

November 2007



Short-Term Energy Outlook Supplement: Why Are Oil Prices So High? ¹

Crude oil prices have increased dramatically in recent years. West Texas Intermediate (WTI) prices, which remained around \$20 per barrel during the 1990's, rose, on average, from about \$31 per barrel in 2003 to \$57 per barrel in 2005, and to \$66 per barrel in 2006. In 2007, WTI crude oil prices have climbed further, to average over \$85 per barrel in October, topping \$90 per barrel at the end of the month. The EIA believes that the following supply and demand fundamentals are the main drivers behind recent oil price movements:

- 1) Strong world economic growth driving growth in oil use,
- 2) Moderate non-Organization of the Petroleum Exporting Countries (OPEC) supply growth,
- 3) OPEC members' production decisions,
- 4) Low OPEC spare production capacity,
- 5) Organization for Economic Cooperation and Development (OECD) inventory tightness,
- 6) Worldwide refining bottlenecks, and
- 7) Ongoing geopolitical risks and concerns about supply availability.

Oil markets have been drawing increased interest and participation from investors and financial entities without direct commercial involvement in physical oil markets. The role of these non-commercial futures market participants in recent price developments is difficult to assess, particularly over short time intervals. However, general principles favor a focus on fundamentals rather than consideration of alternative price drivers, when the explanatory power of fundamentals is high. As outlined below, EIA believes that fundamentals provide the primary explanation for the recent trend in oil prices.

¹ Contact: Erik Kreil (Erik.Kreil@eia.doe.gov)

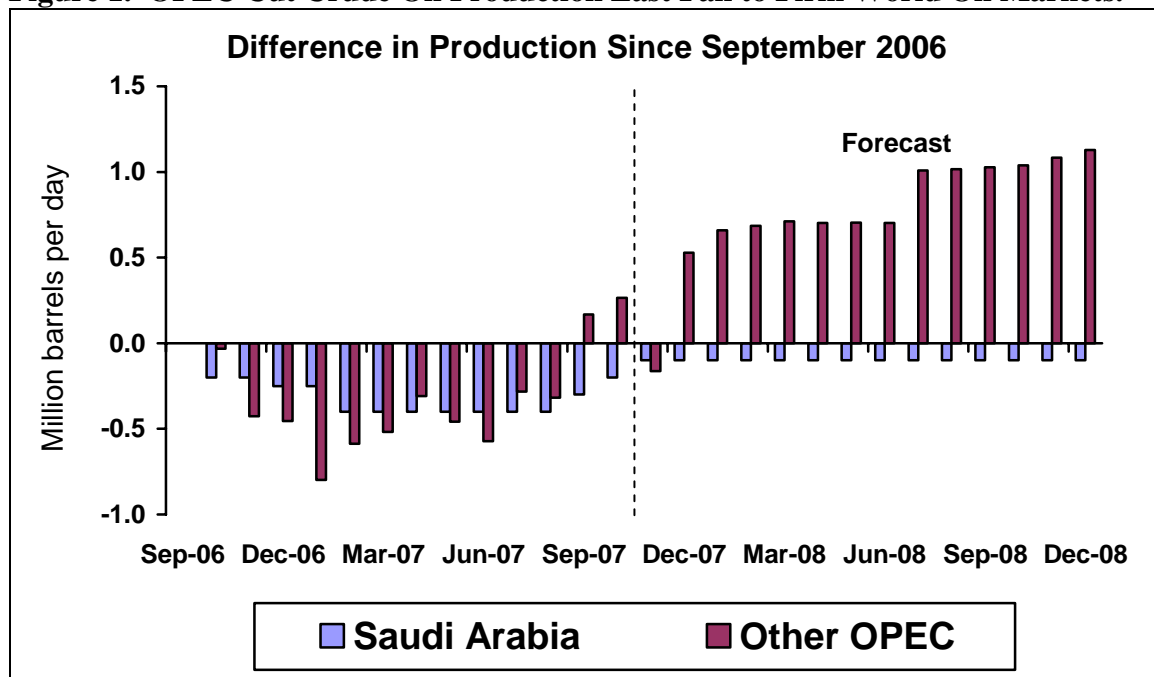
1) Strong world economic growth supports growth in global oil consumption despite higher price levels. Strong world economic growth, especially in traditionally large oil-consuming regions, has resulted in strong world oil demand. When the volume of oil demanded exceeds the volume of oil supplied, oil prices rise to bring oil consumption in line with supply. Global oil consumption rose by 1.1 million barrels per day (bbl/d) in 2006, and is projected to rise by 1.1 million bbl/d in 2007 and 1.5 million bbl/d in 2008. China, the United States, and the Middle East countries are the main drivers of consumption growth, and China and the United States alone are projected to account for half of world oil consumption growth in 2007 and 2008. While high oil prices have helped to slow economic growth in industrialized countries such as the United States, the Chinese economy has shown few signs of slowing down. The economies of oil exporting countries in the Middle East and of Russia have also benefitted from higher oil revenues, boosting oil consumption. In addition, the decline in the value of the dollar against other currencies also supports continued oil consumption growth in foreign countries. Oil is traded globally in dollars, and a declining dollar has made oil less expensive in foreign currencies than it is in dollars, since foreign retail prices are priced in local currencies.

2) A key factor contributing to high prices has been the inability of non-OPEC production growth to keep pace with global oil consumption growth. Non-OPEC production increased by 0.2 million bbl/d in 2006, and is projected to rise by 0.6 and 0.9 million bbl/d in 2007 and 2008, respectively. Non-OPEC production growth remains concentrated in a few areas and it has faced some downward revisions to expectations due to delays in projects and growing production declines in some non-OPEC nations, especially Mexico, the United Kingdom, and Norway. The former Soviet Union, including Russia and the Caspian states, are expected to account for the majority of non-OPEC growth over the forecast period. When non-OPEC supply growth is less than growth in global consumption, the gap needs to be filled by OPEC members' production increases or draws from inventories. If this gap is not filled by OPEC members' production increases and cannot be fully met by a drawdown in inventory, the price of oil must rise to bring consumption in line with production. Furthermore, because petroleum demand is relatively price inelastic in the short run, large price movements are required to bring consumption in line with available supply. OPEC members cut back on production for much of 2007, resulting in an inventory draw down and putting upward pressure on prices.

3) OPEC members' production decisions have played a critical role in determining price trends. Facing rising OECD inventories and relatively weak prices late last year, OPEC announced plans to cut production in November 2006 and February 2007 by 1.2 and 0.5 million bbl/d, respectively. Although OPEC members' actual production cuts (Figure 1) were about half of the planned amounts, the cuts reversed the slide in world oil prices.

In response to rising prices and falling OECD inventories, OPEC recently announced plans to raise production by 0.5 million bbl/d beginning in November 2007. However, OPEC's announcement has not yet dampened upward price pressure, and it is unlikely that these higher volumes will be enough to halt the downward trend in commercial inventories over the next several months. OPEC agreed to reassess the situation at its meeting on December 5, but could also do so at its heads-of-state meeting on November 17-18, in Riyadh. So far, OPEC has not signaled the need for a change in its production policy.

Figure 1. OPEC Cut Crude Oil Production Last Fall to Firm World Oil Markets.

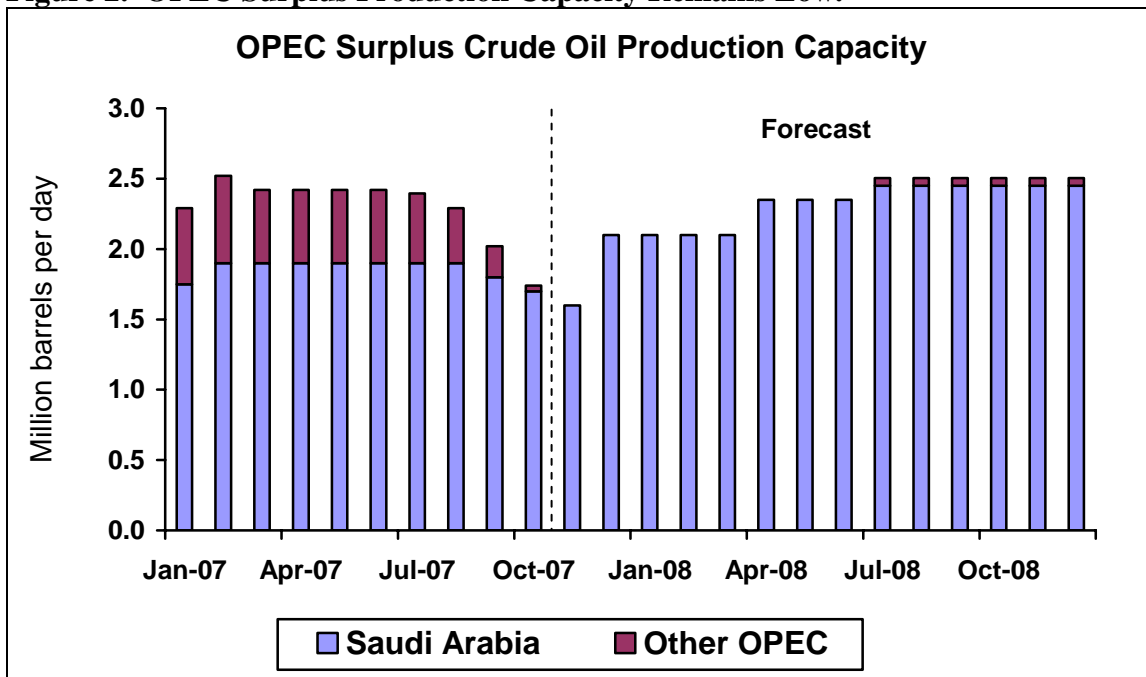


Source: Energy Information Administration, *Short-Term Energy Outlook*, November 2007.

4) Fairly low OPEC surplus production capacity (concentrated in Saudi Arabia) leaves the market with little flexibility to respond to surprises in supply and demand. EIA's outlook for continued rising oil consumption

and moderate non-OPEC production growth suggests that OPEC members' crude production will average about 31.5 million bbl/d in 2008, an increase of about 500,000 bbl/d from fourth quarter 2007 levels. Under this scenario, world surplus production capacity will remain fairly low at around 2 to 3 million bbl/d (Figure 2).

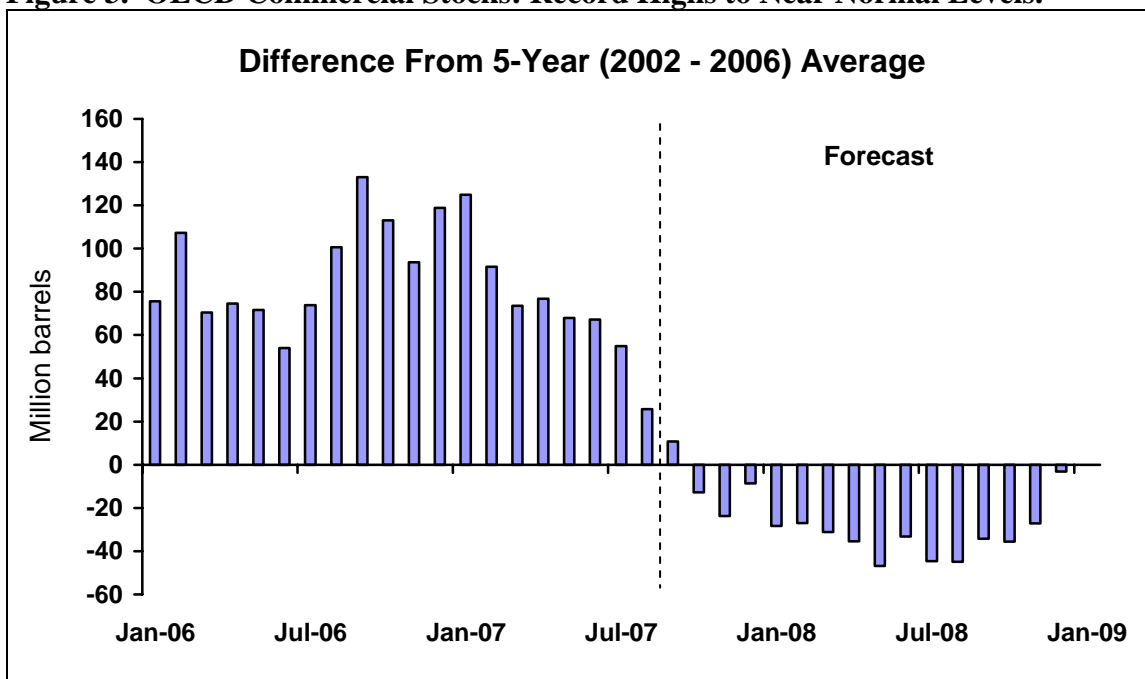
Figure 2. OPEC Surplus Production Capacity Remains Low.



Source: Energy Information Administration, *Short-Term Energy Outlook*, November 2007.

5) Total OECD commercial inventories are declining. While OECD commercial inventories were 150 million barrels above their 5-year average at the end of September 2006, EIA projects that OECD commercial stocks will be about 20 million barrels below the 5-year average by the end of this year (Figure 3). Even with a moderate increase in OPEC output beginning in the fourth quarter of 2007, EIA projects that inventories will continue to decline relative to the average in the first quarter of 2008, and will move toward the lower end of the 5-year range through 2008.

Figure 3. OECD Commercial Stocks: Record Highs to Near Normal Levels.



Source: Energy Information Administration, *Short-Term Energy Outlook*, November 2007.

6) Excess capacity in the refining industry has been shrinking as refined product demand has grown. Low excess refining capacity leaves less of a buffer for periods when the supply and demand balance becomes unusually tight. Furthermore, low excess refining capacity leaves little flexibility to economically accommodate unplanned refinery outages. In OECD Europe, total commercial product inventory levels actually declined from May to August 2007 by over 400,000 barrels, in contrast to the last 5 years when inventories increased on average during these months by more than 600,000 barrels.

7) Geopolitical risks raise supply concerns. In a market with tight spare capacity and low forward cover in terms of days of supply, further risks introduced by geopolitical instability in many OPEC, as well as non-OPEC countries, put additional upward pressure on inventory demand and crude oil prices. A lack of political stability continues to threaten production in several OPEC nations, including Iraq, Nigeria, Venezuela, and Iran.

- **Iraq** is struggling to revitalize its oil industry after decades of wars, sanctions, and underinvestment. Exports of Kirkuk crude oil from the country's north are sporadic as sabotage and technical problems have mostly idled the pipeline since the war in Iraq began in March 2003, preventing exports from returning to the pre-war rate. The threat of a

possible Turkish incursion against Kurdish rebels in Iraq has added to supply worries.

- Supplies of crude from **Nigeria**, the world's eighth-largest oil exporter, have been cut since February 2006 because of militant attacks on the country's oil industry. Oil companies have detailed about 547,000 bbl/d of shut-in Nigerian production due to attacks and sabotage.
- **Venezuelan oil** production has never fully recovered since December 2002, when political strife brought Venezuelan production to a halt. Venezuela's decision to fully nationalize its oil industry has led to further worries that production will continue to fall as oil revenues that could have been re-invested in its oil industry are used instead to meet other national goals.
- Oil consumers are concerned about supply disruptions in **Iran**, the world's fourth-biggest exporter, which is locked in a dispute with the West over its nuclear program. Recently, tighter U.S. sanctions have also weighed on the market.