

# Viewpoint

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## The complicated world of energy

According to data recently published by Bloomberg and the Bespoke Investment Group, the price of oil has risen 729.58 percent from its low on Nov. 19, 2001 to its closing high of \$138.54 on June 6 of this year. As is often the case, there is no single factor that explains this phenomenon in its entirety by itself. Instead, it is necessary to analyze the interplay among several factors that jointly have produced this explosive rise in the price of oil.

First, we need to look at the fundamental factors, which in the world of economics means the interplay between demand and supply. According to the U.S. Energy Information Administration, daily world oil consumption stands at approximately 85.95 million barrels per day, while daily supply stands at about 85.52 million barrels. Thus, there is currently a shortage of about 430,000 barrels per day.

Most analysts agree that while this imbalance between demand and supply levels is real, it is not large enough to explain the meteoric rise in the price of oil. If we dig deeper and analyze the growth rates of demand and supply over the short term, we find that according to the Statistical Review of World Energy published by British Petroleum, global oil consumption, driven mostly by growing demand from China and India, increased by 1.1 percent during calendar year 2007, while global oil production fell by 0.2 per cent during that same period. This disparity in the growth rate of supply and demand for oil explains a significant part of the price increase registered during the last year.

In addition, we have witnessed an increase in the premium that refiners are paying for the high-quality crude they use to produce diesel and gasoline. The Financial Times reports that refiners currently are willing to pay a higher price for physical supplies than the futures benchmark used by financial markets — a sign of strong demand in the physical oil market. For example, the premium for Nigeria's high grade Bonny Light oil has surged to \$4 a barrel, up from \$2.50 a year ago. During that same period, the discount for low-grade Iran Heavy oil has increased to \$13.05 a barrel from \$7.



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This split in the physical markets explains OPEC's reluctance to increase its production, as most of its spare capacity is of low-quality oil. In addition it reflects a lack of capacity at refineries that can turn heavy, low-quality oil into products such as diesel. This shortage of refining capacity means, for example, that flooding the world market with heavy, low-quality Venezuelan oil will not translate into lower gasoline prices. Simply put, there are not enough refineries to process that type of crude.

Second, some analysts have pointed to the effect of speculation in driving up the price of oil in the financial markets. This speculation is driven mostly by investors seeking high dollar returns and who, given low interest rates in the United States and the relative weakness of the dollar, have opted instead to invest in oil future contracts in order to realize short term gains. These factors clearly have had an impact in the oil markets, but mostly at the margin. In the end, the data indicates that high prices are caused mostly by the fundamental factors explained above.

Finally, there are the geopolitical storm clouds that cast a threatening shadow on the stability of supply — militias bombing pipelines in Nigeria, the president of Iran threatening to wipe Israel off the map, political and religious instability in Iraq, and Hugo Chávez being his usual self in Venezuela — all these work together to increase the price of oil.

The sharp increase in oil prices has adversely affected the

price of electricity, gasoline, and, less predictably, some basic food items. Puerto Rico depends on oil for 72 percent of its electricity generation. The Puerto Rico Electric Power Authority, the monopoly provider of electricity in the island, plans to address this situation by shifting some of its generating capacity to natural gas over the next 5 to 10 years — an initiative with some merit, but not much. Natural gas prices tend to move in tandem with oil prices and over the last 20 years about 70 percent of the increase in the price of natural gas can be explained by increases in the price of oil. In addition, natural gas, just like oil, is a non-renewable fossil fuel with a significantly large carbon footprint.

The link between crude oil and gasoline prices is obvious. Unfortunately, there is not much that can be done in the short-term to reduce our dependence on gasoline for transportation. Ethanol has shown some promise, but its production has generated other environmental and social problems, such as the increased use of chemical fertilizers; shortages of key staples such as wheat and rice due to a shift in production towards corn and sugar cane; inflation of food prices, which may generate famine conditions in poor countries; and appalling working conditions for laborers in the sugar cane fields, specially in places like Brazil.

In the end, we have to agree with Tony Hayward, chief executive of BP, when he says that "high prices are saying we need more investment, in energy efficiency, new production, new technology and new energy sources such as wind, solar and nuclear." Puerto Rico would do well to pay attention to the market's signals. We need to put all the energy options on the table, analyze which make sense in the context of Puerto Rico, establish a rational energy policy, and invest accordingly. There are plenty of opportunities in this complicated world of energy, but just like with everything else in life, these tend to go to those best prepared to exploit them.

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