response to higher prices has not been as strong as it was during the 1970s and 1980s. Furthermore, the number of wells in the United States during the collapse in oil prices in 1997-1998 was impressive, falling to only 223 wells by March 1999 and showing how fast the industry is able to adjust to the new price of petroleum.

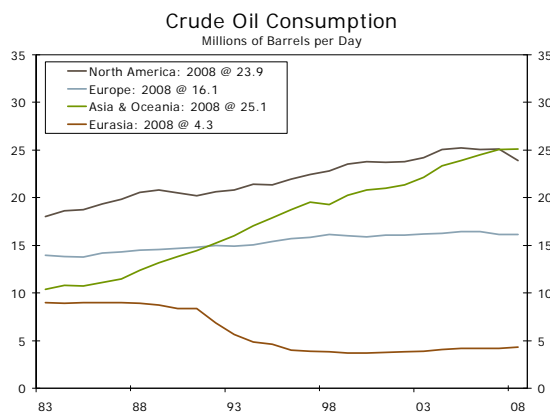
**The Petroleum Industry Before 1999: The Demand Side**

The industry’s problems during the EMC were not limited to supply issues. The demand side of the petroleum equation weakened and had the potential to sour even more if Chinese and Indian demand had plummeted due to the crises. Not only were emerging market (EM) countries large consumers of petroleum at the time, but the rate of growth in consumption of petroleum coming from EM countries was very strong (see Figures 5 and 6). This compares to the flat or even declining patterns of demand coming from the developed countries. This meant that, at the margin, the EM countries were the ones helping to pull petroleum prices higher on the demand side before the EMC.

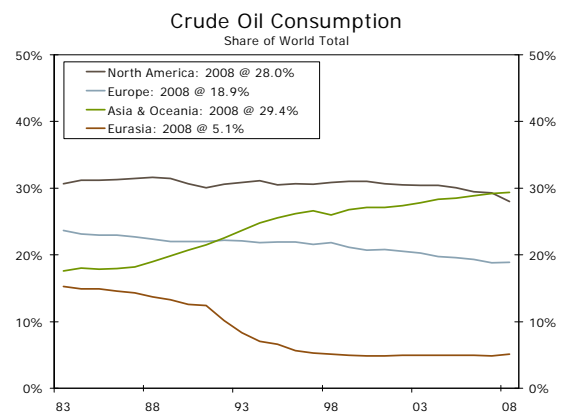
***The problems with petroleum demand probably predate the emerging markets crises of 1997-1999.***

However, the problems with petroleum demand predate the EMC of 1997-1999 and can be traced back to the demise of the ex-Soviet Union. The dismantling of the Soviet Union had a severe effect on petroleum demand from the countries that were part of the Soviet bloc before 1990. Furthermore, weak demand from these countries lasted well into the late 1990s. Indeed, petroleum demand from Eurasia dropped by a whopping 60 percent during the period 1988–1999 when petroleum consumption went from 8.9 million barrels per day in 1988 to only 3.6 million barrels per day in 1999 in this region. As if this wasn’t enough, in the late 1990s the EMC added more worries from the petroleum consumption side. For example, in 1998 Indonesia’s demand for petroleum dropped four percent, South Korea’s 15.0 percent, Japan’s 3.4 percent, Malaysia’s 4.3 percent, Thailand’s 5.7 percent, while the Philippines and Singapore’s demand for petroleum dropped 3.1 percent and one percent in 1999, respectively. Thus, the demand conditions were not the best for the petroleum sector during the latter part of the 1990s due to the structural changes that had occurred in the ex-Soviet block, and the EMC contributed further to the weakness in petroleum prices during the period.

**Figure 5**



**Figure 6**



**Source: U.S. Energy Information Administration and Wells Fargo Securities, LLC**

## **The Petroleum Industry During the Great Recession**

Although petroleum production has flattened during the past several years, it has been growing almost continuously since the mid-1980s. Many argue that one of the reasons petroleum production has flattened is because the production of the non-OPEC countries has “peaked.” Whether this is the actual reason or not, it is clear that production of petroleum has flattened since the mid-2000s with the non-OPEC countries producing roughly 41 million barrels per day while OPEC members produce approximately 31 million barrels per day, for a total of 72 million barrels per day in 2009. If the hypothesis of “peak” production for non-OPEC countries is true then, as we said before, the OPEC cartel may be able to exert more pressure and power over the price of petroleum in the future.

Meanwhile, although petroleum consumption was essentially flat during 2008 (the last year reported), growth has been very strong in the emerging markets, even during the worldwide financial crisis of 2008. Therefore, we should expect consumption from the emerging markets to continue to put upward pressure on prices at a time when all indications are pointing to flat to lower petroleum production throughout the world, helped by this assumed “peak” production idea from non-OPEC countries and a renewed life for the OPEC cartel to “individually” determine production and thus market prices.

What is also true is that even the last decade’s surge in the price of petroleum has not diminished the world’s demand for “black gold,” which should be expected as it is not easy to substitute away from petroleum in the short to medium term. However, as the petroleum crisis during the 1970s and 1980s has clearly showed, this is no longer true in the long run. Thus, while we may see higher and sustained petroleum prices in the short to medium term, the long-term picture for petroleum prices is not as clear cut.

Although it will take some time to substitute away from petroleum consumption, current petroleum prices serve as a long-term guarantee for new energy alternatives to be developed in the future. However, these higher prices will also mean that more petroleum is going to be found and extracted using new technologies, i.e., deepwater technologies, which will probably make everybody rethink the issue of whether non-OPEC oil production has really peaked or if it is just a matter of time and availability of technology and price for the non-OPEC countries to see production rise again. If this happens, the OPEC cartel’s pricing power will diminish again and we may see slightly lower prices in the future. However, what is clear is that even if this is the case, oil prices will remain high for the foreseeable future because these new exploration technologies and the cost of extracting these new discoveries, that is, the marginal cost of extracting this new discoveries, is more expensive than older and more easily found petroleum fields. Thus, petroleum prices in the \$10–\$20 range are probably out of the question in the future if current economic conditions persist.

For the \$10–\$20 per barrel scenario to be viable, we need the world economy to go into a deep and long-lasting depression. However, even if this is a possibility in the future the recovery in petroleum prices will be impressive once the world economy recovers and could put petroleum prices again at levels that will probably surpass those of the heydays of 2008.

### **Conclusion**

Because we project that the global economy will not slide back into another recession, we forecast that oil prices will remain in the \$70 to \$90 range for the foreseeable future.<sup>7</sup> The only possibility of a much lower price of petroleum may be if there is a collapse in global economic activity, in which case the price of petroleum could get as low as the \$10s per barrel. However, the consequence of such an event will be that of even higher oil prices in the future than what we are seeing today. World consumption should remain strong during the next several decades and will support high and sustained petroleum prices. Furthermore, new petroleum extraction

***Many argue that one of the reasons petroleum production has flattened out is because the production of the non-OPEC countries has “peaked.”***

***Our expectation is that oil prices will remain high for the foreseeable future.***

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<sup>7</sup> Our forecast calls for global GDP to expand 4.5 percent in 2010 and 3.9 percent next year. For details, see our *Monthly Economic Outlook*, which is posted at [www.wellsfargo.com/economics](http://www.wellsfargo.com/economics).

technologies will allow the petroleum supply to continue to expand as the price of petroleum rises.

We expect the effects of new alternatives to petroleum to continue to develop, especially if petroleum prices remain as high as we expect. However, we do not expect the new alternatives to have a large impact on petroleum utilization in the short to medium term. Demand for petroleum from the world's emerging economies should be enough to keep petroleum prices at current levels or even higher if the developed world put its act together in the coming years. In the long term, new technologies should help petroleum and nonpetroleum alternatives add to the energy supply, and the world energy market should become more competitive. However, until then, we can expect petroleum prices to remain high and trend higher if world economic activity accelerates.

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