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Why *Oil* Could Go to \$60

BY PHILIP K. VERLEGER, JR.

*As the world teeters
on the precipice
of another crisis,
it's time for a
contingency plan.*

The rise in energy prices after the successful invasion of Iraq has focused attention once again on energy markets. A year after the military effort that many experts believed would bring crude prices down (including *Wall Street Journal* editors, who predicted prices would halve¹), crude oil prices were 56 percent higher than at the end of the war, while regular retail gasoline prices, which averaged \$1.86 per gallon during the summer of 2004, were 28 percent higher than a year earlier. At the end of August 2004, crude oil prices were 32 percent higher than at their peak during the market chaos that preceded the Iraq invasion. This market behavior stands in marked contrast to the price response following Iraq's 1990 invasion of Kuwait and the subsequent Gulf War (see Table 1).

The rise in oil prices has been propelled by the inexorable increase in the "far forward price of crude" following the end of formal hostilities in Iraq. Between May 19, 2003—the day President Bush declared "mission accomplished" from the deck of the USS *Abraham Lincoln*—and August 19, 2004, the price quoted for oil delivered in December 2009 rose from \$23.92

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per barrel to \$36, a 50 percent increase. During this 14-month period, the increase was unrelenting (Figure 1).

This rise in forward prices was matched by increases in prices bid for high-quality equity units offering investors a return directly linked to oil prices. Share prices offered for the BP Prudhoe Bay Royalty Trust, a trust issued by British Petroleum for production from Prudhoe Bay in Alaska, rose from \$14 per share in May 2004 to almost \$40 per share. The increase in the BP share price corresponds to a change in investor expectations regarding the rate of increase in future oil prices. In May 2003, investors anticipated that prices would rise at a modest 2 percent, reaching \$33 per barrel by 2010. Fifteen months later, the expected rate of increase had risen to 5.5 percent, and investors now expect that prices will reach \$55 per barrel by 2010 (see Table 2).

Six reasons can be cited for the rapidly changing view regarding the global energy situation:

- First, China and India have emerged on the global energy scene as major buyers just as they have begun to make a mark on the global economic scene. Increased industrial output and a more affluent citizenry in these countries have boosted energy demand, particularly for petroleum, at record rates in both countries.
- Second, the key players in the global energy industry—both OPEC nationals and the large multinational companies—did not anticipate the demand growth and have failed to expand capacity at an adequate rate. Investment slowed or stopped following the price collapse at the end of last century and companies have been reluctant to accelerate programs since, despite four years of prices that would clearly justify a higher rate of expansion.
- Third, political circumstances in a number of key oil-exporting countries are precarious. There is widespread

Table 1 Change in world crude prices following the end of the 1991 Gulf War versus change in crude prices following the end of the Iraq War*

	Gulf War	Iraq War
Price at beginning of hostilities (\$/bbl)	30.17	24.49
Price at end of hostilities (\$/bbl)	20.11	26.27
Percent change following end of hostilities		
Three months after	-7.2	11.4
Six months after	2.9	7.9
Nine months after	-5.8	28.3
Twelve months after	-13.2	36.1
Fifteen months after	3.8	56.0

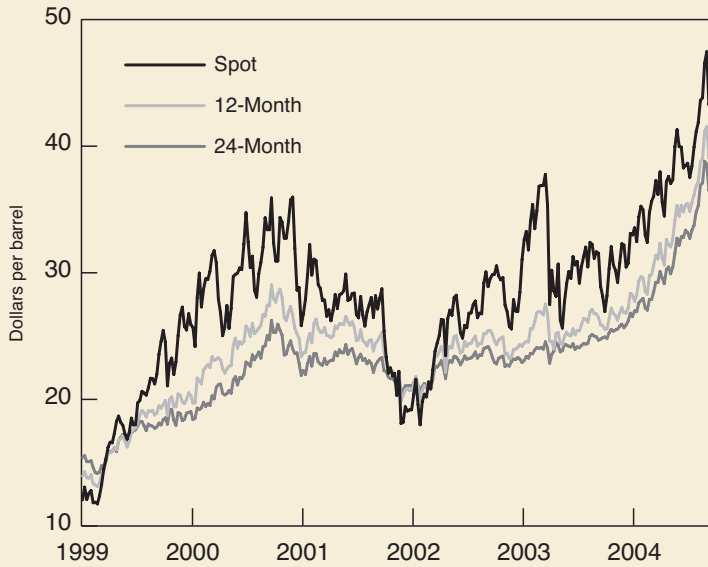
*Prices are for dated Brent crude.

Source: Platts.

concern over internally or externally led political disruptions that could result in a significant loss of oil supply or some other energy source for a prolonged period.

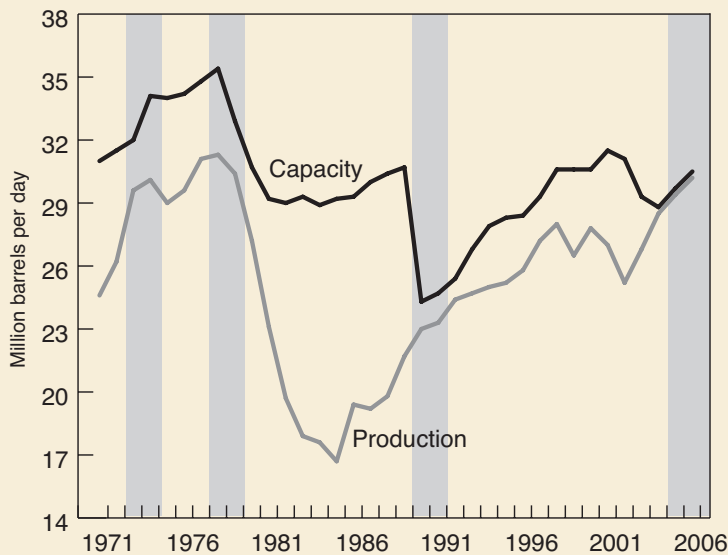
- Fourth, investment in processing and transportation capacity—particularly refineries—has been neglected in the United States and Europe. Decisions by competition regulators on both sides of the Atlantic have caused key assets to be transferred from large multinational corporations to smaller firms that lack the financial resources to expand rapidly.
- Fifth, environmental regulations adopted in the United States and Europe have reduced capacity to manufacture key transportation fuels such as gasoline, diesel fuel, and jet fuel. Limited supplies of these products have led to large product price increases, which have pulled up crude prices.
- Sixth, consumers have been led to believe that price increases experienced over the last few years are due not to the natural forces of supply and demand but rather the actions of the energy industry. This mistaken belief has discouraged conservation, particularly in the automobile sector, and created the foundation for a very large price increase to come.

Figure 1 Settlement Price of Spot, Twelve-Month Forward, and Twenty-Four-Month Forward WTI Futures



Source: Platts; NYMEX.

Figure 2 OPEC Crude Output v. OPEC Estimated Productive Capacity



Source: the author.

SCENARIOS FOR WORLD OIL MARKETS AND THE WORLD ECONOMY

The situation in the world oil markets today bears a remarkable similarity to the one observed in the late 1960s. The foundations of the 1973–74 oil crisis and subsequent recession were laid between 1960 and 1970. At that time, economic growth in Europe and Japan stimulated increased oil consumption while surplus productive capacity caused the world’s multinational companies to limit investment in production facilities.

The data for the earlier time reveal that global consumption grew at a rate of 7.6 percent per year over the six-year period. However, growth in the more developed areas (primarily the United States and Canada) was a more “sedate” 5 percent. Freeworld consumption in 1971 would have been 14 percent, or five million barrels per day, lower in 1971 than actually recorded had use in all countries expanded at 5 percent rather than the recorded 7.6 percent rate. The difference of five million barrels per day was enough to set the stage for the 1973–74 energy crisis.

Today, the emergence of China and India as principal players on the global energy scene is having the same effect. In 1990, consumption in these two countries amounted to no more than 3.5 million barrels per day, approximately 5 percent of global petroleum use. In 2003, thirteen years later, use in the two countries had more than doubled and now accounts for more than 10 percent of global oil consumption.

The impact of the two countries on world markets is illustrated in Table 3. The top row of this table shows total use by these two countries in 1990 and 2003, as well as the annual rate of growth, which is 7 percent. The second row shows total global use, which grew at the far more sedate rate of 1.3 percent per year. Row three of Table 3 shows the growth rate for global consumption excluding India and China. As may be observed from the table, global consumption without India and China increased at a rate of only 0.8 percent per year.

Between 1972 and 1974, oil prices increased by a factor of five. The price increase shared three characteristics with almost all large commodity price increases: the timing was unpredictable, the magnitude could not be forecasted, and the duration was unanticipated. The prospective rise in oil prices over the next five years has all of these hallmarks.

Table 2 Expected future oil prices derived from BP Royalty Trust (dollars per barrel)

Year	May 2003	August 2004
2005	27.17	41.92
2006	28.26	44.23
2007	29.39	46.66
2008	30.57	49.23
2009	31.79	51.94
2010	33.06	54.79
2011	34.38	57.81
2012	35.76	60.98
2013	37.19	64.34
2014	38.68	67.88
2015	40.22	71.61
2016	41.83	75.55
2017	43.51	79.70
2018	45.25	84.09
2019	47.06	88.71
2020	48.94	93.59

Source: Author's calculations.

An oil price increase of unpredictable magnitudes will occur if there are further unexpected increases in demand that cannot be met by boosting output—or if global production is disrupted. “Shortage conditions” (defined as periods when global demand cannot be satisfied at

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current prices) will likely emerge at times of stronger economic growth or at those times of year when global use crests (peak summer months and winter).

Crude prices could rise from present levels of roughly \$50 per barrel to perhaps \$60 by mid-2005 and as high as \$80 in 2006 should “shortage conditions” be experienced in those years. Even higher prices might occur later in the decade. In theory, crude prices might rise to \$160 per barrel if history followed the 1973 script precisely. As noted above, conditions today are propitious for such an increase. This does not imply, though, that an upsurge will occur in 2004 or 2006. Circumstances are favorable, but that is all that can be said.

Government strategic stocks of crude are of little use in holding back the rise in prices—as are Saudi Arabia's reserves—because these stocks are not provided to the market in a timely manner. Global consumers did not benefit from the increase in OPEC output in June of this year, but would have benefited from a boost in OPEC production or a release of

Table 3 Sources of growth in world oil consumption, 1990 to 2003 (thousand barrels per day)

	1990	2003	Annual Growth Rate (percent)
China and India	3,595	8,679	7.0
Total world	66,227	78,112	1.3
World less China and India	62,632	69,433	0.8

Source: BP Statistical Review of World Energy Markets, 2004.

Table 4 Impact on global economic growth rates in 2005 and 2006 from sustained mid- and high-price oil cases (percent)

	2005 mid-price	2005 high-price	2006 mid-price	2006 high-price
OECD	-0.4	-0.9	-0.3	-1.3
United States	-0.3	-0.7	-0.2	-1.0
Euro zone	-0.5	-1.1	-0.4	-1.6
Japan	-0.4	-0.9	-0.3	-1.3
Oil-importing developing nations				
Asia	-0.8	-1.8	-0.6	-2.6
China	-0.8	-1.8	-0.6	-2.6
India	-1.0	-2.2	-0.8	-3.2
Malaysia	-0.4	-0.9	-0.3	-1.3
Philippines	-1.6	-3.6	-1.3	-5.1
Thailand	-1.8	-4.0	-1.4	-5.8
Latin America*	-0.2	-0.4	-0.2	-0.6
Argentina	-0.4	-0.9	-0.3	-1.3
Brazil	-0.4	-0.9	-0.3	-1.3
Chile	-0.4	-0.9	-0.3	-1.3
Heavily indebted poor countries	-1.6	-3.6	-1.3	-5.1

*Includes Mexico.

Source: Author's calculations based on simulations published by the IEA.

strategic stocks in November of last year. Inventories must be released or OPEC production increased when they can be processed into products, as they could have been in the fall of 2003, not when they look good on the evening news.

The tenuous nature of the global supply-and-demand balance is captured in Figure 2, which shows OPEC productive capacity and OPEC output from 1971 through 2006. It may be noted that periods of price increases (shaded on the graph) correspond to periods of very sharp increases in production.

ECONOMIC IMPACTS OF THE PRICE SHOCK

The possible impact of the current price shock has been the subject of wide debate. There is general agreement that a \$10-per-barrel increase in oil prices will cut U.S. GDP growth by roughly 0.3 percent. This suggests that U.S. growth will be reduced by almost 1 percent if one starts from the assumption that oil prices would be \$25 per barrel, not \$50, today were it not for the factors listed above.

Today the figure of \$25 per barrel seems ridiculously low. However, on September 28, Adel Jubair, foreign affairs adviser to Saudi Arabia's Crown Prince, asserted that \$25 per barrel was the right price. His views are reinforced by studies at the major oil companies and major financial institutions, all of which point to an "equilibrium price of \$25 per barrel." This is thought to be the price at which global supply would expand at a rate roughly matched by growth in global demand.

Markets are far from this "equilibrium level" today and seem unlikely to return to it any time soon. The consequence will be a global economic slowdown. Table 4 provides an indication of the economic impacts on different world regions of mid-priced (\$35 per barrel) and high-priced (\$45 per barrel) oil compared with the \$25-per-barrel case. It may be noted that prices today are already above the \$45-per-barrel level assumed in the high-priced case.

MODERATING OR AVOIDING THE IMPENDING ENERGY CRISIS

The world seems to teeter once again on the precipice of another crisis. Prices have increased by as much as 50 percent and could rise by even larger amounts. The higher prices will have serious economic impacts. As in 1973, the world apparently faces a bleak period. However, the tools are available to moderate the crisis. By acting swiftly and by obtaining the cooperation of oil-exporting countries, governments can take steps that may avoid—or at least moderate—the coming crisis. These steps need to focus on the short and long terms.

In the short run, the United States and other consuming countries need to take steps to remove the barriers that are artificially elevating prices. These steps include changes in short-term regulations, promotion of seasonal inventory management practices, development of measures that assure better overall inventory management, aggressive advocacy of conservation, promotion of

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greater flexibility in environmental standards, and action to encourage counter-seasonal inventory accumulation.

In the long term, consuming and producing countries need to promote oil price stabilization within an acceptable range by establishing a mechanism to keep prices in that range and supporting needed refinery expansion.

This effort can move forward only if the key players—major consuming and producing nations—agree that benchmark oil prices will be kept within agreed-on bounds. For years now, representatives of producing and consuming states have met annually to discuss “producer-consumer relations.” These encounters are nothing but a charade. There has been no talk of stabilizing prices. Today, the parties could engage in a dialogue. Consuming countries could propose a price target and offer (or threaten) to release government stocks to achieve the goal. Oil-exporting countries could counter with a different price—or threaten to cut production to counter consuming-nation actions. Consuming

countries could come back with the ultimate threat: increases in petrol and gasoline taxes. Packaged under the right label (such as Tom Friedman’s “Patriot Tax”) and accompanied by appropriate compensating cuts in other taxes, the measures would become law and squeeze producers.

The optimal solution, though, is not confrontation but cooperation. Oil exporters and consumers seek a stable price. Private companies, including the major international firms, want an assured price before investing in high-cost, high-risk projects. Thus, there is much to be gained by an agreement between producers and consumers regarding an “equilibrium price.” Once such a price is determined, both producing and consuming countries must consent to the steps required to maintain that level. These must include:

- Expanding global stockpiles when the opportunity arises (clearly, it is not appropriate to expand inventories today when crude sells for \$50 per barrel);
- Developing a program to sell stocks when prices exceed the stipulated ceiling;
- Funding a program to acquire oil for stockpiles if supply exceeds consumer demand at the floor price; and
- Creating a program where all producers share any production cuts required when stockpiles are filled to capacity, an event that seems unlikely at this writing.

Long-term planning needs to embrace other measures to slow or stop the growth rate of hydrocarbon consumption in industrialized countries, if the pessimistic supply projections of some geologists turn out to be correct, as well as to stabilize the rate of increase in greenhouse gas emissions. The plan should also include proposals to reduce use through technological improvements, such as those advanced recently by the Rocky Mountain Institute in its publication *Winning the Oil Endgame*. One might also hope that such a program would include a large gasoline tax—but experience suggests such a hope is forlorn. ◆

NOTES

1. “The Economic Fog of War,” *The Wall Street Journal*, February 12, 2003.