

Hundred Dollar Five Percent and the *Coming*

Why the Fed is in trouble.

BY PHILIP K. VERLEGER, JR.

THE INTERNATIONAL
ECONOMY
THE MAGAZINE OF
INTERNATIONAL ECONOMIC POLICY
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Many believe the continuation of current low inflation depends solely on the Federal Reserve's ongoing ability to maintain a stable price environment. Proponents of this "monetarist" view belittle warnings that rising prices in one sector or another threaten to boost inflation rates.

Echoing Milton Friedman's famous dictum, they assert that price levels are determined strictly by monetary policy.

The collapse of labor's market power brought about by free trade, deregulation, and more competitive retailing has clearly strengthened the ability of the Federal Reserve and other central banks to limit the pass-through from shocks into wage and price pressures. Their power to contain prices, however, is still not absolute. Constraints remain. Today, one of those limitations can be found in the energy sector where an industry already operating at essentially full capacity has just suffered major, nontransitory capacity losses. Additional capacity reductions can be expected in the next year. Repair of existing capacity, not to mention expansion, will take several years.¹

In 2006, inflation rates may rise to above 5 percent in the United States if economic growth continues at current rates, even if the dollar holds its value. Such an increase in inflation would be caused by

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Oil, Inflation, Recession



economic growth that would pull oil prices to \$100 per barrel. It is unlikely that the Bernanke-chaired Federal Reserve Board can or will tolerate such increases in inflation. Interest rates will rise. Output growth will slow and the United States could fall into recession. This recession, like the previous three instances, will be caused by constraints in the energy sector.

THE BACKGROUND OF RISING OIL PRICES AND PAST RECESSIONS

Oil prices surged from \$10 per barrel at the beginning of 1999 to almost \$70 in September 2005, a rate of almost 40 percent per annum. The rise in prices can be associated with three specific periods in the global oil market (see Figure 1). The first period occurred from roughly 1995 to March 1999. During this time, markets were characterized by surplus capacities in all areas. OPEC members produced at far below capacity. Natural gas supplies in the United States and Europe exceeded demand. Petroleum refineries operated at less than capacity.

The second period began on March 1, 1999. On that date, Saudi Arabia coerced production cuts from other OPEC members and from Russia,

Smart Call

In 2004, Philip Verleger argued—correctly—in *TIE* that the price of oil could jump to \$60 per barrel. At the time, the price was \$35 per barrel.

—*TIE*

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 believe would bring crude prices down to the level that *Crude Journal* editors, who predicted prices would fall to \$30, crude oil prices were 50 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 52 percent higher than at their peak during the market shock 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 insupportable increase in the "far forward price of crude" following the end of formal business in Iraq. Between May 19, 2003—the day President Bush declared "mission accomplished" from the deck of the USS *Intrepid* (see sidebar)—and August 19, 2004, the price quoted for oil delivered in December 2009 rose from \$23.97

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Mexico, and Norway. At the time, crude oil traded for \$10 per barrel. Saudi Arabia announced it would boost production by almost 50 percent, thereby collapsing oil prices further if other producers did not agree to reduce output. Saudi leaders also explained to oil producers that every country would gain if they lowered production. Everyone cooperated. From March 1999 to the spring of 2004, oil-exporting countries aggressively sought to restrain production and keep inventories in consuming countries low. The strategy led to crude price increases followed by product price increases. It was an artificial (not a fundamental) supply constraint, but it worked just as well as a real one.



Fed Governor Don Kohn: Thinks high energy prices will soon reverse. What energy problem?

Kohn's Genius or Kohn's Folly?

The energy price rise related to the energy supply curve's inelasticity poses a serious problem for economic policymakers.

The effort to avoid the problem is evident in speeches made by Fed members. For example, Donald Kohn, a highly respected governor, recently commented, "However, futures prices for crude oil and wholesale gasoline suggest that some portion of the post-hurricane increase in retail energy prices is likely to reverse over coming quarters." While Kohn went on to acknowledge that natural gas prices would likely remain high, his remarks indicate little concern regarding the squeeze on supply identified above.

With time, the views of Kohn and other economic policymakers will change.

—P. Verleger

From the spring of 2004 on, the world has confronted a genuine constraint, one not related to crude oil but to refining capacity. In the United States, natural gas supplies have been squeezed as well. Product prices have surged and crude has followed. The refining constraint has occurred because world refiners have been unable to meet consumer demand for products meeting specifications established by environmental regulators in the major oil-consuming economies. Rapid, partially unexpected increases in demand for products in China, India, Europe, and the United States have required substantial product price rises. Arbitrage has caused crude to follow.

The rise in energy prices creates a new problem for economic policymakers because the capacity constraints cannot be easily addressed over the next four years. Increased demands for products must be met by sharply higher prices to balance consumption with capacity. Central bankers must fight a new war that is more challenging than constraining inflation expectations has been of late, given weaker pricing power and labor bargaining strength. Over the last several years, the central bank has remained extraordinarily relaxed as unemployment rates have dropped. Former Fed Chairman Alan Greenspan has repeatedly mentioned the effect of globalization and deregulation. In February 2004 testimony, he remarked, "A consequence of the rapid gains in productivity and slack in our labor and product markets has been sustained downward pressure on inflation."² Seven years ear-

lier, Greenspan had heralded the Phillips curve's flattening when he commented on the "atypical restraint on compensation" that had been evident for an extended period.³

THE NEW WAR: THE VERTICAL SUPPLY CURVE FOR ENERGY

Labor is not and never has been the sole contributor to inflation. Weaker foreign exchange rates or rising prices for key commodity prices can and have contributed to the problem. Today central banks face a new constraint on their action from a vertical (totally

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AP PHOTO/PETER COSGROVE

An oil platform ripped from its mooring in the Gulf of Mexico rests by the shore in Dauphin Island, Alabama, after Hurricane Katrina passed through the area.

inelastic) supply curve for energy. For reasons discussed below, the constraint from the energy sector will be one of the most important factors—if not the most important—facing monetary policy officials for the next three to four years if the global economy continues to expand. The energy constraint must dominate policymaking because it will almost certainly limit the growth of potential GDP for the next five years. Indeed, the energy constraint could propel the U.S. economy into a deflationary cycle if it is improperly addressed.

Unfortunately, the energy constraint, to this date, has been misunderstood at the Federal Reserve, if speeches by Greenspan in the last year of his chairmanship are representative. In addresses in Tokyo and New York in 2005, he spoke of the long-term trends in the development of oil and gas reserves; technological innovation, especially regarding the growth of liquefied natural gas; the U.S. economy's improved energy efficiency; and the market's role in

encouraging conservation.⁴ While these historical reviews make interesting bedtime reading, they totally overlook the central problems in today's energy market, to wit,

■ The energy industry in the United States and much of the world today lacks the capacity to *transform* raw energy supplies into the product volumes needed and demanded by consumers. This capacity constraint could limit economic growth for several years.

■ The energy industry in the United States and much of the rest of the world also lacks the capacity to *deliver* adequate supplies to consumers where they need it. These delivery constraints may also last for several years.

These two facts imply that the global growth rate will be held below trend in the near term.

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Tight gasoline markets next summer could easily lead to crude prices of around \$100 per barrel. Our analysis indicates that crude price increase to \$100 would boost U.S. inflation rates above 5 percent.

THE FALSE PROMISE OF IMPROVED ENERGY EFFICIENCY FOR ECONOMIC GROWTH

Chairman Greenspan and other observers frequently assert that the current energy price increases have caused less damage to the U.S. or global economy because the United States and most other countries now use energy more efficiently. In his October 2005 Tokyo speech, Greenspan noted the improvement with respect to petroleum:

In the United States, between 1945 and 1973, consumption of petroleum products rose at a startling average annual rate of 4.5 percent, well in excess of growth of our real GDP. However, between 1973 and 2004, oil consumption grew in the United States, on average, at only 0.5 percent per

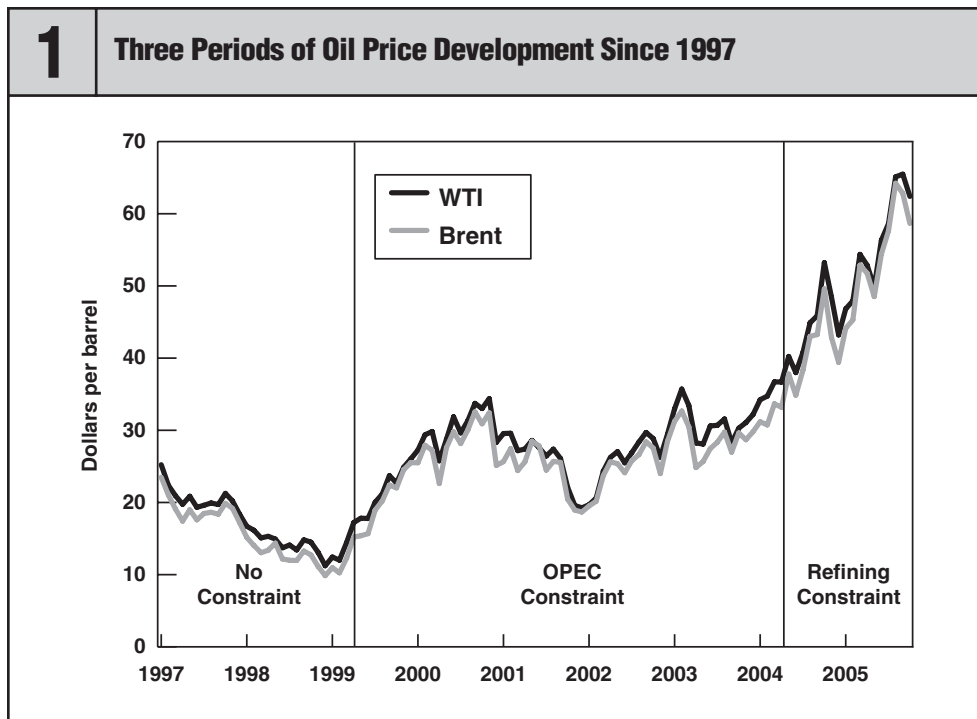
year, far short of the rise in real GDP. In consequence, the ratio of U.S. oil consumption to GDP fell by half.⁵

We present the trend cited by Chairman Greenspan in Figure 2, which shows barrels of petroleum consumed per million dollars of real GDP.

The decline in the intensity of oil use is welcome news. However, many of those heralding it implicitly suggest (and may believe) that the drop in energy intensity implies that economic growth is no longer linked to energy supply; in other words, that growth has been “decoupled” from energy. Such assumptions are incorrect. The energy supply’s failure to increase will slow or stop economic growth *unless energy prices rise by an amount sufficient to offset the demand growth for oil.*

Most studies of energy demand suggest very large price increases are required to offset the rise in demand. Today, for example, retail prices of petroleum products might need to increase by 20 percent in 2006 to hold consumption at 2005 levels if GDP rose by 3 percent.

The problem for the U.S. and global economies is the supply of some energy sources—particularly key petroleum products and natural gas—may decline from 2005 levels in 2006. Furthermore, potential supplies could remain tight in 2007 and 2008. This implies that retail energy prices may need to rise at rates in excess of 20 percent annually from current levels for several years.



ENERGY SUPPLY CONSTRAINTS

The economies of most major industrialized nations—including China, the European Union, the United States, and, indirectly, Canada—face energy constraints. Some of these constraints result from environmental regulatory programs, others from the failure of capacity expansion to keep up with economic growth, while still others occur as the result of natural disasters. Environmental regulations adopted across the globe have crimped fuel supply. Available supplies are also limited as a result of the energy industry's underinvestment in downstream capacity. Finally, a series of major hurricanes have disrupted U.S. natural gas supplies.

Regulatory supply constraints account for perhaps 50 percent of the reduction in available product supply for 2006. The adoption of new regulations requiring the sulfur reduction in diesel fuel imposed by China, the European Union, India, and, in 2006, the United States, will cut into the diesel fuel supply next year. At the same time, energy legislation passed by Congress in August 2005 will force the removal of MTBE (methyl tertiary-butyl ether) from gasoline beginning in May 2006. The new law will cut the supply of indigenously produced gasoline by 2 percent.

In theory, increasing demand for petroleum products could be met from imports. However, the United States and the European Union have erected the equivalent of trade barriers by imposing increasingly tight specifications on petroleum products. For example, the United States began implementing a program to reduce gasoline sulfur content in January 2004. Many foreign refiners have found themselves excluded from U.S. markets as these regulations tightened. Simultaneously, Europe's adoption of rules limiting diesel sulfur content has made it more difficult for Russian refiners to export to Europe.

The Environmental Protection Agency granted temporary waivers to these regulations following Hurricanes Katrina and Rita. For example,

rules that limit gasoline production during the summer were relaxed immediately following Katrina. The change boosted gasoline supply but at a significant environmental cost. Pollution levels rose in cities such as St. Louis when temperatures rose to 90 degrees. EPA also permitted importation of gasoline with higher sulfur content. Again, though, the waivers create serious long-term costs because the sulfur will destroy catalysts in late-model vehicles.

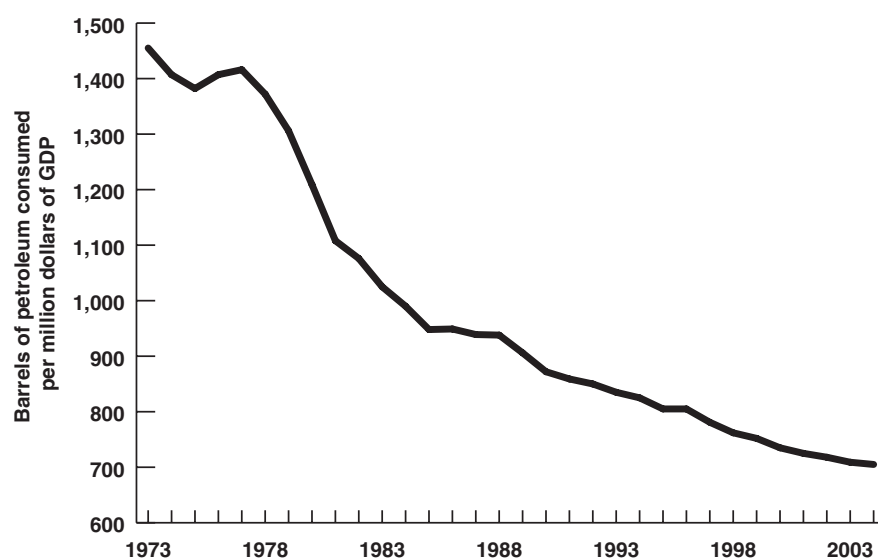
Underinvestment in downstream capacity accounts for perhaps a further 30 percent of the supply constraint. Over the last three decades, little investment has been made in new refining capacity in any major industrialized country. In the United States, no new refineries have been built for thirty years. Nor have new refineries been constructed in the United Kingdom, Germany, France, Japan, or any other industrialized countries.

The absence of new refinery construction does not imply that capacity did not increase. Often, the oil industry finds it easier to expand existing facilities than to build new ones, particularly given the environmental opposition that often confronts new construction. (It does not help that the ideal location for a new refinery is on the ocean because most crude oil moves by ship.)

However, expansion of existing facilities was insufficient. Demand for petroleum products grew

2

Oil Use Per Million Dollars of Real GDP



*In economic terms, what
is described here is a leftward shift of
the vertical portion
of the energy supply curve.*

more rapidly than capacity. In the United States, the auto industry created the demand by building larger, less-efficient vehicles. The oil industry did not respond by adding capacity. The story seems to be the same in Europe.

Three justifications can be offered for the lack of investment in capacity. First, financial returns earned by refining enterprises were terrible. Second, refiners were required to invest large sums in existing facilities to reduce emissions and improve the quality of products marketed in the United States. Third, competition authorities forced the large integrated companies to sell refineries to smaller undercapitalized firms as a condition for mergers.

Many companies cut investment in refining activities because the line of business generated very low financial returns. A December 2004 report by the National Petroleum Council (an advisory group to the U.S. Secretary of Energy) reported that returns on capital employed in the refining and marketing sector from a twenty-year period were only 5 percent compared to 7 percent for the entire petroleum industry, clearly implying that the industry needed to divert investment to other activities given the competitive nature of capital markets.

Much of the investment allocated to refining had to be used to produce cleaner products and reduce emissions. Refiners have been required by the EPA to spend billions to improve the quality of gasoline and diesel products as well as reduce air and water emissions from refineries. The National Petroleum Council reports that 30 percent of \$162 billion spent by refiners from 1985 to 2002 went to environmental programs rather than capacity expansion.

Some of the environmental investments were needed to improve air quality. But in many cases, EPA mandates were issued following a battle between oil and automakers. Often, environmental tradeoffs could be made by the oil or the auto industry. For example, Detroit encouraged putting the financial burden on the oil industry rather than requiring the installation of more expensive devices on

cars. The auto industry generally won the debates and refiners were forced to make the investment.

The environmental investment came at the expense of capacity, however. Today, oil companies are enjoying better financial returns because refining capacity did not expand and foreign refiners generally cannot produce products that meet EPA's exacting standards. Ironically, the auto industry helped erect trade barriers that protect U.S. refiners and force up gasoline and diesel prices, effectively killing demand for their vehicles.

Competition authorities further restricted refining capacity. Merger authorities, particularly the Federal Trade Commission, follow a "one size fits all" approach to regulating mergers. Proposals to merge bakeries are examined in the same way as refinery mergers. In all cases, the FTC computes the HHI (Herfindahl-Hirschman Index). Divestitures are demanded if the FTC finds the index will rise above a specific threshold following the merger.

The level used by the FTC to determine whether a divestiture is required is based on the market share (share of production) in the "relevant market." Exxon, for example, was required to sell one of its western U.S. refineries when it purchased Mobil because the share of refining owned by the new firm would have been too high. The FTC determined that the merged firm would have enough market power to raise prices unilaterally.

The FTC did not consider—and never makes allowance for—the fact that such divestitures might reduce long-term investment in capacity. Regulators were apparently unconcerned with the fact that the firm purchasing Exxon's refinery might not have the financial resources to expand capacity. As a result, in the case of the ExxonMobil merger, the FTC preserved competition but created a situation where refining capacity in the relevant market would stagnate as the car population rose and gasoline demand increased. This created the peculiar situation where gasoline prices in a clearly competitive market rose faster over the seven years following the merger than they would have had the merged ExxonMobil kept the refineries and expanded capacity. In short, through its "one size fits all" approach, the FTC has condemned American consumers to higher gasoline prices and transferred billions in wealth to smaller refining companies.

In the oil industry, the FTC has demanded divestitures by Shell, Exxon, Valero, and Conoco Phillips. The Commission's action has almost certainly led to reduced refining capacity across the country because the firms that bought the facilities—Valero, Tesoro, and Frontier—were constrained by very high debt ratios when they made the purchases. These independent refiners have earned extraordinary profits because they have been protected from foreign competition by EPA regulations that block imports.

Hurricanes, accidents, and acts of God have also contributed to supply loss. Two hurricanes in particular, Katrina and Rita, have done more damage to the petroleum infrastructure than any other storms in recent history. For a time they idled more than a quarter of U.S. refining capacity. Hurricane damage also shut down a portion of U.S. natural gas production from the Gulf of Mexico, some of which will not be brought back into operation for a year. Hurricane damage to the infrastructure that processes natural gas forced additional production halts in areas such as New Mexico.

Some of the lost supply can be replaced by increased imports. Petroleum products, for example, can and have been obtained from foreign refiners. The loss of natural gas production cannot be replaced, though, because the United States has very limited infrastructure to receive imports. Instead, supply must be rationed by price or other means.

The damage from the two hurricanes has at least two components: the reduction in current supply and increased potential for future output disruptions because of deferred maintenance at facilities not damaged by the storms.

The direct impact of the hurricanes has been measured in the temporary supply loss of refined petroleum products and natural gas. Immediately after the hurricanes more than 25 percent of U.S. refining capacity was shut down. The refinery closings reduced heating oil and gasoline production by possibly 54 million barrels. Some of these supplies were replaced by product releases from strategic reserves in Europe and Japan through the International Energy Agency. However, a deficit of perhaps 4 percent of pre-storm production remained. Furthermore, the oil released from strategic reserves borrows from global supplies in 2006. Rebuilding stocks will cut the volume of oil available to the market.

The refining gap, however, has been quickly closed. By the first of November 2005, only 5 percent of U.S. refining capacity was still shut.

The natural gas situation is different. Half the natural gas production from the U.S. Gulf of Mexico was shuttered by the hurricanes as of November 1, 2005. Most of this production will remain shut until at least mid-2006. This represents a 10 percent loss in U.S. natural gas supply. In addition, production in other areas not affected by the hurricanes, such as New Mexico, remains shut because plants that process raw gas were damaged or destroyed. In testimony to Congress on October 27, 2005, U.S. Secretary of the Interior Gale Norton reported additional onshore gas production could remain offline for much of 2006 due to the loss of processing plants. The loss may represent another 1 to 2 percent of U.S. output.

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certainly limit the growth of potential
GDP for the next five years.*

Most of the lost natural gas supply cannot be replaced with additional imports. The United States receives natural gas from three sources: domestic production (81 percent of supply), imports from Canada (16 percent of supply), and imports of liquefied natural gas (3 percent of supply). In the future, liquefied natural gas is projected to play a much larger role in meeting U.S. natural gas needs. Today, though, facilities to receive additional supplies are not available.

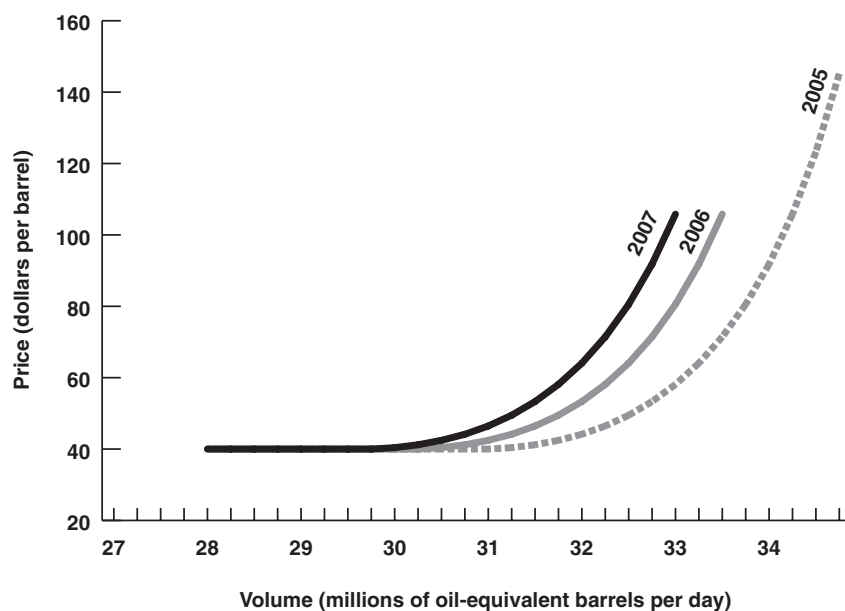
The natural gas problem will create economic difficulties. Prices must rise to balance limited supplies. The higher prices will allocate the limited supplies by inducing conservation, by causing some industrial activities to close, and by encouraging some to switch to alternative fuels such as oil or coal.

The hurricanes' indirect effect will be felt when oil refineries that deferred maintenance shutdowns after Katrina and Rita are forced to shut in 2006. Following the hurricanes, the Secretary of Energy and President Bush called on refiners to put off maintenance at refineries not affected by the storms. Most cooperated. This acquiescence will have a future cost, though, because maintenance cannot be delayed indefinitely. As a matter of fact, refiners schedule maintenance to avoid serious accidents that can shut facilities for months or years. Maintenance programs must be scheduled with care because they involve a very large number of contractors (who themselves are in very limited supply) and can easily cost more than \$10 million per facility.

The deferred maintenance will likely reduce output of petroleum products, particularly next spring. Gasoline could be seriously affected as the oil industry starts to prepare for peak summer production.

The supply loss will constrain economic growth. The lack of investment, regulatory factors, and storm damage have reduced the potential energy supply available to the U.S.

3

Illustrative Supply Curve of U.S. Availability of Natural Gas and Petroleum Products at Various Price Levels for 2005, 2006, and 2007


economy in 2006—and potentially in later years if future hurricanes further damage the energy infrastructure.

In economic terms, what is described here is a leftward shift of the vertical portion of the energy supply curve. The effect is characterized in a stylized way in Figure 3. There we show a supply curve for petroleum products and natural gas. In this case, supply measures petroleum products plus natural gas in millions of “equivalent” barrels per day. The curve is very elastic until supply reaches approximately 31 mboed (millions of oil-equivalent barrels per day) and then becomes almost totally inelastic when it reaches 32 mboed.

In Figure 3, we show the curve shifting leftward by roughly 2 percent in 2006 from 2005 due to the production loss described above. We also show a hypothetical 2007 curve that could occur if the United States were to experience severe storms in the Gulf of Mexico in the summer and fall of 2006. It must be added that, while the inward shift in the supply curve in 2007 is feasible, it seems extreme.

Viewing this characterization, readers may ask whether the substantial money being invested in the oil industry should not be pushing the supply curve to the right. The answer to this question is a conditional yes. Investment will expand capacity if storms, regulations, and accidents were not working against the energy industry. Substantial sums must be paid just to repair damage and maintain capacity.

Continued economic growth would require very large price increases given the supply loss from the energy sector. As noted above, continued GDP expansion of 3 percent per year would probably require increased retail energy prices of roughly 35 percent in 2006 and 25 percent in 2007.

The product price rise will pull up crude prices. There is a little-understood relationship between product and crude prices. Across the globe, traders for major oil companies, oil trading firms, and investment banks conduct continuous arbitrage in oil markets. These traders understand that different crude oils produce different “slates” of products such as gasoline, heating oil, and jet

fuel. As product prices change, traders will alter their bids for crude. As crude prices change, they will alter their offers for products. In the end, the crude price will closely track the value of products produced by the crude.

This product/crude relationship implies that the product shortage noted above will raise crude prices in the United States and across the globe. Tight gasoline markets next summer could easily lead to crude prices of around \$100 per barrel. Our analysis indicates that a crude price increase to \$100 would boost U.S. inflation rates above 6 percent.

In summary, economic policymakers can expect continued increases in retail energy prices of a magnitude similar to that of price increases observed over the last year. There is no reason to foresee a reduction in energy prices in 2006 or 2007 if the global economy expands at the expected rate.

THE PROBLEM FOR MONETARY POLICYMAKERS

The energy price rise related to the energy supply curve’s inelasticity poses a serious problem for economic policymakers, particularly the Federal Reserve Board. To date, the Federal Reserve has tried to ignore it. However, such an approach will become increasingly difficult.

The effort to avoid the problem is evident in speeches made by Fed members. For example, Donald Kohn, a highly respected governor, recently commented,

“However, futures prices for crude oil and wholesale gasoline suggest that some portion of the post-hurricane increase in retail energy prices is likely to reverse over coming quarters.”⁶ While Kohn went on to acknowledge that natural gas prices would likely remain high, his

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remarks indicate little concern regarding the squeeze on supply identified above.

With time, the views of Kohn and other economic policymakers will change. Gasoline price increases in the spring of 2006 may finally alert them to the growing problem. By then, however, it may be too late to act. Indeed, it is too late today to address the inadequacy of refining capacity or the lack of liquefied natural gas import facilities. Capital projects require years to complete.

There are a few steps, however, that could alleviate the problem if taken promptly. Most relate to environmental rules. As noted above, EPA regulations imposed over the last decade have effectively constructed barriers to trade in petroleum products. Many of the rules are in the form of prohibitions. To be imported, products must meet specific standards. Little flexibility is allowed except in times of emergency.

Relaxing these standards would immediately increase the potential product supply. Unleaded gasoline supplies that almost meet U.S. standards, as well as diesel supplies that are close to complying with U.S. specifications, exist on the world market. More product could no doubt be made if the regulatory system were altered.

However, environmentalists and other vested interests such as refiners and automakers will resist attempts to loosen these rules. Most EPA officials are no doubt sympathetic with these views. Under current circumstances, those responsible for overall economic policy must

instruct EPA to alter its regulations. Otherwise, the high prices that result from these rules may bring on a serious recession.

To make the relaxation of environmental rules palatable to environmentalists, policymakers may also want to consider adopting much higher energy taxes. Indeed, cuts in consumption represent the only other way to deal with the supply constraint. Evidence shows that large taxes will achieve this. These taxes need not have serious long-term impacts if other taxes are reduced to maintain fiscal neutrality.

One way to recycle the revenue while aggressively promoting conservation would be to link the higher gasoline tax to a repurchase program for large cars, SUVs, and trucks. Taxes on energy use and/or relaxation of environmental regulation with or without programs to repurchase inefficient autos are essential today to restore the supply-and-demand balance at lower price levels and create a supply cushion. The only alternative is recession since the central bank cannot do anything about a vertical energy supply curve. ♦

NOTES

1. On October 29, 2005, one company, Marathon, announced it would double capacity at its largest refinery. The work will start in 2007 if permitting obstacles can be overcome. Marathon hopes the work will be finished by the end of 2009.
2. Alan Greenspan, Federal Reserve Board's Semiannual Monetary Policy Report to the Congress, before the Committee on Financial Services, U.S. House of Representatives, February 10, 2004.
3. Alan Greenspan, Federal Reserve Board's Semiannual Monetary Policy Report to the Congress, before the Committee on Financial Services, U.S. House of Representatives, February 26, 1997.
4. Chairman Greenspan spoke on energy to the New York Economic Club on May 5, 2005, and to the Japanese Business Federation on October 17, 2005.
5. Remarks by Chairman Alan Greenspan, "Energy," before the Japan Business Federation, the Japan Chamber of Commerce and Industry, and the Japan Association of Corporate Executives, Tokyo, Japan, October 17, 2005.
6. Remarks by Governor Donald L. Kohn at the 2006 Global Economic and Investment Outlook Conference, Carnegie-Mellon University, Pittsburgh, Pennsylvania, October 19, 2005.